Table of Contents

Catalog Home 2017-2018

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. This catalog covers the academic year 2017-18 which includes the summer 2017, fall 2017 and spring 2018 semesters.

Credit Catalog

Credit - earn a degree or certificate. Take these classes to earn a grade that will go on your college transcript.

Course Transfer and Reverse Transfer

Course Transfer: There is a growing list of courses approved by the Kansas Board of Regents for guaranteed transfer among all Kansas public post-secondary institutions. Visit the Kansas Board of Regents (http://www.kansasregents.org/transfer_articulation) for more information.

Reverse Transfer: Students who transfer to a Kansas public university from a Kansas public community college or technical college (or vice versa) are eligible for Reverse Transfer, which allows for the attainment of any associate degree for which one is eligible along the way to additional certificates and degrees. Visit the Kansas Board of Regents (http://www.kansasregents.org/transfer_articulation) for more information.

Continuing Education

Continuing Education Certificates (http://www.jccc.edu/continuing-education/certifications-licensure.html) - Enhance your knowledge and skills to prepare for a new career, advance to the next level, or boost performance and productivity. These certificates are non-credit and are not counted as credit hours on a student's transcript.

Credit Course Descriptions

The following course offerings at JCCC are listed alphabetically by subject area. Clicking on the subject in which you are interested will give you a list of all courses that fall under that subject and a course description (including credit hour value) for each of those courses. If you then click on a particular course (ANTH 125, for example), you will be directed to a copy of the course outline, which includes the objectives and competencies covered in the course.

Academic Achievement Center (AAC)

Courses

AAC 100   Study Skills (1 Hour)
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. 20 hrs./semester.

AAC 101   Study Skills Mini-Course (1 Hour)
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.

AAC 102   Basic Spelling (3 Hours)
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. 16 hrs./semester.

AAC 106   Vocabulary Development (1 Hour)
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. 20 hrs./semester.

AAC 112   Basic Math Review (1 Hour)
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. 20 hrs./semester.

AAC 113   Algebra Preparation (1 Hour)
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. 20 hrs./semester.

AAC 120   Individualized Study (1 Hour)
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. 20 hrs./semester.

AAC 125   College/Life Success (3 Hours)
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 Hours)
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 Hour)
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)

Courses

ACCT 109   Basics of Income Taxes (1 Hour)
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.

ACCT 111   Small Business Accounting (3 Hours)
This course will introduce the basic accounting procedures needed to maintain daily records for a small business and the use of such records in the decision-making process. Upon successful completion of the course, the student will be able to maintain a set of financial records with the occasional help of an outside accountant. This course does not prepare the student for Accounting II. 3 hrs./wk.

ACCT 121   Accounting I (3 Hours)
This course is an introduction to accounting fundamentals. Upon successful completion of this course, a student should be able to analyze transactions, use various journals and ledgers, prepare financial statements and summarize results at the close of the fiscal period for the sole proprietorship. 3 hrs./wk.

ACCT 121H   HON: Accounting I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ACCT 122   Accounting II* (3 Hours)
Prerequisites: ACCT 121 with a grade of "C" or higher.

This course is a continuation of ACCT 121. Upon successful completion of this course, the student will be able to prepare and use financial statements with increased emphasis on interpretation and use of accounting data peculiar to partnerships, corporations and manufacturing companies. 3 hrs. lecture/wk.

ACCT 122H   HON: Accounting II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ACCT 131   Federal Income Taxes I (3 Hours)
This course teaches the student federal income tax rules and the procedures for reporting federal income tax. Upon completion of this course, the student should be able to do short- and long-range tax planning and keep records that will provide appropriate information for use in preparing federal income tax. The student should also be able to prepare the standard individual federal income tax return. 3 hrs./wk.

ACCT 132   Federal Income Taxes II* (3 Hours)
Prerequisites: ACCT 131 with a grade of "C" or higher.

This course is an in-depth study of Federal Income Tax; it teaches the student federal income tax rules and the procedures for reporting federal income tax for businesses including corporations, partnerships and trusts. Upon completion of this course the student should be able to analyze basic tax scenarios, conduct tax research and complete federal tax returns for various business entities. In addition, the student should be able to conduct short- and long-term tax planning for a business. 3 hrs. lecture/wk.

ACCT 136   Computerized Accounting Applications* (2 Hours)
Prerequisites: ACCT 111 or ACCT 121.

Upon successful completion of this course, a student will be able to use accounting software to record daily transactions, perform reconciliations, record payroll, generate reports, set up new companies and create budgets. 2 hrs. lecture/wk.

ACCT 141   Computerized Accounting Problems* (2 Hours)
Prerequisites or corequisites: ACCT 122.

Upon successful completion of this course, students will be able to utilize spreadsheet software to create and solve accounting, finance and business problems. Students will analyze the spreadsheets to make business decisions. 2 hrs. lecture/wk.

ACCT 215   Accounting for Nonprofit Organizations* (3 Hours)
Prerequisites: ACCT 121.

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 222   Managerial Accounting* (3 Hours)
Prerequisites: ACCT 122 with a grade of "C" or higher.

Upon completion of this course, the student will 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. lecture/wk.

ACCT 222H   HON: Managerial Accounting* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ACCT 231   Intermediate Accounting I* (3 Hours)
Prerequisites: ACCT 122.

The course will present the use of accounting theory in the preparation of financial reports. Upon successful completion of this course, the student should be able to solve problems that arise in the presentation of cash, receivables, inventories, tangible and intangible assets on the statement of financial position, and their related effect on the statement of income. 3 hrs./wk.

ACCT 232   Intermediate Accounting II* (3 Hours)
Prerequisites: ACCT 122.

Accounting theory learned through the study of accounting concepts and technical procedures will be presented in this course. Upon completion, the student should be able to solve problems in the presentation of capital structures, long-term investments, debts, leases, pensions, the analysis of financial statements, and price-level, and fair value accounting and reporting. 3 hrs./wk.

ACCT 240   Fraud Examination* (3 Hours)
Prerequisites: ACCT 122.

This course analyzes 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, use creative ways to detect and prevent fraudulent conduct, and understand how allegations of fraud should be investigated and resolved. 3 hrs. lecture/wk.

ACCT 278   Accounting Internship* (1 Hour)
Prerequisites: ACCT 121 plus 12 additional ACCT hours beyond ACCT 121 and department approval.

The student will be able to gain work experience in an approved training station under instructional supervision in an accounting or an accounting-related occupation. This internship is designed to give students the opportunity to apply the skills they have acquired in accounting specialty courses. The internship will require an average of 12 hours of job training per week by arrangement. 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 Hours)
Prerequisites: ACCT 121 and ACCT 122 and 12 hours of accounting courses and department approval.

This course is designed as a capstone experience before entering the workplace. Topics will include managerial use of financial data, analysis of financial statements, and ethics in accounting. Students will be required to execute accounting procedures both manually and electronically through an accounting cycle. Students will use financial statements to make informed judgments and solve problems. Students will identify and apply ethical positions and effectively communicate this information to others both in writing and verbally.

ACCT 292   Special Topics:* (1-3 Hour)
Prerequisites: Department approval.

This course periodically offers specialized or advanced discipline-specific content related to diverse areas of accounting, not usually taught in the curriculum.

Administration of Justice (ADMJ)

Courses

ADMJ 121   Introduction to Administration of Justice (3 Hours) nbsp;
This course provides an overview of the three components of the American criminal justice system: police, courts and corrections. Interrelationships are stressed and problem areas discussed, particularly with respect to constitutional guarantees. 3 hrs. lecture/wk.

ADMJ 121H   HON: Introduction to Administration of Justice* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ADMJ 122   Police Operations* (3 Hours)
Prerequisites: ADMJ 121.

Students examine the role of police in society. Focus is placed on patrol, investigative activities and communications. Police operations in culturally diverse communities, legal constraints and ethical responsibilities are also discussed. 3 hrs. lecture/wk.

ADMJ 124   Criminal Justice and Corrections (3 Hours)
This course is an introductory study of the field of corrections. Correctional history and an examination of the American correctional system will be explored, including detention, incarceration and community corrections. 3 hrs. lecture/ wk.

ADMJ 127   Criminology (3 Hours)
This class will identify the major criminology theories. Various explanations for criminal conduct will be explored and society's responses to crime will 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 Hours)
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 Hours)
This course will examine law enforcement, courts, and correctional agencies which deal with youthful offenders. In addition, an analysis of the theories of delinquency causation will be reviewed. 3 hrs. lecture/wk.

ADMJ 133H   HON: Juvenile Delinquency* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ADMJ 141   Criminal Law* (3 Hours)
Prerequisites: ADMJ 121 or LAW 121.

After taking this course, the student will be able to state the two basic elements necessary for any crime and the philosophy behind these two elements. After a detailed exploration of common law crimes and selected Kansas and Missouri statutes, the student will be able to classify common law crimes and state the difference between a felony and a misdemeanor. The student will understand the significance of the separation of powers doctrine and its application to criminal law and the constant interplay of the U.S. Constitution in criminal law. 3 hrs. lecture/wk.

ADMJ 143   Crime Analysis (3 Hours)
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 Hours)
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 148   Physical and Sexual Violence within the Family (3 Hours)
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 Hours)
Criminal Procedure is an exploration of the structure of judicial processes; constitutional protections; and remedies for violations of constitutional rights. Students will learn, through discussion of important U.S. Supreme Court cases, how the Constitution is interpreted. 3 hrs. lecture/wk.

ADMJ 154   Fundamentals of Criminal Investigation (3 Hours)
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 Hours)
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 Hours)
Prerequisites: ADMJ 124.

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 Hours)
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 215   Understanding Terrorism (3 Hours)
This course serves as a basic introduction to terrorism. Students will examine current and historical events to gain an understanding of terrorist organizations. The development of terrorism and its various forms, including tactics and ideologies as well as terrorism's impact on 21st century civilization, will be examined. The course also addresses the challenges facing criminal justice professionals in developing a coordinated response to terrorism. 3 hrs. lecture/wk.

ADMJ 221   Forensic Science and Crime Scene Investigation (3 Hours)
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 Hours)
Prerequisites: ADMJ 121.

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 228   Criminal Justice Communications* (2 Hours)
Prerequisites: ENGL 121.

This class will assist students in developing the specific verbal and written communication skills used in the criminal justice field. Emphasis will be placed on the development of interviewing and report writing skills, focusing on the unique types of writing required gathering pertinent information and then recording that information by writing a variety of report narratives, represented by those prepared by individuals working in a profession within the criminal justice system. 2 hrs. lecture/wk.

ADMJ 230   Criminal Behavior* (3 Hours)
Prerequisites: PSYC 130.

This course explores the relationship between psychology, criminal behavior, and the criminal justice system. The foundation of the course will be a detailed examination of the various theories used to explain the causation of criminal behavior. Special emphasis will be placed on exploring how this understanding is applied in various settings within the criminal justice system; including police departments, the courts, and corrections. 3 hrs. lecture/wk.

ADMJ 235   Community Based Corrections (3 Hours)
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 Hours)
This course explores the study of ethics, particularly as it applies to the field of criminal justice. The development of critical thinking and decision-making skills as they relate to the criminal justice system is also examined. 3 hrs. lecture/wk.

ADMJ 265   Advanced Police Training* (12 Hours)
Prerequisites: Selective Admissions - open only to currently employed full-time police officers attending the Police Academy under sponsorship of a law enforcement agency.

This course consists of 60 clock hours of law enforcement training provided in addition to the 540 hours required by the Kansas Minimum Standards Training Act for recruits attending the Police Academy. While the required 600-hour curriculum is provided without fee, enrollment in advanced training is required of all those attending the academy. The curriculum covers law, criminal investigations, patrol procedures, defensive tactics, report writing and specialized training required by local law enforcement agencies.

ADMJ 275   Police Management* (3 Hours)
Prerequisites: ADMJ 121.

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 285   Administration of Justice Internship* (3 Hours)
Prerequisites: Fifteen credit hours in ADMJ courses or department approval and a grade point average of 2.0 or higher.

Students augment their academic course work with an internship in an appropriate setting under instructional supervision. Internship projects are cooperative efforts between appropriate federal, state or local criminal justice agencies or not-for-profit organizations, and college staff and students. Internships give students the opportunity to participate in the real-world application of their academic studies. In addition, this synthesis of classroom study with practical experience provides students with skills and insights useful in selecting a career in the field of criminal justice. The student spends the equivalent of 12 hours per week for 14 weeks performing internship duties over the course of the semester or a total of 168 hours.

ADMJ 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

American Sign Language (ASL)

Courses

ASL 120   Elementary American Sign Language I (3 Hours)
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. 6 hrs. integrated 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 Hours)
Prerequisites: ASL 120 or FL 180. All prerequisites require a grade of "C" or higher.

This course will focus on continued development of elementary American Sign Language skills beyond those taught in Elementary ASL I. Students will work on developing communication competencies, concentrating on comprehension and production skills. Information about the linguistic and cultural features will be included in the context of language learning experiences. 6 hrs. integrated lecture/lab/wk. ASL 121 and FL 181 are the same course. Do not enroll in both.

ASL 122   Intermediate American Sign Language I* (3 Hours)
Prerequisites: ASL 121 or FL 181. All prerequisites require a grade of "C" or higher.

This course will focus on the development of intermediate American Sign Language communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 6 hrs. integrated 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.

ASL 123   Intermediate American Sign Language II* (3 Hours)
Prerequisites: INTR 122 or ASL 122 or FL 270. All prerequisites require a grade of "C" or higher.

The course will continue study of intermediate American Sign Language. It is designed to develop further intermediate communication skills in American Sign Language. Information about the linguistic and cultural features will be included in the context of language learning experiences. 6 hrs. integrated lecture-lab/ wk. The daytime sections are open only to students in the interpreter training program. INTR 123, FL 271 and ASL 123 are the same courses; only enroll in one.

ASL 135   Intro to American Sign Language Linguistics* (3 Hours)
Prerequisites: INTR 122 or ASL 122 or FL 270. All prerequisities require a grade of "C" or higher.

This course introduces students to the structural and grammatical principles of ASL. Students will explore concepts of equivalency between English and ASL 3 hrs. lecture/wk. The daytime sections are open only to students in the interpreter training program. INTR 135 and ASL 135 are the same course; do not enroll in both.

ASL 145   Introduction to the Deaf Community* (3 Hours)
Prerequisites or corequisites: ASL 120 or FL 180 with a grade of "C" or higher.

This course will prepare students to develop and recognize the diversity within the Deaf Community, significant events and figures in Deaf History, and basic norms and values of Deaf Culture. Students will examine and compare Deaf Culture and hearing culture in America. The daytime sections are open only to students in the interpreter training program. 3 hrs./wk. INTR 145 and ASL 145 are the same course; do not enroll in both.

ASL 147   Fingerspelling I* (2 Hours)
Prerequisites: ASL 121 or FL 181 with a grade of "C" or higher.

Students will work on developing beginning expressive and receptive fingerspelling skills based on word recognition principles. 3 hrs. integrated lecture/ 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 Hours)
Prerequisites: INTR 122 or ASL 122 with a grade of "C" or higher.

This course will provide introduction, discussion, and demonstration of literature in American Sign Language (ASL). The literature involves ASL Poetry, ASL Storytelling/Narratives, Deaf Humor, Deaf Folklore and other genres that have been passed on from one generation to another by culturally deaf people. Students will receive, analyze and retell a variety of ASL literature. 3 hrs. lecture/wk. INTR 150 and ASL 150 are the same course; do not enroll in both.

Animation (ANI)

Courses

ANI 122   Digital Rendering for Animation* (3 Hours)
Prerequisites or corequisites: CDTP 135.

This basic digital rendering course is designed for animators and game artists. Students will study basic and advanced digital rendering elements and principles. Students will produce digitally rendered elements used in animation and gaming, including realistic and stylistic character designs, vehicles, architecture, weapons and environments. 6 hrs. integrated lecture/lab/wk.

ANI 125   Introduction to 2D Animation* (3 Hours)
Prerequisites or corequisites: CDTP 135.

In this course students will learn all aspects of traditional 2 dimensional animation, including flipbook, cell, puppet and claymation. Students will write a short story and create storyboards, an animatic and a 2-dimensional character. Students will explore the key principles of animation and learn the rules of filmmaking. Experimental animation will be integrated into the course using various artistic mediums. 6 hrs. integrated lecture/lab/wk.

ANI 130   Motion Graphics and Effects* (3 Hours)
Prerequisites or corequisites: CDTP 135.

In this course the student will create motion graphics and effects using 2D and 3D elements. Students will create render passes, create 3D elements and effects, and then composite the layers back into After Effects for further manipulation and polish. Students will also explore rotoscoping, motion tracking, motion stabilization, animating effects, text and shape animation, create and set up 2D and 3D text, lighting, materials and basic compositing. 6 hrs. integrated lecture/lab/wk.

ANI 150   Introduction to 3D Modeling and Game Art* (3 Hours)
Prerequisites or corequisites: CDTP 135.

This course provides an introduction to 3D modeling and creating game art assets for next-generation games. Students will learn industry production pipelines and create high polygon and low polygon gaming models, such as architectural, weapons, vehicles and other model assets. Students will also learn how to create photorealistic textures, light and render, create construction and texture worksheets, and export them into an existing game engine. 6 hrs. integrated lecture/lab/wk.

ANI 210   Digital Sculpting* (3 Hours)
Prerequisites: ANI 250 or.

Prerequisites or corequisites: ANI 150.

In this course the student will create basic organic-shaped models using a high-end sculpting program like ZBrush. Students will explore film and game production pipelines, basic digital sculpting techniques and alpha brush detailing. Students will also explore advanced brush techniques, polypainting and spotlight tools; rendering, lighting and materials will be covered. 6 hrs. integrated lecture/lab/wk.

ANI 220   CG Environments and Animation (3 Hours)
In this course students will create interior and exterior environments, generating various types of vegetation and terrain. The details of modeling for film and commercial environments and a range of simple to complex lighting and rendering techniques will be covered. Advanced materials and shaders will be explored. Students will also be introduced to render passes and render layers, and composite the rendered images into a polished animation product. 6 hrs. integrated lecture/lab/wk.

ANI 235   Character Modeling and Rigging* (3 Hours)
Prerequisites: ANI 250 or.

Prerequisites or corequisites: ANI 150.

In this course the student will create a character using high-end software like Maya. Students will explore character design, organic modeling, photorealistic texturing, character rigging, facial rigging, character deformation and portfolio presentation. Students will also explore advanced modeling techniques; clothing, hair and advanced materials will be covered. 6 hrs. integrated lecture/lab/wk.

ANI 245   Character Animation* (3 Hours)
Prerequisites: ANI 250 or.

Prerequisites or corequisites: ANI 150.

Students will develop and refine new skills in creating 3-dimensional character animation. The computer and cutting-edge software have become increasingly important tools in creating character animatics and 3-dimensional 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/lab/wk.

ANI 255   Advanced Animation and Effects* (3 Hours)
Prerequisites or corequisites: ANI 220.

The Advanced Animation and Effects course exposes students to various particle effects, rigid and soft body dynamics, and effects like rain, snow, lightning, fire and different types of shatter. Through hands-on tutorials students will simulate and render a variety of visual effects including liquid, cloth and hair. Students will also explore rendering layers and passes, and composite these elements into stunning portfolio work. 6 hrs. integrated lecture/lab/wk.

ANI 258   Game Level Design* (3 Hours)
Prerequisites: ANI 250 or.

Prerequisites or corequisites: ANI 150.

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 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 and 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/lab/wk.

ANI 260   Animation Capstone* (3 Hours)
Prerequisites or corequisites: ANI 255.

In this course, the student will use all the knowledge attained in previous core animation courses and develop a finished 1-2 minute independent movie following a predetermined animation production process and schedule. Students will develop a portfolio including illustrations of characters, model and texture work sheets, storyboards, props, environments, textures and final rendered scenes created for the movie. 6 hrs. integrated lecture/lab/wk.

ANI 270   Visual Effects and Compositing* (3 Hours)
Prerequisites: ANI 145 or.

Prerequisites or corequisites: ANI 220.

This course emphasizes the importance of breaking down visual effects shots for effective compositing. Advanced topics will include 2 dimensional/3 dimensional motion tracking, rotoscoping, 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/lab/wk.

ANI 275   Animation Career Preparation* (3 Hours)
Prerequisites or corequisites: ANI 255.

This course will provide animation majors instruction in the presentation of his or her work in a digital portfolio format of professional quality. A website, resume and cover letter will be produced. Self-promotion, networking, job searches and interview skills will also be covered. 6 hrs. integrated lecture/lab/wk.

Anthropology (ANTH)

Courses

ANTH 125   Cultural Anthropology (3 Hours) nbsp;
This introductory course will employ various anthropological theories, perspectives and methodologies to critically and comparatively examine an array of cultural and social topics as they relate to selected Western and non-Western cultures and societies. 3 hrs./wk.

ANTH 125H   HON: Cultural Anthropology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ANTH 126   Physical Anthropology (3 Hours)
This course is an introduction to selected concepts and principles important to an understanding of evolutionary forces and their influence on the physiology and behavior of humans. The importance of the scientific method will be explored. Awareness of humans and their place in nature will be achieved by examining basic genetics, micro- and macroevolution, primate ecology and behavior, the paleoanthropological evidence for human evolution, and modern human adaptation and variation. 3 hrs./wk.

ANTH 126H   HON: Physical Anthropology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ANTH 130   World Cultures (3 Hours)
This introductory course will utilize an ethnographic approach to introduce students to various cultural and social practices of Westernized and non-Westernized cultures and societies from around the world. This course will examine a wide range of topics including economic production, religion, world view, kinship patterns and political and economic institutions. 3 hrs./wk.

ANTH 130H   HON: World Cultures* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ANTH 134   Native Americans (3 Hours)
This ethnographic course will introduce students to the indigenous peoples and First Nations of North, Central and South America, with particular attention being paid to North America. This course will focus on selected First Nations cultures and societies to examine a wide range of topics including arts, oral traditions, religions, and Indian-White relations. 3 hrs. lecture/wk.

ANTH 134H   HON: Native Americans* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ANTH 135   American Indian Artistic Tradition (3 Hours)
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 136   Contemporary American Indian Cultures Societies (3 Hours)
This course will introduce students to the contemporary lifeways and cultural and social practices of the Native peoples of the United States. The primary focus of this course will be the second half of the 20th century through the present. A wide range of topics and issues will be covered, including, but not limited to, current Indian-White relations, federal and international laws and policies, economic development, gender issues, health disparities, contemporary arts, and religious practices. Course objectives will be accomplished through lectures, discussions, readings, and video presentations. 3 hrs. lecture/wk.

ANTH 142   World Prehistory (3 Hours)
This course is an introduction to the variety and continuity of the prehistoric human past. Through the archaeological record we will consider the evolution of humans, the transition of foraging to farming economies, the rise of complex societies, secondary state formation, and the collapse of complex societies. 3 hrs. lecture/wk.

ANTH 142H   HON: World Prehistory* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ANTH 144   Archaeology (3 Hours)
This course is an introduction to the basic concepts, methods, and findings in archaeology. The historical origins of the discipline and modern approaches to understanding the past will be presented. The course will describe the range of archaeological evidence and techniques for locating, analyzing, and interpreting these remains. 3 hrs. lecture/wk.

ANTH 144H   HON: Archaeology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ANTH 146   Archaeology of Ancient North America (3 Hours)
This course is an introduction to the indigenous peoples and cultures of ancient North America. Drawing upon archaeological and anthropological perspectives, we will survey the culturally diverse and environmentally complex continent from the first Ice Age peoples through the earliest interactions with Europeans. Key theoretical issues considered in this course include human-environmental interaction, the emergence of complexity, warfare, ritual and religion, trade, and identity. Finally, we will explore how new archaeological evidence and contemporary approaches have changed our perspectives on the peoples and lifeways of ancient North America and impacted our ethical responsibilities to their descendants. 3hrs. lecture/wk.

ANTH 146H   HON: Archaeology of Ancient North America* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ANTH 150   People and Cultures of Mesoamerica (3 Hours)
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 150H   HON: Peoples and Cultures of Mesoamerica* (1 Hour)
Prerequisites: Honors Department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ANTH 153   The Anthropology of the Paranormal Supernatural (3 Hours)
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 extrasensory perception, witchcraft and magic, ghosts, extraterrestrial 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.

ANTH 160   Medical Anthropology (3 Hours)
This course will introduce students to an understanding of human health and disease that includes both culture and biology. Western and non-Western cultures will be considered. This course will consider topics such as medical beliefs and curing practices, disease and nutrition, the connection between inequality and health disparities, and how to apply medical anthropological concepts to real-world problems. 3 hrs. lecture/wk.

ANTH 165   Linguistic Anthropology (3 Hours) nbsp;
This course is an introduction to the interaction between language and culture. We will explore the various ways humans communicate and analyze how these modes of communication reflect social and cultural identities. Students will also look at how linguistic anthropologists use methods in the field to analyze language use. At the conclusion of this course, students will see how race, ethnicity, gender and other cultural identities are expressed through language. 3 hrs. lecture/wk.

ANTH 205   Archaeological Field Methods (5 Hours)
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.

ANTH 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

ANTH 292   Special Topics: (1-3 Hour)
This course periodically offers specialized or advanced discipline-specific content related to the study of Anthropology, not usually taught in the curriculum. Due to the breadth and depth of the discipline, this course may expand upon a topic introduced in a current course, synthesize topics that cross-cut existing courses, or explore a topic not addressed currently in the Department of Anthropology curriculum. Students may repeat Special Topics in Anthropology for credit but only on different topics.

Architecture (ARCH)

Courses

ARCH 120   Introduction to Architecture (3 Hours)
This course is an introduction to the profession of architecture through a study of its history, vocabulary, theories and practices. The facets that make up the total architectural curriculum as well as the various professional roles that architects can be expected to perform will be covered. Architectural study is seen as both an art and a science. The interdisciplinary character of architectural practice is emphasized. 3 hrs. lecture/wk.

ARCH 123   Architectural Principles* (3 Hours)
Prerequisites: ARCH 120.

This course will elaborate on the concepts first presented in introduction to architecture. General focus will be on the modern profession and architects dealing with past, present and emerging ideas as they relate to physical and social context including landscaping, buildings and cities. Unifying themes will be presented of formal architectural principles in relation to modernism and the impact on design, the site, landscaping, and site planning issues. This course is only offered in the spring semester. 3 hrs. lecture/wk.

ARCH 127   Introduction to Architectural Graphics (4 Hours)
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.

ARCH 131   Architectural Graphics* (3 Hours)
Prerequisites: ARCH 127.

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.

ARCH 140   Architectural Design* (3 Hours)
Prerequisites: ARCH 127.

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.

ARCH 210   Design History Society (3 Hours)
The nature of design, even more than the traditional fine arts, responds to and is indeed inseparable from the culture and society in which it exists. This course provides a survey of design history from the nineteenth-century Industrial Revolution to the present, with emphasis on graphic and industrial design and art and architecture, examining the history of design as it corresponds to changes in economics, politics, technology, industrialization, and other societal factors. While focusing on the events and achievements in modern Western cultures there will be selected references to pre-industrial landmarks and developments and a global scope will be examined. Design will be studied as a social practice that contributes to the production, maintenance, and representation of culture and society. The course will focus less on aesthetics than on the cultural milieu in which designers have created images and objects that give physical form to intangible ideas. 3hrs. lecture/wk.

ARCH 220   Sustainability in the Built Environment (3 Hours)
This course examines evolving issues of sustainability as they pertain to the built environment. The course will cover a broad spectrum of issues, with attention focused on historical precedent, changing social matrices, technological advancements, political and regulatory consequences, and potential future transformations. Analysis of sustainability as a concept and societal goal will be considered throughout the course as we consider issues that are both local and global. 3 hrs. lecture/wk.

ARCH 244   Architectural History Before the Modern Era (3 Hours)
This course will acquaint students with the architecture and ideas of world civilizations from prehistory to the beginning of the Industrial Revolution. Emphasis is on architecture as an integrated element of the development of commercial, technological, and ideological transferences among different regions, nascent religious groups and evolving political enterprises. The course will consider architectural styles and cultures from around the globe. 3hrs. lecture/wk.

ARCH 245   Architectural History: Modern (3 Hours)
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.

ARCH 245H   HON: Architectural History: Modern* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ARCH 250   Architectural Design Thinking* (3 Hours)
Prerequisites: ARCH 127 and ARCH 131 and ARCH 140.

This course will enrich concepts previously encountered in architecture studio courses and explore new methodologies that apply to design thinking processes. Students will encounter ill-structured, undefined design problems and learn to analyze and determine numerous ways to evaluate and illustrate the outcomes in multiple design solutions. Collaboration is encouraged between individuals and group participants using various processes to interpret, develop and visually construct final solutions to projects using computer-based design applications, free-hand drawing techniques and three-dimensional model making capabilities. 6 hrs. integrated lecture/lab/wk.

ARCH 292   Special Topics: (1-3 Hour)
This course periodically offers specialized or advanced discipline-specific content related to diverse areas of architecture not usually taught in the curriculum to interested and qualified students within the program.

Art (ART)

Courses

ART 124   Design 2D* (3 Hours)
Prerequisites or corequisites: CDTP 145.

This is an introductory study of the principles of visual perception, two-dimensional space organization and the visual elements of line, shape, texture and space. Concepts, materials and processes necessary to an understanding of two-dimensional form are explored using traditional and digital tools and techniques. Working knowledge of Adobe Illustrator is required. 6 hrs. integrated lecture/studio/wk.

ART 127   Design 3D* (3 Hours)
Prerequisites: ART 124.

This is a study of the function of three-dimensional organization in the development of visual ideas. Concepts, materials and processes necessary to an understanding of the three-dimensional relationships of space, form, form evolution and the dynamics of structure are explored. 6 hrs. integrated lecture/studio/wk.

ART 129   Design Color* (3 Hours)
Prerequisites or corequisites: CDTP 135.

This is a study of the nature of color, its physical properties and visual qualities. Basic theories, phenomena and their applications will be explored using pigment, colored paper and digital color systems. Working knowledge of Adobe Photoshop is required. 6 hrs. integrated lecture/studio/wk.

ART 129H   HON: Design Color* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ART 130   Drawing I (3 Hours) nbsp;
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. integrated lecture/studio/wk.

ART 131   Drawing II* (3 Hours)
Prerequisites: ART 130.

This course involves intermediate problems in drawing with emphasis on individual expression based on historical as well as contemporary concerns and approaches in art. Students will work from models, still-life, and conceptual presentations. A variety of media will be explored. 6 hrs. integrated lecture/studio/wk.

ART 135   Painting I (3 Hours)
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. integrated lecture/studio/wk.

ART 136   Painting II* (3 Hours)
Prerequisites: ART 135.

This course involves intermediate problems in painting with emphasis on individual expression based on historical as well as contemporary concerns and approaches in art. 6 hrs. integrated lecture/studio/wk.

ART 138   Digital Imaging for Artists I (3 Hours)
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. integrated lecture/studio/wk.

ART 142   Ceramics I (3 Hours)
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. integrated lecture/studio/wk.

ART 143   Ceramics II* (3 Hours)
Prerequisites: ART 142.

This course covers more advanced methods and studio practices in creative ceramic wheel expression and glaze formation. Emphasis is on development of a sense of thrown form and creative decoration or optional creative non-wheel ceramic form development. The course focuses on advanced ceramic form production, aesthetic issues, investigative study and practice. Clay, glaze and firing techniques are investigated in depth. The student acquires a repertoire of studio skills, a deeper awareness of ceramic history and articulated criteria of judgment. Individual interpretation and conceptual development are expected. The study of aesthetics of ceramic form is undertaken. 6 hrs. integrated lecture/studio/wk.

ART 145   Sculpture I (3 Hours)
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. integrated lecture/studio/wk.

ART 146   Sculpture II* (3 Hours)
Prerequisites: ART 145.

This continuation of ART 145 will focus on advanced methods and techniques with emphasis on materials, forms and the student's selection of an individual direction with individual material choices. 6 hrs. integrated lecture/studio/wk.

ART 148   Metal and Silversmithing I (3 Hours)
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. integrated lecture/studio/wk.

ART 148H   HON: Metal and Silversmithing I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ART 149   Metal and Silversmithing II* (3 Hours)
Prerequisites: ART 148.

Students will study advanced casting and construction techniques. Projects should show a higher degree of design and function. 6 hrs. integrated lecture/studio/wk.

ART 172   Watercolor Painting (3 Hours)
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. integrated lecture/studio/wk.

ART 231   Life Drawing I* (3 Hours)
Prerequisites: ART 130.

This course is an introduction to the basic elements of drawing for students wanting a concentration in drawing the human figure. Students will acquire basic competence in developing drawings involving the human form. 6 hrs. integrated lecture/studio/wk.

ART 232   Life Drawing II* (3 Hours)
Prerequisites: ART 231.

This course is an intermediate investigation of drawing from the human form. This class is for students wanting to concentrate on figure drawing beyond Life Drawing I. 6 hrs. integrated lecture/studio/wk.

ART 235   Studio Workshop I* (3 Hours)
Prerequisites: ART 131 or ART 136.

This course involves advanced problems in painting (or drawing) with emphasis on individual expression based on historical as well as contemporary concerns and approaches in art. 6 hrs. integrated lecture/studio/wk.

ART 236   Studio Workshop II* (3 Hours)
Prerequisites: ART 235.

This course involves advanced problems in painting (or drawing), above and beyond those experienced in Workshop I, with emphasis on individual expression. 6 hrs. integrated lecture/studio/wk.

ART 238   Digital Imaging for Artists II* (3 Hours)
Prerequisites: ART 138.

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.

ART 244   Ceramics Workshop I* (3 Hours)
Prerequisites: ART 143 and department approval.

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. integrated lecture/studio/wk.

ART 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Art History (ARTH)

Courses

ARTH 180   Art History: Ancient to Renaissance (3 Hours) nbsp;
This course will acquaint students with the arts and ideas of world civilizations from the prehistoric period to the beginning of the Italian Renaissance. The course will examine the aesthetic elements that mark the styles of major periods in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs./wk.

ARTH 180H   HON: Art History: Ancient to Renaissance* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ARTH 182   Art History: Renaissance to Modern (3 Hours) nbsp;
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.

ARTH 182H   HON: Art History: Renaissance to Modern* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ARTH 184   Art History: Twentieth Century (3 Hours)
This course introduces the student to the arts and ideas of Western Europe and the United States from the late 19th century to the present. The course will examine the aesthetic elements that mark the styles of major movements in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs. lecture/wk.

ARTH 184H   HON: Art History: Twentieth Century* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ARTH 186   Art History: Introduction to Asian Art (3 Hours)
This course will acquaint students with the arts and ideas that arose in India, China and Japan from the prehistoric to the early modern periods. The course will examine the aesthetic elements that mark the styles of major periods in two-dimensional, three-dimensional and architectural works. Particular attention will be paid to the relationship between artistic elements and their various cultural and historical contexts. 3 hrs. lecture/wk.

ARTH 186H   HON: Art History: Introduction to Asian Art* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ARTH 188   History of Photography (3 Hours)
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.

ARTH 292   Special Topics: (3 Hours)
This course periodically offers specialized or advanced discipline-specific content related to the study of Art History not normally taught in the curriculum to interested and qualified students within the program.

Astronomy (ASTR)

Courses

ASTR 120   Fundamentals of Astronomy (3 Hours) nbsp;
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 websites is available to students in this course. 3 hrs. lecture/wk.

ASTR 122   Astronomy (4 Hours) nbsp;
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 websites is available to students in this course. 3 hrs. lecture, 3 hrs. lab/wk., 5 nighttime telescope sessions are required.

ASTR 122H   HON: Astronomy* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ASTR 214   Introduction to Teaching Math and Science I* (1 Hour)
Prerequisites: MATH 171 with a grade of "C" or higher or appropriate score on the math placement test or department approval.

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. 1.25 hrs. lecture/wk.

ASTR 215   Introduction to Teaching Math and Science II* (1 Hour)
Prerequisites: ASTR 214 or BIOL 214 or CHEM 214 or GEOS 214 or MATH 214 or PHYS 214 or PSCI 214 with a grade of "C" or higher.

Students learn about the middle school environment and work on math and science inquiry-based lesson analysis, design, and assessment. Student partners will plan and teach three inquiry-based lessons in a middle school. The course emphasizes writing 5E lesson plans with a focus on the importance of using appropriate questioning and assessment strategies throughout the lesson, as well as how to analyze and modify a lesson based on personal reflections and observer feedback. By the completion of the course, students should be able to reflect on their personal suitability/interest in teaching secondary math or science, and develop a feasible pathway to a career in teaching. MATH 215, ASTR 215, BIOL 215, CHEM 215, GEOS 215, PHYS 215 and PSCI 215 are the same course; enroll in only one. 1.25 hrs. lecture/wk.

ASTR 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Automation Engineer Technology (AET)

Courses

AET 110   Industrial Maintenance* (3 Hours)
Prerequisites: Department approval.

This is an introductory course that discusses common industrial maintenance topics, such as industrial tools and equipment, mechanical drive systems and maintenance programs. The lab component to this course will expand on concepts taught in lecture by incorporating hands-on projects using common components found in industry. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

AET 120   Industrial Fluid Power* (3 Hours)
Prerequisites: Department approval.

This course examines theory, applications and operation of industrial hydraulic and pneumatic systems. The inspection, maintenance and repair of the various components are covered in this course. Interpretation of the various schematic symbols used in hydraulic and pneumatic circuit diagrams will be discussed. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

AET 140   Actuator and Sensor Systems* (3 Hours)
Prerequisites: Department approval.

This course examines types, installation and troubleshooting of industrial actuators and sensors. Contemporary control methods in process control and proportional-integral-derivative (PID) process loops are covered in this course. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

AET 160   Programmable Logic Controllers I* (3 Hours)
Prerequisites: Department approval.

This is an introductory course that examines types, installation and troubleshooting of programmable logic controllers (PLC). Hardware and programming aspects, as well as ladder logic symbols and operations necessary to develop a PLC program, are covered in this course. Students will enter, edit and test controller programs through assigned laboratory projects. 2 hrs. lecture/wk, 3 hrs. lab/wk.

AET 240   Industrial Robotics* (3 Hours)
Prerequisites: Department approval.

This course examines types, applications and troubleshooting of industrial robots and subsystems. Included in this course is the programming of industrial robotic control software. Students learn to home a robot, test teach points and design simple robot programs for different applications. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

AET 260   Programmable Logic Controllers II* (3 Hours)
Prerequisites: AET 160.

This course is a continuation of Programmable Logic Controllers I. Principle topics include sequencers, file and block transfers, analog control and proportional-integral-derivative (PID) functions. In addition, methods of networking and advanced user interface will be covered. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

Automotive Technology (AUTO)

Courses

AUTO 120   Basic Automobile Operation and Maintenance (3 Hours)
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 Hours)
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.

AUTO 122   Introduction to Automotive Glass (3 Hours)
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.

AUTO 123   Motorcycle Maintenance and Repair (2 Hours)
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.

AUTO 125   Introduction to Automotive Shop Practices (3 Hours)
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. 2 hrs. lecture, 3 hrs. lab/wk.

AUTO 129   Brakes I* (3 Hours)
Prerequisites or corequisites: AUTO 125 Corequisite: AUTO 131.

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.

AUTO 130   Diesel Fundamentals* (2 Hours)
Prerequisites or corequisites: AUTO 125.

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 Hour)
Prerequisites or corequisites: AUTO 125 Corequisite: AUTO 129.

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.

AUTO 150   Steering and Suspension I* (3 Hours)
Corequisites: AUTO 151.

Prerequisites or corequisites: AUTO 125.

In this course students will document fundamental suspension systems concerns, perform fundamental diagnostics of steering systems, perform fundamental repairs of suspension systems, determine the need for wheel alignment, perform a four wheel alignment, and perform fundamental diagnostics and repair of wheel and tire systems. 2 hrs. lecture/wk, 3 hrs. lab/wk.

AUTO 151   Alignment Practicum* (1 Hour)
Corequisites: AUTO 150.

Prerequisites or corequisites: AUTO 125.

This course will enhance the skills of diagnosing the need for wheel alignment and performing alignment of the steering and suspension systems. 3 hrs. lab/wk.

AUTO 156   Electrical I* (3 Hours)
Prerequisites or corequisites: AUTO 125.

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.

AUTO 161   Engine Performance I* (3 Hours)
Prerequisites: AUTO 156.

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.

AUTO 165   Automotive Engine Repair* (4 Hours)
Prerequisites or corequisites: AUTO 125 or department approval.

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.

AUTO 166   Electrical II* (2 Hours)
Prerequisites: AUTO 156.

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.

AUTO 201   ASE Certification Review* (1 Hour)
Prerequisites or corequisites: AUTO 208 and AUTO 209 and AUTO 221 and AUTO 250.

This course will prepare students to take any of the eight (8) basic National Institute for Automotive Service Excellence (ASE) automotive student certification tests. 1 hr. lecture/wk.

AUTO 205   Engine Performance II* (3 Hours)
Prerequisites: AUTO 161 and AUTO 165.

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.

AUTO 208   Electrical III* (3 Hours)
Prerequisites: AUTO 165 and AUTO 166.

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.

AUTO 209   Manual Drive Train and Axles* (4 Hours)
Prerequisites: AUTO 156.

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.

AUTO 210   Advanced Engine Repair* (3 Hours)
Prerequisites: AUTO 165.

Upon successful completion of this course, the student should be able to plan, design, and build a performance engine. The student will also demonstrate knowledge of the relationships between displacement, horsepower and torque; regulations governing performance engines; and current trends in engine modification. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 1 hr. lecture, 6 hrs. lab/wk. This course is taught in the fall semester.

AUTO 215   Engine Performance III* (3 Hours)
Prerequisites: AUTO 205.

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.

AUTO 221   Heating and Air Conditioning* (4 Hours)
Prerequisites: AUTO 156 and AUTO 165.

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.

AUTO 235   Hybrid Alternative Fuels Vehicles Repair Maintenance* (3 Hours)
Prerequisites or corequisites: AUTO 131 and AUTO 205 and AUTO 208 and AUTO 221 and AUTO 250 or Department Approval.

This course will cover the technology of hybrid electric, electric, alternative fuel and fuel cell vehicles. Topics covered will include changes in the vehicle engine, drive train, emissions, heating/ventilation/air conditioning (HVAC), brake and computer systems. Variations between manufacturers will be covered. Students will learn to safely diagnose, repair and service these vehicles. 2 hrs. lecture/3 hrs. instructional lab/wk.

AUTO 250   Automatic Transmissions and Transaxles* (4 Hours)
Prerequisites: AUTO 166 and AUTO 205.

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.

AUTO 271   Automotive Technology Internship* (3 Hours)
Prerequisites: Department approval required.

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 1 hr. lecture, 15 hrs. work min./wk.

AUTO 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Biology (BIOL)

Courses

BIOL 110   Nutrition for Life (2 Hours)
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 Hours)
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.

BIOL 121   Introductory Biology for Non-Majors (4 Hours) nbsp;
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.

BIOL 124   Oceanus: Essentials of Oceanography (3 Hours)
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 Hours)
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. 7 hrs. integrated lecture/lab/wk.

BIOL 125H   HON: General Botany* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 127   General Zoology (5 Hours)
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. 7 hrs. integrated lecture/lab/wk.

BIOL 130   Environmental Science (3 Hours)
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 130H   HON: Environmental Science* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 131   Environmental Science Lab* (1 Hour)
Prerequisites or corequisites: BIOL 130.

In this lab, students will learn ecological principles that are necessary for understanding and solving environmental problems. Students will sample the local environment for various types of environmental pollution, conduct lab projects and computer simulations, and attend field trips. Field trips may include a visit to a local wastewater treatment plant, a stream ecosystem and a prairie ecosystem. 2 hrs.lab/wk. plus up to three field trips. BIOL 131 students must be currently enrolled in BIOL 130 or have successfully completed BIOL 130 within the last three years.

BIOL 132   Introduction to Public Health (3 Hours)
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.

BIOL 132H   HON: Introduction to Public Health* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 134   Principles of Sustainability (3 Hours)
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 Hours) nbsp;
This course is for biology majors and students planning to take additional courses in the life sciences. Subjects covered include the nature of science; the levels of organization and emergent properties of life; basic biochemistry and bioenergetics; cell structure and function; cellular reproduction; Mendelian and molecular genetics and their relationships to the principles of evolution; basic laboratory skills; and experimentation. The lab activities allow for application of the topics presented in the lecture. 3 hrs. lecture, 2 hrs. lab/wk.

BIOL 135H   HON: Principles of Cell and Molecular Biology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 140   Human Anatomy (4 Hours) nbsp;
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. Integrated lecture and lab, 6 hrs. integrated lecture/lab/wk.

BIOL 140H   HON: Human Anatomy* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 144   Human Anatomy and Physiology* (5 Hours) nbsp;
Prerequisites: RDG 126 or College Reading Readiness.

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. 7 hrs. integrated lecture/lab/wk. The Open Anatomy Lab, 311 CLB, is available for students enrolled in Human Anatomy and Human Anatomy and Physiology classes at JCCC. Contact your professor, check the schedule outside of 311 CLB or call 913-469-8500, ext. 4124, for hours. A current student ID is required for using the Open Anatomy Lab.

BIOL 144H   HON: Human Anatomy and Physiology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 145   Human Anatomy and Physiology Dissection* (1 Hour)
Prerequisites: BIOL 144 and department approval.

Students will dissect the cat and study the relationship of structures to function in the organ systems of the cat. In this laboratory course, they will also dissect the cow kidney, heart, brain and eye. Students will compare and contrast these structures and functions with the organ systems of the human body. 2 hrs. lab/wk. Students enrolling in BIOL 145 should have completed BIOL 140 or BIOL 144 and have the approval of the assistant dean.

BIOL 150   Biology of Organisms* (5 Hours) nbsp;
Prerequisites: BIOL 135 or department approval.

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. 7 hrs. integrated lecture/lab/wk.

BIOL 155   Bioethics* (3 Hours)
Prerequisites: BIOL 121 or high school biology with department approval.

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 155H   HON: Bioethics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 205   General Genetics* (4 Hours)
Prerequisites: BIOL 135 with a grade of "C" or higher or the equivalent introductory college-level course with a grade of "C" or higher.

This introductory course emphasizes human heredity using concepts from classical and modern genetics. Themes of advancing technologies and bioethical issues are interwoven in the basic background fabric of the course. 3 hrs. lecture, 3 hrs. lab/wk.

BIOL 214   Introduction to Teaching Math and Science I* (1 Hour)
Prerequisites: MATH 171 with a grade of "C" or higher or appropriate score on the math placement test or department approval.

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. 1.25 hrs. lecture/wk.

BIOL 215   Introduction to Teaching Math and Science II* (1 Hour)
Prerequisites: ASTR 214 or BIOL 214 or CHEM 214 or GEOS 214 or MATH 214 or PHYS 214 or PSCI 214 with a grade of "C" or higher.

Students learn about the middle school environment and work on math and science inquiry-based lesson analysis, design and assessment. Student partners will plan and teach three inquiry-based lessons in a middle school. The course emphasizes writing 5E lesson plans with a focus on the importance of using appropriate questioning and assessment strategies throughout the lesson, as well as how to analyze and modify a lesson based on personal reflections and observer feedback. By the completion of the course, students should be able to reflect on their personal suitability/interest in teaching secondary math or science, and develop a feasible pathway to a career in teaching. MATH 215, ASTR 215, BIOL 215, CHEM 215, GEOS 215, PHYS 215 and PSCI 215 are the same course; enroll in only one. 1.25 hrs. lecture/wk.

BIOL 225   Human Physiology* (4 Hours) nbsp;
Prerequisites: BIOL 140 or BIOL 144.

Prerequisites or corequisites: CHEM 122 or (CHEM 124 and CHEM 125).

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. 6 hrs. integrated lecture/lab/wk.

BIOL 225H   HON: Human Physiology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 227   Human Pathophysiology* (4 Hours)
Prerequisites: BIOL 144 or BIOL 225.

This introduction to the physiology of disease covers common disorders of the body from the cellular to the systemic level. Topics include causes, symptoms, diagnostic tests and treatments of disease. 4 hrs. lecture/wk.

BIOL 227H   HON: Human Pathophysiology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 230   Microbiology* (3 Hours)
Prerequisites: CHEM 122 or CHEM 124 and CHEM 125 or one year of high school chemistry.

This is a general introductory course in microbiology. It provides a background in many areas of microbiology with an emphasis on medical aspects. The structure, physiology, antimicrobial agents, immunology and host-parasite relationship of microorganisms will be studied, with an emphasis on bacteria. 3 hrs./wk.

BIOL 230H   HON: Microbiology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 231   Microbiology Lab* (2 Hours)
Prerequisites: BIOL 231 students must be currently enrolled in BIOL 230 or have successfully completed BIOL 230 within the last three years.

Students will learn aseptic techniques and apply them in the isolation of pure cultures of bacteria. Students will also perform various staining techniques and chemical tests to identify these bacteria. The response of bacteria to changes in environmental conditions will also be examined. Various life stages of medically important parasites will also be observed. 4 hrs. lab/wk.

BIOL 235   General Nutrition* (3 Hours) nbsp;
Prerequisites: [CHEM 122 or (CHEM 124 and CHEM 125)] AND [BIOL 144 or (BIOL 140.

Prerequisites or corequisites: BIOL 225)].

This introductory course provides a basic knowledge of human nutrition. Students will learn the sources and functions of the various nutrients. They will also explore the interaction of diet, disease prevention and treatment. Through the use of a computerized nutrition program, students will analyze their diets for nutritional deficiencies and excesses. 3 hrs. lecture/wk.

BIOL 235H   HON: General Nutrition* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BIOL 240   General Pharmacology* (3 Hours)
Prerequisites: BIOL 225.

This course provides a basic understanding of the science of drugs-how they work and what they do. Students will study various drug concepts including mechanism of action, pharmacologic class, pharmaco-kinetics, pharmacodynamics and clinical implications. 3 hrs. lecture/wk. Spring.

BIOL 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Biotechnology (BIOT)

Courses

BIOT 160   Introduction to Biotechnology* (2 Hours)
Prerequisites: CHEM 122 or (CHEM 124 and CHEM 125).

Prerequisites or corequisites: BIOL 135 (All prerequisites require a grade of "C" or higher.)

This course is an introduction to biotechnology, including career exploration, history and applications of DNA/RNA technology, molecular biology, and bioethics. Topics include cloning, DNA, antibodies, gene therapy, plant biotechnology, the human genome project, DNA fingerprinting, genetic testing, diverse products made through biotechnology, and the ethical implications of this technology. The course is intended for those interested in pursuing a career in an industrial, academic, or biomedical research laboratory. 2 hrs. lecture/wk.

BIOT 165   Laboratory Safety* (1 Hour)
Prerequisites: CHEM 122 or (CHEM 124 and CHEM 125).

Prerequisites or corequisites: BIOL 135 (All prerequisites require a grade of "C" or higher.)

This course will emphasize laboratory safety and procedures. Additionally, regulations that govern the biotechnology laboratory will be discussed. Biological, chemical and radiation safety will all be handled through lectures, videotapes, demonstrations and field trips. There will also be exposure to good manufacturing practices (GMP), quality assurance and control procedures (QA/QC), and OSHA and FDA regulations. 1 hr. lecture/wk.

BIOT 230   Microbiology for Biotechnology* (5 Hours)
Prerequisites: BIOL 135 and BIOT 160 and BIOT 165 (All prerequisites require a grade of "C" or higher.)

This is an introductory course in microbiology for biotechnology students. It provides a background in many areas of microbiology with an emphasis on molecular aspects and applications for biotechnology. Industrial and food microbiology will also be examined. The structure, physiology, antimicrobial agents, immunology and host-parasite relationship of microorganisms will also be studied, with an emphasis on bacteria. Students will learn aseptic techniques and apply them in the isolation, growth and maintenance of pure cultures of bacteria. Students will also perform various molecular and genetic techniques as well as chemical tests to identify these bacteria. The growth phases of bacteria and response of bacteria to changes in environmental conditions will be examined. 3 hrs lecture, 4 hrs lab /wk.

BIOT 260   Biotechnology Methods* (5 Hours)
Prerequisites: BIOT 160 and BIOT 165.

Prerequisites or corequisites: BIOT 230 (All prerequisites require a grade of "C" or higher.)

This course is an introduction to the theory and laboratory techniques in molecular biology, protein biochemistry and immunology with an emphasis on gene expression and regulation, recombinant DNA, RNA transcription, and protein translation. Laboratory emphasis will be on molecular biological techniques utilized in modern research and industrial laboratories. Techniques include growth and maintenance of E. coli, gene cloning, DNA and protein electrophoresis protein purification and enzymatic and immunology assays. Lecture and laboratory exercises on the principles and practices of initiation, cultivation, maintenance, preservation of cell culture lines and applications will also be covered. 3 hrs lecture, 6 hrs. lab/wk.

BIOT 265   Biotechnology Internship* (4 Hours)
Prerequisites: BIOT 260 and BIOT 160 and BIOT 165 and department approval (All prerequisites require a grade of "C" or higher.)

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 hrs./wk.

Business (BUS)

Courses

BUS 120   Management Attitudes and Motivation (3 Hours)
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. 3 hrs. lecture/wk.

BUS 121   Introduction to Business (3 Hours) nbsp;
Upon successful completion of this course, the student should be able to define the free enterprise system and explain the fundamentals of business creation. Students should be able to describe the interrelationship between the different business areas of accounting, finance, information systems, management, operations and marketing. The student should also be able to explain how ethics and responsible business citizenship are applicable to each area of a business. 3 hrs. lecture/wk.

BUS 121H   HON: Introduction to Business* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 123   Personal Finance (3 Hours) nbsp;
Upon successful completion of this course, the student should be able to develop a basic financial plan, calculate principal and interest, identify the types of consumer credit, make housing decisions, fill out a tax form and determine individual insurance needs. 3 hrs. lecture/wk.

BUS 123H   HON: Personal Finance* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 140   Principles of Supervision (3 Hours)
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. lecture/wk.

BUS 140H   HON: Principles of Supervision* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 141   Principles of Management (3 Hours)
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. lecture/wk.

BUS 141H   HON: Principles of Management* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 145   Small Business Management (3 Hours)
Upon successful completion of this course, the student should be able to demonstrate an understanding of management techniques vital to small business. In addition, the student should be able to apply decision making skills in the areas of business start-up choosing the form of ownership, marketing, financial planning and managing the small business. 3 hrs. lecture/wk.

BUS 150   Business Communications* (3 Hours)
Prerequisites: ENGL 121.

Upon successful completion of this course, the student should be able to explain the role of communication in the business environment and identify the most effective methods for creating, sending and receiving messages. In addition, the student should be able to use effective oral and written communication skills in business; write and evaluate business documents, including letters, memos, and reports using the principles of correct style, organization and format; and prepare an effective oral business presentation. 3 hrs. lecture/wk.

BUS 150H   HON: Business Communication* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 175   Business Professional Skills (3 Hours)
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 Hours)
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. lecture/wk.

BUS 215H   HON: Savings and Investments* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 225   Human Relations (3 Hours)
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. lecture/wk.

BUS 225H   HON: Human Relations* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 235   Introduction to International Business (3 Hours)
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. lecture/wk.

BUS 235H   HON: Introduction to International Business* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 243   Human Resource Management (3 Hours)
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. lecture/wk.

BUS 243H   HON: Human Resource Management* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 261   Business Law I* (3 Hours)
Prerequisites: RDG 126 or College Reading Readiness.

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. lecture/wk.

BUS 261H   HON: Business Law I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 263   Business Law II* (3 Hours)
Prerequisites: BUS 261.

A continuation of Business Law I, this course will introduce the student to the principles of Uniform Commercial Code as applied to secured transactions. The law of bankruptcy, principles of agency and business organizations such as partnerships, limited partnerships, joint ventures, corporations, and sole proprietorships will be discussed. Principles of real property, personal property, bailments, estate and trusts, insurance and environmental law will be introduced. 3 hrs. lecture/wk.

BUS 263H   HON: Business Law II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

BUS 270   Business Administration Internship (1 Hour)
Upon successful completion of this course, the student will 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 business administration. A minimum of 8 or more hours a week of on-the-job training is required.

BUS 292   Special Topics:* (1-3 Hour)
Prerequisites: Department approval.

This course periodically offers specialized or advanced discipline-specific content related to diverse areas of Business, not usually taught in the curriculum.

Business Office Technology (BOT)

Courses

BOT 101   Computerized Keyboarding (1 Hour)
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 Hours)
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 Hours)
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 Hours)
Prerequisites or corequisites: BOT 105.

Upon successful completion of this course, the student should be able to use the beginning features of an operating system and word processing, spreadsheet, database management, presentation graphics, and e-mail programs to prepare and manage documents simulating legal, medical and general business office applications. Proficiency will also be attained in selecting appropriate applications to use and to integrate all of the business computer application programs to complete projects. Document formatting and proofreading will also be introduced. Hands-on, practical projects will be performed to reinforce the concepts taught. 3 hrs. lecture/wk.

BOT 110   Skillbuilding I* (1 Hour)
Prerequisites: BOT 105.

Upon successful completion of this course, the student should be able to use a diagnostic approach to develop typing speed and accuracy. Specific problems will be identified, and the student should be able to complete specialized drills and activities tailored to the student's own typing needs to improve or eliminate deficiencies. 1 hr./wk. Students attempting to take the short-term classes BOT 110 Skillbuilding I and BOT 118 Skillbuilding II in the same semester, should contact Kathy at 913-469-8500 ext 3145, and provide their student ID number and the CRN for the specific BOT 118 section.

BOT 115   Electronic Calculators (1 Hour)
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. 3 hrs. lecture/wk.

BOT 118   Skillbuilding II* (1 Hour)
Prerequisites: BOT 110.

Upon successful completion of this course, the student should further develop speed and accuracy. The student should be able to improve keyboard skills through diagnostic evaluation and by completing individualized drills and activities. 1 hr. lecture/wk. Students attempting to take the short-term classes BOT 110 Skillbuilding I and BOT 118 Skillbuilding II in the same semester, should contact Kathy at 913-469-8500 ext 3145, and provide their student ID number and the CRN for the specific BOT 118 section.

BOT 122   Medical Keyboarding* (1 Hour)
Prerequisites: BOT 105.

Upon successful completion of this course, the student should be able to develop keyboarding speed and accuracy in medical formats. The student should also be able to improve keyboard skills by completing drills and activities pertaining to the transcription of medical reports. 1 hr. lecture/wk.

BOT 125   Document Formatting* (1 Hour)
Prerequisites: BOT 155.

Upon successful completion of this course, the student should be able to type business letters with special features, memorandums, reports, tables and a variety of administrative documents. The student should also be able to use Microsoft Word to complete these activities. 1 hr./wk.

BOT 130   Office Systems Concepts (3 Hours)
Upon successful completion of this course, the student should be able to understand and apply technological factors of contemporary office systems. Implementation of office automation concepts will be examined as they relate to people, technology and organizations. These concepts will be applied to organizational and strategic planning to enhance productivity in the office. 3 hrs./wk.

BOT 141   Electronic Health Records* (3 Hours)
Prerequisites or corequisites: BOT 105 or proficiency exam or BOT 105 waiver exam.

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 Hours)
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 150   Records Management* (3 Hours)
Prerequisites: BOT 106 or experience using Microsoft Access.

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 Hours)
Prerequisites: BOT 105 and BOT 106.

Upon successful completion of this course, the student should be able to demonstrate skill in creating, saving, opening, closing, printing and editing documents. The student should be able to use beginning and intermediate features of Microsoft Word. The student should be able to demonstrate file maintenance procedures. 2 hrs. lecture/wk.

BOT 160   Legal Transcription* (3 Hours)
Prerequisites: BOT 155.

Upon successful completion of this course, the student should be able to demonstrate skill in spelling, defining, pronouncing and using legal terms in proper context. The student should also be able to use legal reference resources and transcribe legal documents from dictation using proper formatting rules. 3 hrs. lecture/wk.

BOT 170   Medical Coding and Billing* (3 Hours)
Prerequisites: HC 130.

This course is designed to give the student an overview of the medical insurance billing process. This includes becoming acquainted with ICD-9, HCPCS and CPT procedural coding systems as well as Blue Cross/Blue Shield, Medicaid, Medicare and Champus/Champva programs. Students will be given hands-on coding advice for optimal insurance reimbursement. 3 hrs. lecture/wk.

BOT 180   Business Spreadsheet Applications* (1 Hour)
Prerequisites: BOT 106.

Upon successful completion of this course, the student should be able to demonstrate competencies in using advanced formatting techniques, advanced features and advanced functions of Microsoft Excel. The following topics will be covered: working with templates, workbooks and lists; using Excel's analysis tools; managing and auditing worksheets; collaborating with workgroups; creating and editing macros; and importing and exporting data. 1 hr. lecture/wk.

BOT 185   Business Database Applications* (1 Hour)
Prerequisites: BOT 106.

Upon successful completion of this course, the student should be able to demonstrate database development skills by effectively identifying the types of projects that should be developed using Microsoft Access rather than a spreadsheet; build tables that can be related to each other in order to eliminate data entry duplication; customize forms and reports; create basic and advance queries; and define relational integrity between tables. The student should also be able to create basic and advanced queries with single and multiple tables using Boolean logic. The student should be able to identify and implement methods of troubleshooting and explain ways of getting additional help. 1 hr. lecture/wk.

BOT 205   Professional Image Development (1 Hour)
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 255   Word Processing Applications II* (2 Hours)
Prerequisites: BOT 155.

Upon successful completion of this course, the student should be able to demonstrate word processing skills using such features as macros, styles, tables of contents and indexes, graphics, master and subdocuments, and other advanced features of Microsoft Word. 2 hrs. lecture/wk.

BOT 260   Desktop Publishing for the Office* (3 Hours)
Prerequisites: BOT 155.

Upon successful completion of this course, the student should be able to use desktop publishing skills using Microsoft Publisher to produce publications such as fliers, newsletters, brochures, operating manuals, price lists and bulletins. 3 hrs. lecture/wk.

BOT 265   Computerized Office Applications* (3 Hours)
Prerequisites: BOT 106 and BOT 130 and BOT 255 (This capstone course should be taken near the end of the degree or certificate program).

Upon successful completion of this course, the student will be able to use the basic features of word processing, database, spreadsheet and presentation applications. The student will also use advanced features to complete simulated office applications and to perform multitasking projects. This course is taught in the spring semester only. 3 hrs. lecture/wk.

BOT 275   Office Internship I* (1 Hour)
Prerequisites: Admission to the business office technology program. This course should be taken near the end of the BOT degree or certificate program.

The student should be able to gain work experience in an approved training station under instructional supervision in Administrative Assistant, Medical, Legal, or Certificate Programs. The course will provide practical experience in the use of skills acquired in Business Office Technology specialty courses. The internship will require a minimum of 185 hours of job training.

BOT 280   Office Internship II* (1 Hour)
Prerequisites: BOT 275.

The student should be able to gain work experience in an approved training station under instructional supervision in Administrative Assistant, Medical, Legal, or Certificate Programs. The course will provide practical experience using skills acquired in Business Office Technology courses. The internship will require a minimum of 185 hours per semester job training.

Chemistry (CHEM)

Courses

CHEM 100   Preparation for Chemistry (3 Hours)
This course is designed for students who have never taken high school chemistry, are struggling with their current chemistry course or have anxiety about chemistry. It is intended to prepare students described above for CHEM 122 or CHEM 124; emphasis on study skills, scientific calculations, problem solving and basic chemical concepts. 3 hrs. lecture/wk.

CHEM 120   Chemistry in Society* (4 Hours) nbsp;
Prerequisites: RDG 126 or College Reading Readiness.

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.

CHEM 122   Principles of Chemistry* (5 Hours)
Prerequisites: RDG 126 or College Reading Readiness.

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.

CHEM 122H   HON: Principles of Chemistry* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

CHEM 124   General Chemistry I Lecture* (4 Hours) nbsp;
Prerequisites: RDG 126 or College Reading Readiness.

Corequisites: CHEM 125.

Prerequisites or corequisites: MATH 171 or placement test.

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 124H   HON: General Chemistry I Lecture* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

CHEM 125   General Chemistry I Lab* (1 Hour) nbsp;
Corequisites: CHEM 124.

Prerequisites or corequisites: MATH 171 or an appropriate score on a placement test.

Experiments of a qualitative and quantitative nature that support topics from General Chemistry I Lecture will be carried out. 3 hrs. lab/wk.

CHEM 131   General Chemistry II Lecture* (4 Hours) nbsp;
Prerequisites: CHEM 124 and CHEM 125.

Corequisites: CHEM 132.

Chemistry 131 is the second semester of a two-semester course in general chemistry in which the student will develop a working knowledge of some of the fundamental concepts and quantitative relationships involved in the study of chemical reactivity. Topics include solutions, chemical kinetics, chemical equilibrium, acid-base chemistry, chemical thermodynamics, electrochemistry, and nuclear chemistry. 4 hrs./wk. CHEM 131 students are required to enroll concurrently in CHEM 132.

CHEM 131H   HON: General Chemistry II Lecture* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

CHEM 132   General Chemistry II Lab* (1 Hour) nbsp;
Prerequisites: CHEM 124 and CHEM 125.

Corequisites: CHEM 131 Note: Students who withdraw from GENERAL CHEMISTRY II LECTURE must also withdraw from the corresponding laboratory GENERAL CHEMISTRY II LABORATORY. Students may not withdraw from the laboratory course GENERAL CHEMISTRY II LABORATORY without withdrawing from CHEMISTRY II LECTURE.

The laboratory consists of qualitative and quantitative experiments designed to parallel and support General Chemistry II Lecture. 3 hrs. lab/wk.

CHEM 140   Principles of Organic Biological Chemistry* (5 Hours)
Prerequisites: BIOL 121 or BIOL 135 and either CHEM 122 or (CHEM 124 and CHEM 125) or department approval.

This course covers nomenclature, theory and applications of basic organic chemistry and biochemistry in the area of carbohydrates, lipids, proteins and enzymes. The lab activities reinforce the topics presented in the lecture. 4 hrs. lecture, 3 hrs. lab/wk.

CHEM 214   Introduction to Teaching Math and Science I* (1 Hour)
Prerequisites: MATH 171 with a grade of "C" or higher OR appropriate score on the math placement test OR department approval.

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. 1.25 hrs. lecture/wk.

CHEM 215   Introduction to Teaching Math and Science II* (1 Hour)
Prerequisites: ASTR 214 or BIOL 214 or CHEM 214 or GEOS 214 or MATH 214 or PHYS 214 or PSCI 214 with a grade of "C" or higher.

Students learn about the middle school environment and work on math and science inquiry-based lesson analysis, design and assessment. Student partners will plan and teach three inquiry-based lessons in a middle school. The course emphasizes writing 5E lesson plans with a focus on the importance of using appropriate questioning and assessment strategies throughout the lesson, as well as how to analyze and modify a lesson based on personal reflections and observer feedback. By the completion of the course, students should be able to reflect on their personal suitability/interest in teaching secondary math or science, and develop a feasible pathway to a career in teaching. MATH 215, ASTR 215, BIOL 215, CHEM 215, GEOS 215, PHYS 215 and PSCI 215 are the same course; enroll in only one. 1.25 hrs. lecture/wk.

CHEM 220   Organic Chemistry I* (5 Hours)
Prerequisites: CHEM 131 and CHEM 132.

Organic Chemistry I is an introduction to the theories and principles of the chemistry carbon compounds. The student will develop an understanding of organic chemistry, which will be useful in the studies of chemistry and related fields such as medicine, engineering and pharmacy. The laboratory is supportive in nature, with a strong emphasis on developing laboratory techniques. Representative compounds will be prepared and used to introduce the student to instrumental analysis. 3 hrs. lecture, 6 hrs. lab/wk.

CHEM 220H   HON: Organic Chemistry I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

CHEM 221   Organic Chemistry II* (5 Hours)
Prerequisites: CHEM 220.

Organic Chemistry II is a continuation of Organic Chemistry I, the nomenclature, principles and theories of organic chemistry, with emphasis on electronic theories and reaction mechanisms. Laboratory is supportive in nature with emphasis on developing laboratory techniques and preparation of representative compounds. Organic Chemistry II completes the study of organic chemistry designed to prepare the student for continued work in chemistry and related fields. 3 hrs. lecture, 6 hrs. lab/wk.

CHEM 221H   HON: Organic Chemistry II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

CHEM 250   Biochemistry* (4 Hours)
Prerequisites: CHEM 131 and CHEM 132 and CHEM 140 or CHEM 220.

This course is an introduction to the major topics in biochemistry. Topics include the major classes of biological molecules, such as proteins, lipids and nucleic acid; an overview of the major metabolic pathways; and developments and topics relating to molecular biology. 4 hrs. lecture/wk.

CHEM 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Civil Engineering Technology (CET)

Courses

CET 105   Construction Methods (3 Hours)
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. lecture/wk.

CET 123   Building Codes (3 Hours)
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 Hours)
Prerequisites or corequisites: CET 105 or equivalent.

Upon successful completion of this course, the student will be able to describe the phases of a project, identify the bidding requirements, explain contractual relationships between parties, categorize the drawings, write specifications, list warranties and explain contract modifications. 2 hrs. lecture/ wk.

CET 129   Construction Management (3 Hours)
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 140   Civil Engineering Materials* (3 Hours)
Prerequisites or corequisites: MATH 116 or higher.

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 160   Green Building Fundamentals (3 Hours)
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 Hours)
Prerequisites: CET 105.

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 225   Construction Documents* (2 Hours)
Prerequisites: CET 125.

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 Hours)
Prerequisites: CET 105 and CET 125 or department approval.

Prerequisites or corequisites: DRAF 129 or department approval.

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 Hours)
Prerequisites: CET 129 and MATH 116 or higher.

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 271   Construction Management Internship I* (3 Hours)
Prerequisites: Department approval.

This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the construction industry. An average of 15 hours per week for the semester of on-the-job training is required.

CET 272   Construction Management Internship II* (3 Hours)
Prerequisites: Department approval.

This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the construction industry. An average of 15 hours per week for the semester of on-the-job training is required.

Computer Desktop Publishing (CDTP)

Courses

CDTP 135   Desktop Photo Manipulation I: Photoshop (1 Hour)
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.

CDTP 140   Desktop Publishing I: InDesign (1 Hour)
In this career-related course, students will create page layout documents using a variety of basic techniques on either the Macintosh or PC computer platform. Students will produce text material with complex tabs and indents and style attributes. Upon successful completion of the course, students will also be able to group and distribute multiple elements and demonstrate a basic proficiency with drawing tools, multiple document work, drop caps, text rotation, locking items and threading text blocks. 1 hr. lecture/wk.

CDTP 145   Desktop Illustration I: Illustrator (1 Hour)
In this career-related course, students will create basic computer-generated illustrations using a variety of techniques on either the Macintosh or Windows PC computer platform. Students will draw simple paths and shapes, create layers, import graphics and add typographic elements in rows and columns with runarounds, baseline shifts and conversion to outlines. 1 hr. lecture/wk.

CDTP 155   Desktop Photo Manipulation II: Photoshop* (1 Hour)
Prerequisites: CDTP 135.

In this career-related short course, students will manipulate digital photographs and images using a variety of introductory to intermediate techniques on either the Macintosh or PC computer platform. Students will apply techniques to edit masks and channels, process and enhance multiple image file formats, group and apply adjustments to layers, automate common tasks, create composite images, learn and apply intermediate scanning techniques, and apply multiple creative and adjustment filters on a variety of digital photographs and images. 1 hr. lecture/wk.

CDTP 160   Desktop Publishing II: InDesign* (1 Hour)
Prerequisites: CDTP 140.

In this career-related course, students will create intermediate-level page layout documents using a variety of techniques on either the Macintosh or PC computer platform. Students will learn how to work with type styles, threads, columns, special characters, hanging indents, vertical spacing and tables as well as exploring PDF files. Students will also be able to master several aspects of working with graphic images: placing images, linking, clipping paths, libraries, grids, Bezier drawing, compound paths and reflections. Finally, students will work with advanced framing techniques to nest frames within shapes. 1 hr. lecture/wk.

CDTP 165   Desktop Illustration II: Illustrator* (1 Hour)
Prerequisites: CDTP 145.

In this career-related course, students will create intermediate-level computer-generated illustrations using a variety of techniques on either the Macintosh or PC computer platform. Students will trace an object, create complex gradients with custom blends, create complex objects receding toward a vanishing point, and create an orthogonal projection to simulate depth. 1 hr. lecture /wk.

CDTP 168   Desktop Publishing III: InDesign* (1 Hour)
Prerequisites: CDTP 160.

In this career-related course, students will create advanced-level page layout documents using a variety of techniques on either the Macintosh or PC computer platform. Students will learn how to work with advanced color specifications, transparency blending modes, long document organization, and brochure layout production art. 1 hr. lecture/wk.

CDTP 175   Desktop Photo Manipulation III: Photoshop* (1 Hour)
Prerequisites: CDTP 155.

In this career-related short course, students will manipulate digital photographs and images using a variety of beginning, intermediate and advanced techniques on either the Macintosh or PC computer platform. Students will apply techniques to create and design typographic elements, use vector drawing techniques, prepare images for print, optimize images for web output, and use a digital photo preparation workflow on a variety of digital photographs and images, including scanned images. 1 hr. lecture/wk.

CDTP 185   Desktop Illustration III: Illustrator* (1 Hour)
Prerequisites: CDTP 165.

In this career-related course, students will create advanced computer-generated illustrations using a variety of techniques on either the Macintosh or PC computer platform. Students will create charts, autotrace scanned images, fill objects with various pen-and-ink filter effects and create an image map for the Web. 1 hr. lecture/wk.

CDTP 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Computer Information Systems (CIS)

Courses

CIS 124   Introduction to Computer Concepts and Applications (3 Hours) nbsp;
In this introductory, non-technical computer course, students will learn through hands-on assignments to use current computer technologies to enhance personal and professional productivity. This includes current and emerging computer and Internet technologies, as well as desktop and web-based business applications. Students will learn strategies for evaluating the validity, legitimacy, and productivity potential of future technologies as they emerge, as well as how to assess the privacy risks associated with each. 3 hrs. lecture/wk.

CIS 142   Beginning Programming using Python (4 Hours)
In this introductory course, students will create computer applications that perform tasks and solve problems. Students will utilize fundamental logic, problem-solving techniques and key programming concepts to design, develop and test modular applications written in the Python programming language. 3 hrs. lecture, 2 hrs. open lab/wk.

CIS 162   Database Programming* (4 Hours)
Prerequisites: CS 134.

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. open lab/wk.

CIS 201   Introduction to Information Systems* (3 Hours)
Prerequisites: ACCT 121.

This course introduces students to contemporary information systems and demonstrates how these systems are used throughout global organizations. Students will study key information system components and learn how these components are best leveraged by businesses. This course also provides an introduction to systems and development concepts, technology acquisition and various types of emerging or prevalent application software. 3 hrs. lecture/wk.

CIS 201H   HON: Introduction to Information Systems* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

CIS 204   UNIX Scripting and Utilities* (3 Hours)
Prerequisites: CS 134 or CIS 142.

This course will cover the concepts and principles related to scripting for the multiuser, multitasking 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 Hours)
Prerequisites: CS 205.

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 240   Advanced Topics in Java* (4 Hours)
Prerequisites: CS 205.

At the completion of this course, the student should be able to create Java applications for implementation on the Internet and the personal computer. The student will complete projects using Java's built-in features. The course will include generics, input and output streams, serialization, exception handling, multithreading, client-server applications and graphical user interfaces. 3 hrs. lecture, 2 hrs. open lab/wk.

CIS 242   Introduction to System Design and Analysis* (3 Hours)
Prerequisites: CIS 138 or CS 200 or CS 201 or CS 205.

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 260   Database Management* (4 Hours)
Prerequisites: CS 200 or CS 201 or CS 205.

At the completion of this course, students should be able to understand the characteristics and objectives of database management systems (DBMS). Topics include database environments, data modeling using the entity-relational model, normalization, logical and physical design, the Structured Query Language (SQL), data quality, database administration and related topics. Students will use a relational DBMS , employ associated tools and write programs to manipulate tables. 3 hrs. lecture, 2 hrs. open lab/wk.

CIS 264   Application Development and Programming* (4 Hours)
Prerequisites: CIS 242 and CIS 260 and CS 235 or CIS 240 or CS 236 or CS 255.

This course helps students develop a significant software project while combining previously learned software development skills with contemporary technologies. Students should work within a team to communicate, plan and implement a software application. Proper interviewing and job searching techniques are also explored. 4 hrs. lecture/wk.

CIS 270   Information Systems Internship* (3 Hours)
Prerequisites: Department appoval and any of the following courses: CS 235 or CS 236 or CS 250 or CS 255 or CIS 240.

Students will work in an approved training situation under instructional supervision. The internship is designed to give students the opportunity to use skills learned in computer science and information systems courses. Fifteen hours on-the-job training per week will be the usual workload for the student. To be eligible, students must have recently completed a course in the department.

CIS 275   Web-Enabled Database Programming* (4 Hours)
Prerequisites: CS 200 or CS 201 or CS 205.

At the completion of this course, the student should be able to create dynamic Web pages containing information accessed from a database. The student will complete projects using Web technologies that interface with a database. The course will include graphics, graphical user interfaces, exception handling and event-driven programming. 3 hrs. lecture, 2 hrs. open lab/wk.

CIS 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

CIS 292   Special Topics:* (1-4 Hour)
Prerequisites: Department approval.

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.

Computer Personal Computer App (CPCA)

Courses

CPCA 105   Introduction to Personal Computers: Windows (1 Hour)
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.

CPCA 106   Introduction to Personal Computers: Macintosh (1 Hour)
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.

CPCA 108   Word Processing I: MS Word* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CIS 124 or CPCA 128 or appropriate score on a waiver test.

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.

CPCA 109   Google Apps* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CIS 124 or CPCA 128 or appropriate score on a waiver test.

This course provides an introduction to the concepts and real-world applications of Google Apps services and applications. Students will explore the most popular Google Apps on the market today, including Google Email, Google Calendar, Google Talk, Google Docs, Google Sites and Google Start Page. Hands-on, practical projects will be performed to reinforce the concepts taught. 1hr. lecture/wk.

CPCA 110   Spreadsheets I: MS Excel* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CIS 124 or CPCA 128 or appropriate score on a waiver test.

Students will learn concepts and uses of spreadsheet software on the personal computer. Business decision-making worksheet models will be created and modified by entering labels, functions and formulas. Various formatting techniques will be applied to enhance the appearance of printed worksheets. Students will also learn to display the worksheet data graphically with the charting capabilities of the software. 1 hr. lecture/wk.

CPCA 111   Spreadsheets II: MS Excel* (1 Hour)
Prerequisites: CPCA 110 or CPCA 128.

This course is a continuation of CPCA 110, Spreadsheets on the Microcomputer I, and will provide the student with intermediate level of spreadsheet concepts. Using typical business scenarios, the student will perform manual and automated "what-if" analyses, manage data in worksheets with tables and database functions, and use multiple worksheets to build consolidated statements. Basic macros will be introduced. 1 hr. lecture/wk.

CPCA 114   Databases I: MS Access* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or CS 134 or an appropriate score on a waiver test.

This course provides an introduction to the concepts and real-world applications of microcomputer relational database software. Foundational database competencies, including building tables, defining fields, relating tables, entering and editing data, filtering and sorting will be covered. Students will query the database to select, calculate and summarize information. Students will build and customize forms and reports. 1 hr. lecture/wk.

CPCA 115   Databases II: MS Access* (2 Hours)
Prerequisites or corequisites: CPCA 114.

Upon completion of this course, the student should be able to design and define a relational database, create custom forms and reports for data entry, and build supporting queries. The student should be able to transfer data into and out of the database from various file formats, and manipulate data with introductory macro and programming skills. 2 hrs. lecture/wk.

CPCA 117   Databases III: MS Access* (1 Hour)
Prerequisites or corequisites: CPCA 115.

Upon successful completion of this course, the student should be able to analyze an existing database that is not working properly and apply techniques to convert it into an effective relational database. A case study emphasis will cover different database design and documentation issues. Topics covered include relational database design, using action queries to normalize data and building a user interface. Students will also build complex forms and reports incorporating Visual Basic for Applications (VBA) programming code. 1 hr. lecture /wk.

CPCA 118   Groupware: Outlook* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on a waiver test.

This course provides an introduction to the concepts and applications of today's robust email systems. Students will use tha application to compose, send and receive e-mail; post and organize discussion messages; manage calendars, appointments, tasks, to-do lists; use contact management features; and work with instant messaging. 1 hr. lecture/wk.

CPCA 120   Computer User Support Skills* (3 Hours)
Prerequisites or corequisites: CPCA 105 or an appropriate score on a waiver test.

Upon successful completion of this course, students should understand key information and skills for user support professionals, including troubleshooting and problem solving, successful verbal and written communication with users, determining a client's specific needs and training end users. 3 hr. lecture/wk.

CPCA 121   Introduction to Project Management* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on a waiver test.

Upon completion of this course, the student should be able to effectively manage projects using project management software. Students will learn about project management goals and terminology, create a project schedule and use project management methodologies and tools such as the Gantt chart, critical path method (CPM) and program evaluation review technique (PERT) chart to update a project and communicate project progress to others. Students will use other project management techniques such as applying resources, leveling overallocations, evaluating constraints and analyzing planned versus projected schedule and budget variables. 1 hr. lecture/wk.

CPCA 122   Assistive Technology (1 Hour)
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.

CPCA 123   E-Presentation: MS PowerPoint* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CIS 124 or CPCA 128 or an appropriate score on a waiver test.

Upon completion of this course, students should be able to organize and produce an effective on-computer or slide-generated presentation, complete with printed speaker notes and handouts plus overhead transparencies, using the basic features of a presentation graphics program. Students will use master pages, template files, text formatting, color schemes, various drawing tools, the automated outline feature and animation dissolve sequence and incorporate photographs. 1 hr. lecture/wk.

CPCA 125   Word Processing II: MS Word* (1 Hour)
Prerequisites: CPCA 108.

This is a continuation of CPCA 108, Word Processing on Micros I. After completing this course students should be able to use advanced concepts and applications of word processing software. The applications will include 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.

CPCA 128   PC Applications: MS Office (3 Hours)
Upon successful completion of this course, students will demonstrate an in-depth proficiency with word processing, spreadsheet, database and presentation graphics applications. Students will use a current operating system to manage windows and applications, and create and organize files and folders. Students will conduct research on the Internet and apply information in secure documents using ethical and social standards of conduct. Hands-on, practical projects will be performed to reinforce the concepts taught. 3 hrs. lecture/wk.

CPCA 134   Managing Your Macintosh* (1 Hour)
Prerequisites: CPCA 106 or an appropriate score on an assessment test. Course offered in spring only.

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.

CPCA 138   Windows for Microcomputers* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on an assessment test.

At the completion of this course, the student will be able to discuss the components of the Windows desktop, use the Windows Help system, create and organize a folder system on a disk, perform file management commands, customize the Windows desktop environment, use the Search tool to locate files and folders, and perform file backup and disk maintenance procedures. The student will also be able to use performance monitoring tools, add hardware and software to the system, and use basic MS DOS directory and file management commands. 1 hr. lecture/wk.

CPCA 139   UNIX* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or assessment test.

This course will introduce students to the major commands of the Unix operating system. E-mail, the VI editor and Telnet will be covered. Basic file and disk management projects will be completed in this course. 1 hr. lecture/wk.

CPCA 141   Internet I* (1 Hour)
Prerequisites: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or appropriate score on an assessment test.

This course will introduce the student to 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.

CPCA 151   Internet II* (1 Hour)
Prerequisites: CPCA 141 or an appropriate score on an assessment test.

This course will cover the commands and techniques required to effectively use various Internet application tools. The student will also use Windows and non-Windows applications to locate information, download and upload files, and create a Web page. Additionally the course will cover basic LINUX commands and publish a Web page to a Web server. 1 hr. lecture/wk.

CPCA 161   Introduction to Web Pages using HTML* (1 Hour)
Prerequisites: CPCA 151 or an appropriate score on an assessment test.

This course will cover the commands and techniques required to create and publish World Wide Web pages using HyperText Markup Language. Topics covered will include basic text layout, background colors, formatting, ordered and unordered lists, tables, frames that include graphic images in a page and linking to other Web pages. 1 hr. lecture/wk.

CPCA 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

CPCA 292   Special Topics:* (1-3 Hour)
Prerequisites: Departmental approval.

This course periodically presents specialized topics in Personal Computer Applications that are not available in the regularly offered curriculum. Special Topics may be repeated for credit, but only on different topics.

Computer Science (CS)

Courses

CS 134   Programming Fundamentals (4 Hours)
In this introductory course, students will create interactive computer applications that perform tasks and solve problems. Students will design, develop and test object-oriented programs that utilize fundamental logic, problem-solving techniques and key programming concepts. 3 hrs. lecture, 2 hrs. open lab /wk.

CS 200   Concepts of Programming Algorithms Using C++* (4 Hours)
Prerequisites: CS 134 (with a grade of "B" or higher) or CIS 142 (with a grade of "B" or higher) or CS 201 or CS 205 or MATH 241 or an appropriate score on department waiver test or department approval for prior work-related experience.

This course emphasizes problem solving using a high level programming language and the software development process. Algorithm design and development, programming style, documentation, testing and debugging will be presented. Standard algorithms and data structures will be introduced. Data abstraction and an introduction to object-oriented programming will be studied and used to implement algorithms. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CS 200H   HON: Concepts of Programming Algorithms Using C++* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

CS 201   Concepts of Programming Algorithms using C#* (4 Hours)
Prerequisites: CS 134 (with a grade of "B" or higher) or CIS 142 (with a grade of "B" or higher) or CS 200 or CS 205 or MATH 241 or an appropriate score on department waiver test or department approval for prior work-related experience.

This course emphasizes problem-solving using a high level programming language and the software development process. Algorithm design and development, programming style, documentation, testing and debugging will be presented. Standard algorithms and data structures will be introduced. Data abstraction and an introduction to object-oriented programming will be studied and used to implement algorithms. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CS 205   Concepts of Programming Algorithms using Java* (4 Hours)
Prerequisites: CS 134 (with a grade of "B" or higher) or CIS 142 with a grade of "B" or higher) or CS 200 or CS 201 or MATH 241 or an appropriate score on department waiver test or department approval for prior work-related experience.

This course emphasizes problem-solving using a high level programming language and the object-oriented software development process. Algorithm design and development, classes and inheritance, programming style, documentation, testing and debugging will be presented. Standard algorithms and data structures will be introduced. Data abstraction and object-oriented programming will be studied and used to implement algorithms. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CS 210   Discrete Structures I* (3 Hours)
Prerequisites: MATH 171 or both MATH 116 and CS 134 or appropriate math assessment scores.

Upon successful completion of this course, the student should be able to use fundamental discrete mathematics as it relates to computers and computer applications. The student will be exposed to a variety of discrete mathematical topics. The course will include fundamental mathematical principles, combinatorial analysis, mathematical reasoning, graphs and trees, and Boolean logic circuits. 3 hrs. lecture/wk.

CS 210H   HON: Discrete Structures I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

CS 211   Discrete Structures II* (3 Hours)
Prerequisites: CS 210.

Upon successful completion of this course, the student should be able to use fundamental discrete mathematics as it relates to computers and computer applications. The student will experiment with a variety of discrete mathematical topics. The course will include fundamental mathematical principles, combinatorial analysis, mathematical reasoning, graphs and trees, and Boolean logic circuits. 3 hrs. lecture/wk.

CS 211H   HON: Discrete Structures II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

CS 235   Object-Oriented Programming Using C++* (4 Hours)
Prerequisites: CS 200 or CS 201 or CS 205.

This course emphasizes programming methodology and problem solving using the object-oriented paradigm. Students will develop software applications using the object-oriented concepts of data abstraction, encapsulation, inheritance, and polymorphism. Students will apply the C++ techniques of dynamic memory, pointers, built-in classes, function and operator overloading, exception handling, recursion and templates. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CS 236   Object-Oriented Programming Using C#* (4 Hours)
Prerequisites: CS 201.

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. open lab/wk.

CS 250   Basic Data Structures using C++* (4 Hours)
Prerequisites: CS 235 OR (CS 200 and CS 210 or CS 236 or CS 255 or CIS 240 or MATH 242).

This course continues developing problem solving techniques by focusing on object-oriented styles using C++ abstract data types. Basic data structures such as queues, stacks, trees, dictionaries, their associated operations, and their array and pointer implementations will be studied. Topics also include recursion, templates, fundamental algorithm analysis, searching, sorting, hashing, object-oriented concepts and large program organization. Students will write programs using the concepts covered in the lecture. 3 hrs. lecture, 2 hrs. lab by arrangement/wk.

CS 255   Basic Data Structures Using Java* (4 Hours)
Prerequisites: CS 205 or CS 236 or CIS 240.

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, 2 hrs. lab by arrangement/wk.

Cosmetology (CO)

Courses

CO 100   Esthetics* (16 Hours)
Prerequisites: ENGL 121 (with a grade of "C" or higher) or RDG 126 (with a grade of "C" or higher) or an appropriate reading placement test score and department approval.

Corequisites: CO 101.

This course provides class instruction in skin care. Topics include sanitation, skin sciences, skin treatments, business practices and state law. This class meets 252 lecture hours of the 1,000 contact hours required by the Kansas State Board of Cosmetology.

CO 101   Esthetics Clinical* (1 Hour)
Corequisites: CO 100.

This course provides skill instruction and practical application of skin care in a clinical setting. Topics include sanitation, skin sciences, skin treatments, business practices and state law. This class meets 32 clinical hours.

CO 102   Intermediate Esthetics* (9 Hours)
Prerequisites: CO 100 with a grade of "C" or higher and CO 101 with a grade of "C" or higher.

Corequisites: CO 103.

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 136 lecture hours.

CO 103   Intermediate Esthetics Clinical* (5 Hours)
Prerequisites: CO 100 with a grade of "C" or higher and CO 101 with a grade of "C" or higher.

Corequisites: CO 102.

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 207 of the 1,000 contact hours required by the Kansas State Board of Cosmetology.

CO 104   Esthetics Essentials* (3 Hours)
Prerequisites: CO 102 with a grade of "C" or higher and CO 103 with a grade of "C" or higher.

Corequisites: CO 105.

This course provides class instruction in skin care. Topics include sanitation, skin sciences, waxing, skin treatments, body treatments, advanced therapies, business practices and state law. This class meets 48 of the 1,000 contact hours required by the Kansas State Board of Cosmetology.

CO 105   Esthetics Essentials Clinical* (2 Hours)
Prerequisites: CO 102 with a grade of "C" or higher and CO 103 with a grade of "C" or higher.

This course provides skill instruction and practical application of skin care in a clinical setting. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, body treatments, advanced therapies, business practices and state law. This class meets 73 of the 1,000 contact hours required by the Kansas State Board of Cosmetology.

CO 106   Advanced Esthetics* (7 Hours)
Prerequisites: CO 104 with a grade of "C" or higher and CO 105 with a grade of "C" or higher.

Corequisites: CO 107.

This course provides class instruction in skin care. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, body treatments, advanced therapies, preparation for state examinations, business practices and state law. This class meets 104 of the 1,000 contact hours required by the Kansas State Board of Cosmetology.

CO 107   Advanced Esthetics Clinical* (3 Hours)
Prerequisites: CO 104 with a grade of "C" or higher and CO 105 with a grade of "C" or higher.

Corequisites: CO 106.

This course provides skill instruction and practical application of skin care in a clinical setting. Topics include sanitation, skin sciences, waxing, skin treatments, makeup, and preparation for state examinations, business practices and state law. This class meets 148 of the 1,000 contact hours required by the Kansas State Board of Cosmetology.

CO 109   Nail Technology* (16 Hours)
Prerequisites: ENGL 121 (with a grade of "C" or higher) or RDG 126 (with a grade of "C" or higher) or an appropriate reading placement test score and department approval.

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 Manicurist examination. This class meets for 130 Lecture hours, 60 Lab hours and 160 Clinic hours to meet the 350 contact hours required by the Kansas Board of Cosmetology. For enrollment information, call 913-469-8500, ext. 2390.

CO 110   Cosmetology I* (12 Hours)
Prerequisites: ENGL 121 (with a grade of "C" or higher) or RDG 126 (with a grade of "C" or higher) or an appropriate reading placement test score and department approval.

Corequisites: CO 111.

This course is an introduction to the cosmetology industry. Coursework includes the history of cosmetology, professional image, effective communication skills, salon ecology including microbiology and infection control, trichology, hair design composition, physical and chemical phases of chemical texturizing services, and the law of color. The course also includes basic instruction and practice in shampooing, sculpting, special occasion styling, chemical texturizing and hair coloring. Total contact hours: 400.

CO 111   Cosmetology II* (7 Hours)
Prerequisites: ENGL 121 (with a grade of "C" or higher) or RDG 126 (with a grade of "C" or higher) or an appropriate reading placement test score and department approval.

Corequisites: CO 110.

This course is an introduction to basic skin care and nail technology theory. Coursework focuses on salon ecology including microbiology and infection control, nail structure, nail diseases and disorders, the function and composition of skin, skin diseases and disorders, hair removal service essentials, and personal and public hygiene. The course also includes basic instruction and practice in manicuring and pedicure procedures, nail enhancement procedures, skin care and facials, hair removal, and facial makeup and artistry. Total contact hours: 240.

CO 112   Cosmetology III* (10 Hours)
Prerequisites: CO 110 and CO 111 (both with a grade of "C" or higher).

Corequisites: CO 113.

This course provides continuing skill instruction, in the classroom and salon, in shampooing, chemical processes, hair sculpture, special occasion styling and hair design. Coursework includes applied anatomy and physiology, chemistry, electricity, the study of wigs and hair additions, the study of interpersonal relationships, professional communication, career planning, self-management and guest relations. This course includes performing services for clients and models, and maintaining client records in the salon setting. Total contact hours: 340. For enrollment and tuition information, call 913-469-8500, ext.2390.

CO 113   Cosmetology IV* (9 Hours)
Prerequisites: CO 110 and CO 111 (both with a grade of "C" or higher).

Corequisites: CO 112.

This course provides continuing skill instruction, in the classroom and salon, in manicuring and pedicure procedures, nail enhancement procedures, facials, hair removal, and facial makeup and artistry. Coursework includes the study of interpersonal relationships, professional communication, guest relations and the Kansas Board of Cosmetology Laws and Regulations. This course includes performing services for clients and models, and maintaining client records in the salon setting. This course also includes completion of "Mini-Board" mock state board practical and written exams, on all the previously taught courses to prepare students for licensing. Total contact hours: 300. For enrollment and tuition information, call 913-469-8500, ext.2390.

CO 114   Cosmetology Business* (7 Hours)
Prerequisites: CO 110 with a grade of "C" or higher.

In this course, students will explore how to begin the process of owning a salon. Coursework is focused on industry networking, professional goal setting, the components of salon ownership, writing a business plan, resume and interviewing skills, salon retailing, and a refresher for state laws and regulations. This course propels students further into the professional salon environment. Students are instructed to practice and perfect their skills in a salon setting, performing all cosmetology services for clients and models, as well as scheduling appointments and practicing salon management. A successful student will have acquired basic skills to fill a position in the field of cosmetology. Total 220 contact hours. For enrollment and tuition information, call 913-469-8500, ext. 2390.

CO 212   Cosmetology Instructor Training* (9 Hours)
Prerequisites: Current Kansas Cosmetology, Esthetics or Nail Technology License and a minimum of one year of verified practice in trained area and department approval.

This 300 contact hour course is designed to meet the educational requirements for licensure by Kansas Board of Cosmetology for instructors in the cosmetology sciences. Students will attend 56 hours of lecture and participate in 244 hours of observation, clinic supervision and classroom teaching. Topics covered include instructor characteristics, student motivation, methods and evaluation. For enrollment information call 913-469-8500 ext. 2390. Enrollment in this course requires Kansas state licensure in Cosmetology, Esthetics or Nail Technology and a minimum of one year verified practice in trained area.

Data Science (DS)

Courses

DS 210   Introduction to Data Science (3 Hours)
In this course students receive an introduction to the main tools and ideas in the data scientist's toolbox. The course gives an overview of the data, questions, techniques and tools that data analysts and data scientists work with. This course provides a conceptual introduction to the ideas behind turning data into actionable knowledge and tools that will be used to analyze this data. The course will cover collecting, cleaning and sharing data. Additionally, this course will cover how to communicate results through visualizations. 3 hrs. lecture/wk.

DS 220   Data Visualization (3 Hours)
This course introduces students to key design principles and techniques for interactively visualizing data. In addition to understanding how visual representations are used in the analysis and understanding of complex data, students will acquire data visualization skills including designing effective visualizations and creating interactive visualizations using spreadsheets. 3 hrs. lecture/wk.

DS 230   SQL for Data Analysis (3 Hours)
In this course students will focus on how to apply the Structured Query Language (SQL) to data analysis tasks. Spreadsheets will be used for the visualization of data. Additionally, basic statistics will be covered. All data will be extracted from relational tables. 3 hrs. lecture/wk.

DS 240   Introduction to Statistical Programming (3 Hours)
Students in this course will use a statistical programming language to perform effective data analysis. Students will acquire programming skills including reading data, accessing statistical packages, writing functions, debugging, profiling code, organizing code and commenting code. 3 hrs. lecture/wk.

DS 250   Data Analysis (3 Hours)
In this course the student will manipulate, process, clean, analyze and visualize data in a programming language. Real world datasets will be utilized. Structured data will be emphasized. 3 hrs. lecture/wk.

DS 260   Data Mining (3 Hours)
This course will provide students with an understanding of fundamental data mining methodologies and the ability to formulate and solve problems with these methodologies. Particular attention will be paid to the process of extracting data, analyzing it from many dimensions or perspectives, then producing a summary of the information in a useful form that identifies relationships within the data. The lectures will be complemented with hands-on experience with data mining software to allow development of execution skills. 3 hrs. lecture/wk.

DS 270   Introduction to Machine Learning (3 Hours)
This introductory course gives an overview of machine learning concepts, techniques and algorithms. Supervised and unsupervised machine learning will be covered. Machine learning is an integral part of data analytics, which deals with developing data-driven insights for better designs and decisions, and gives computers the ability to learn without being explicitly programmed. 3 hrs. lecture/wk.

DS 280   Big Data Architecture (3 Hours)
This course covers emerging big data architectures that deal with large amounts of unstructured and semi-structured data. This course is designed for developers who need to create applications to analyze big data stored in distributed file systems. Topics include file architecture, data retrieval, performance and data analysis. 3 hrs. lecture/wk.

Dental Hygiene (DHYG)

Courses

DHYG 121   Clinical Dental Hygiene I: Pre-Clinic* (5 Hours)
Prerequisites: Admission to the Dental Hygiene Program and BIOL 140 and BIOL 230 and BIOL 231 and CHEM 122 and ENGL 121 and PSYC 130.

Corequisites: DHYG 125 and DHYG 135 and DHYG 138.

Prerequisites or corequisites: SOC 122 (All BIOL, CHEM, and DHYG courses must be completed with a grade of "C" or higher.)

This course will include 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, client assessment, preventive treatment, transmissible diseases, principles of infection control and prevention. 2 hrs. lecture, 14 hrs. lab/wk.

DHYG 125   Developmental Dentistry* (2 Hours)
Prerequisites: Admission to the Dental Hygiene Program and BIOL 140 and BIOL 230 and BIOL 231 and CHEM 122 and ENGL 121 and PSYC 130.

Corequisites: DHYG 121 and DHYG 135 and DHYG 138.

Prerequisites or corequisites: SOC 122 (All BIOL, CHEM, and DHYG courses must be completed with a grade of "C" or higher.)

This course will include a study of embryology, oral histology, developmental disturbances of the oral cavity and related structures, dental morphology and occlusion. 2 hrs. lecture/wk.

DHYG 135   Dental Materials* (2 Hours)
Prerequisites: Admission to the Dental Hygiene Program and BIOL 140 and BIOL 230 and BIOL 231 and CHEM 122 and ENGL 121 and PSYC 130.

Corequisites: DHYG 121 and DHYG 125 and DHYG 138.

Prerequisites or corequisites: SOC 122 (All BIOL, CHEM, and DHYG courses must be completed with a grade of "C" or higher.)

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 Hours)
Prerequisites: Admission to the Dental Hygiene Program and BIOL 140 and BIOL 230 and BIOL 231 and CHEM 122 and ENGL 121 and PSYC 130.

Corequisites: DHYG 121 and DHYG 125 and DHYG 135.

Prerequisites or corequisites: SOC 122 (All BIOL, CHEM, and DHYG courses must be completed with a "C" or higher.)

This course is designed to provide dental hygiene students with the basic anatomical foundations to support clinical course work. Topics to be covered include the skull, muscles, and vascular, glandular, lymphatic and nervous systems of the head and neck. 2 hrs. lecture/wk.

DHYG 140   Clinical Dental Hygiene II* (4 Hours)
Prerequisites: DHYG 121 and DHYG 125 and DHYG 135 and SOC 122.

Corequisites: DHYG 142 and DHYG 146 and DHYG 148.

Prerequisites or corequisites: BIOL 225 (All BIOL, CHEM, and DHYG courses must be completed with a grade of "C" or higher.)

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 that may be encountered in various practice settings. An introduction to the dental hygiene process of care (ADPIED) and working with special-needs patient populations will be provided. 2 hrs. lecture/8 hrs.clinic/wk.

DHYG 142   Dental Radiography* (2 Hours)
Prerequisites: DHYG 121 and DHYG 125 and DHYG 135 and DHYG 138.

Corequisites: DHYG 140 and DHYG 146 and DHYG 148.

Prerequisites or corequisites: BIOL 225 (All BIOL, CHEM, and DHYG courses must be completed with a grade of "C" or higher.)

This course prepares the dental hygiene student to expose, process and critique intra and extraoral radiographs for clinical practice. Emphasis is placed on technique and individual patient radiographic need using standardized As Low As Reasonably Achievable (ALARA) concepts. Students process, mount and evaluate radiographs for diagnostic value associated with patient care. Radiation production, biology and safety are required for students to make informed decisions and adjustments for optimum patient care. 1 hr. lecture, 3 hrs. lab/wk.

DHYG 146   Periodontics* (3 Hours)
Prerequisites: DHYG 121 and DHYG 125 and DHYG 135 and DHYG 138.

Corequisites: DHYG 140 and DHYG 142 and DHYG 148.

Prerequisites or corequisites: BIOL 225 (All BIOL, CHEM, and DHYG courses must be completed with a grade of "C" or higher.)

This course provides the dental hygiene student with an in-depth study of periodontal disease including the inflammatory process and its relationship to pathogenesis of periodontal disease; identification of etiological factors; classification of periodontal disease following a complete periodontal assessment; recognition of gingival conditions and risk assessment; description of periodontal surgical procedures; the recognition of periodontal emergencies; and the effectiveness of plaque control and nonsurgical periodontal therapy. 3 hrs. lecture/wk.

DHYG 146H   HON: Periodontics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

DHYG 148   Dental Health Education* (2 Hours)
Prerequisites: DHYG 121.

Corequisites: DHYG 140 and DHYG 142 and DHYG 146.

Prerequisites or corequisites: BIOL 225 and DHYG 135.

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 Hours)
Prerequisites: DHYG 140 and BIOL 235.

Corequisites: DHYG 225 and DHYG 230 and DHYG 240.

Students will continue development in the areas of patient management, preventive dental hygiene treatment and proficiency in clinical techniques through practical application. Current advances in dental hygiene services will also be introduced. 2 hrs. lecture, 16 hrs. clinic/wk.

DHYG 221H   HON: Clinical Dental Hygiene III* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

DHYG 225   General and Oral Pathology* (3 Hours)
Prerequisites: DHYG 140 and DHYG 142 and DHYG 146 and DHYG 148 and BIOL 225 and BIOL 235.

Corequisites: DHYG 221 and DHYG 230 and DHYG 240 (All BIOL, CHEM, and DHYG courses must be completed with a grade of "C" or higher.)

This course prepares the student dental hygienist to determine when to consult, treat or refer clients with various disease, infection or physiological conditions. Students learn to recognize the signs, causes and implications of common pathological conditions including inflammatory responses, immune disorders, genetic disorders, developmental disorders of tissues and cysts, oral tissue trauma and neoplasm of the oral cavity. 3 hrs. lecture/wk.

DHYG 225H   HON: General and Oral Pathology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

DHYG 230   Dental Therapeutics* (3 Hours)
Prerequisites: DHYG 140 and BIOL 235.

Corequisites: DHYG 221 and DHYG 225 and DHYG 240.

This course will introduce the basic principles of drug actions, emphasizing dental-related therapeutics and drugs associated with common systemic disorders, information on the selection of professional products, and principles necessary in administering local anesthesia. 2 hrs. lecture, 2 hrs. lab/wk.

DHYG 240   Dental Public Health* (2 Hours)
Prerequisites: DHYG 140 and DHYG 142 and DHYG 146 and DHYG 148 and BIOL 225 and BIOL 235.

Corequisites: DHYG 221 and DHYG 225 and DHYG 230 (All BIOL, CHEM, and DHYG courses must be completed with a grade of "C" or higher.)

This course facilitates the student's development as a responsible leader in public health programs. Topics include public health structure and global public health access, statistical procedures for critiquing scientific literature and epidemiology. Course content includes emphasis on the role of the dental hygienist in community health promotion, assessment, planning, implementation and evaluation using evidenced-based research. 2 hrs. lecture/wk.

DHYG 245   Nitrous Oxide Analgesia* (1 Hour)
Prerequisites: DHYG 221.

Corequisites: DHYG 250.

This course will concentrate on the principles of administering and monitoring nitrous oxide analgesia. Upon completion of the course, didactic and clinical proficiency in nitrous oxide analgesia will meet certification standards set by state dental boards. 1 hr. lecture, lab/wk.

DHYG 245H   HON: Nitrous Oxide Analgesia* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

DHYG 250   Clinical Dental Hygiene IV* (6 Hours)
Prerequisites: DHYG 221.

Corequisites: DHYG 245.

This course will offer continued development of proficiency in clinical techniques and current procedural practices of the dental hygienist with emphasis on self-evaluation. Topics will include ethics, jurisprudence, office management, current dental hygiene issues and preparation for board exams. 2 hrs. lecture, 16 hrs. clinic/wk., 1 hr. board review for first 8 wks.

DHYG 250H   HON:Clinical Dental Hygiene IV* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

DHYG 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Dietary Managers (DIET)

Courses

DIET 100   Foodservice Management for Dietary Managers (3 Hours)
This course provides a comparison of the different types of meal service, along with ways of satisfying client preferences. Students will understand and apply the various components of foodservice including forecasting, purchasing, receiving and storing food, and equipment recommendations. Budgeting, marketing, safety and food quality of the industry will also be covered. 3 hrs. lecture/wk.

DIET 151   Nutrition and Meal Planning (3 Hours) nbsp;
This course covers the food groups and their function and nutritional values as applied to meal planning. Assessment of personal dietary intake will also be explored. In addition to the current trends in nutrition this course covers energy balance, sustainability and nutrition in the life span. This is a required course for the food and beverage management, chef apprenticeship and dietary manager programs. 3 hrs. lecture/wk.

DIET 151H   HON: Nutrition and Meal Planning* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

DIET 200   Medical Nutrition Therapy* (3 Hours)
Prerequisites: DIET 151 or HMEC 151.

This course provides an understanding of how medical nutrition therapy impacts disease and the role of the dietary manager in utilizing this therapy in a clinical setting. 3 hrs. lecture/wk.

DIET 251   Nutrition Applications* (3 Hours)
Prerequisites or corequisites: DIET 200.

This course explores the application of nutrition in four areas of emphasis: clinical, community, research and food science. This course requires a minimum of 25 hours of coordinated field experience. Some field experience facilities may have other requirements.

DIET 275   Dietary Managers Practicum* (2 Hours)
Prerequisites: Department approval.

This course enables the student to apply classroom knowledge to an actual work situation. The practicum will be developed cooperatively with area employers, college staff and each student. It will include a minimum of 100 hours per semester in a foodservice organization that would hire a dietary manager. This is a capstone class. Students will be required to have a background check and documentation of current TB skin test - negative results.

Drafting/CAD/AutoCAD (DRAF)

Courses

DRAF 120   Introduction to Drafting (2 Hours)
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. 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.

DRAF 123   Interpreting Machine Drawings* (2 Hours)
Prerequisites or corequisites: DRAF 120 or department approval.

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 Hours)
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. lecture/wk.

DRAF 130   Introduction to CAD Concepts - AutoCAD* (3 Hours)
Prerequisites or corequisites: DRAF 120 or department approval.

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 the 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. open lab/wk. Drafting classes that have an additional lab have either the time and room listed or TBA (to be announced) with the room number listed.

DRAF 132   Exploring AutoCAD (3 Hours)
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. open lab/wk.

DRAF 135   Graphic Analysis* (3 Hours)
Prerequisites: DRAF 130 or department approval.

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.

DRAF 140   Topics in CAD I: (2 Hours)
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/wk.

DRAF 143   Introduction to BIM Building Information Modeling* (2 Hours)
Prerequisites or corequisites: DRAF 129.

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 Hours)
Prerequisites or corequisites: DRAF 123 or Department approval.

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.

DRAF 152   3D Modeling with SketchUp (2 Hours)
The course will teach how to model (draft in 3D) with SketchUp, a popular software program. Students will learn how to sketch their ideas for prototypes, floor plans and buildings, embellish a drawing for presentation purposes, make animations of their model, export the model into different file formats and 3D print the model. 2 hrs. lecture/wk.

DRAF 162   3D Printing and CNC Fabrication (2 Hours)
The course will teach how to model and fabricate prototype ideas using Autodesk 123D, a free suite of apps. Students will learn how to make solid, mesh and reality capture models, 3D print them and generate a file for a Computer Numeric Control (CNC) cutting machine. 2 hrs. lecture/wk.

DRAF 164   Architectural Drafting/Residential Interior Design (3 Hours)
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.

DRAF 164H   HON: Architectural Drafting/Residential Interior Design* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

DRAF 211   Engineering Design Problems* (3 Hours)
Prerequisites: MATH 131 or MATH 171 or MATH 173 or MATH 241 or department approval.

This course introduces the student to a variety of engineering design concepts. Topics include structural loading conditions, steel member selection, pressurized fluid flow, open channel flow and stormwater/hydrology. Students apply these concepts to solve practical problems found in industry. This course is typically offered in the spring semester. 3 hrs. lecture/wk.

DRAF 222   Mechanical Design and Drafting* (3 Hours)
Prerequisites: DRAF 123 and DRAF 135 and DRAF 230 and DRAF 245.

Prerequisites or corequisites: MATH 131 or MATH 172.

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.

DRAF 225   Civil Drafting* (3 Hours)
Prerequisites: DRAF 230 or department approval.

Prerequisites or corequisites: DRAF 244 and (MATH 131 or MATH 172).

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 fall semester. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 230   Intermediate CAD: AutoCAD* (3 Hours)
Prerequisites or corequisites: DRAF 130 or department approval.

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. open lab/wk.

DRAF 238   Architectural Design and Drafting* (3 Hours)
Prerequisites: DRAF 129 and DRAF 135 and DRAF 230 and DRAF 243.

This course is an introduction to the production of architectural drawings for residential and commercial construction. Upon successful completion of this course, the student will be able to design and draw floor plans, sections, elevations, dimensions and schedules. Industry standard code and reference books, such as the International Residential Code and Architectural Graphic Standards books, will be used in the research and design process. Projects will be completed using computer-aided drafting (CAD) software. This course is typically taught in the spring semester. 2 hrs. lecture, 3 hrs. lab/wk.

DRAF 242   Topics in CAD II* (2 Hours)
Prerequisites: DRAF 230 or department approval.

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/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 Hours)
Prerequisites or corequisites: DRAF 143 or department approval.

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/wk.

DRAF 244   Civil 3D* (2 Hours)
Prerequisites or corequisites: DRAF 225 or department approval.

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 are taking or have taken DRAF 225, Civil Drafting. 2 hrs. lecture/wk.

DRAF 245   Advanced Parametric Design: Inventor* (2 Hours)
Prerequisites or corequisites: DRAF 145 or department approval.

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 145. 2 hrs. lecture/wk.

DRAF 246   MicroStation for AutoCAD users* (2 Hours)
Prerequisites: DRAF 230 or department approval.

This course introduces the student to the MicroStation software interface and command structure. The course is intended for students who are familiar with the use of the AutoCAD software and need a transition to the use of MicroStation. Topics include basic operating fundamentals, AccuDraw, working with elements, references and printing. 2 hrs. lecture/wk.

DRAF 252   Structural Design and Drafting* (3 Hours)
Prerequisites: DRAF 129 and DRAF 135 and DRAF 230 and DRAF 243 or department approval.

Prerequisites or corequisites: MATH 131 or MATH 172.

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 Hours)
Prerequisites: DRAF 164 and ITMD 121(both courses must be completed with a grade of "C" or higher), or department approval.

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. open 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 DRAF 164 and ITMD 121 require a grade of "C" or higher.

DRAF 264H   HON: CAD: Interior Design* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

DRAF 271   Drafting Internship I* (3 Hours)
Prerequisites: department approval.

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students the opportunity to develop job- and career-related skills while in a work setting. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 15 hrs. min./wk. Drafting classes that have additional lab have either the time and room listed or TBA (to be announced) with the room number listed.

DRAF 272   Drafting Internship II* (3 Hours)
Prerequisites: DRAF 271 and department approval.

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students the opportunity to develop job- and career-related skills while in a work setting. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals.15 hrs. min./wk. Drafting classes that have additional lab have either the time and room listed or TBA (to be announced) with the room number listed.

DRAF 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Economics (ECON)

Courses

ECON 132   Survey of Economics (3 Hours)
Upon successful completion of this course, the student should be able to explain basic macroeconomic and microeconomic theory, fiscal and monetary policies, the role and significance of international economics and government trade and regulatory policies. In addition, the student should be able to describe the characteristics and consequences of the differing business units in the economy, as well as the functioning of the labor market and how national income is distributed. The course is primarily for students who desire a one-semester, nontechnical overview of the basic components of macroeconomic and microeconomic theory and the functioning of the United States economy. 3 hrs. lecture/wk.

ECON 132H   HON: Survey of Economics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ECON 230   Principles of Macroeconomics (3 Hours) nbsp;
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. 3 hrs. lecture/wk.

ECON 230H   HON: Principles of Macroeconomics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ECON 231   Principles of Microeconomics (3 Hours) nbsp;
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 an extended analysis of product supply and demand, theories 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. 3 hrs. lecture/wk.

ECON 231H   HON: Principles of Microeconomics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

Education and Early Childhood (EDUC)

Courses

EDUC 121   Introduction to Teaching* (3 Hours) nbsp;
Prerequisites: RDG 126 or College Reading Readiness.

Teaching concepts and practices as they apply to today's elementary and secondary schools will be introduced. Topics will include the roles and responsibilities of the teacher, various modes of instruction, specialized areas in teaching, and professional requirements and concerns. Twenty hours of observation in a school setting are required. 3 hrs. lecture/wk.

EDUC 130   Foundations of Early Childhood Education* (3 Hours)
Prerequisites: RDG 126 or College Reading Readiness.

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. 3 hrs. lecture/wk.

EDUC 131   Early Childhood Curriculum I* (3 Hours)
Prerequisites or corequisites: EDUC 130 with a grade of "C" or higher.

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 210   Creative Experiences for Young Children* (3 Hours)
Prerequisites: EDUC 130 with a grade of "C" or higher and PSYC 215.

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, creative movement and creative drama. Methods and materials for this course cover developmentally appropriate creative experiences; inclusive, anti-bias curriculum; integration of creative experiences throughout the curriculum; use of technology; and helping families understand the creative experience. 3 hrs. lecture/wk.

EDUC 220   Survey of the Exceptional Child* (3 Hours)
Prerequisites: RDG 126 or College Reading Readiness.

This course is an overview of the field of special education geared to those who are preparing to work with children and youths 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, 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. lecture/wk.

EDUC 231   Early Childhood Curriculum II* (3 Hours)
Prerequisites: EDUC 131.

This methods course is designed for students who are, or will be, working in an early childhood education setting and parents or others who desire to develop an intellectually challenging environment for young children. The focus of the course is on curriculum areas that deal with the physical and social aspects of the world. Included in this inquiry curriculum are mathematics, science, social studies and nutrition. 3 hrs. lecture/wk.

EDUC 234   Families in Society* (3 Hours)
Prerequisites or corequisites: PSYC 215.

This course is a study of effective relationships between families and the larger society. The course is designed for teachers and families who desire to provide an environment that reflects sensitivity to the unique needs of the individual child/adolescent and their families. Topics covered during the course are family dynamics, child and adolescent development, supporting positive relationships and behaviors, and effective communication and guidance strategies, as well as building and advocating for effective, collaborative relationships between teachers, families and communities. 3 hrs. lecture/wk.

EDUC 250   Child Health, Safety and Nutrition* (3 Hours)
Prerequisites: RDG 126 or College Reading Readiness.

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 Hours)
Prerequisites: EDUC 130 with a grade of "C" or higher.

Prerequisites or corequisites: PSYC 215.

This course is a study of the role of observation to assess and monitor the development and learning of, and the appropriate techniques for interacting with, young children. 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 also presented. The laboratory will include demonstration of the subject matter. 2 hrs. lecture, 3 hrs. lab/wk.

EDUC 283   Professional Competencies: Early Childhood Education* (1 Hour)
Prerequisites: Department approval.

This course focuses on the conduct and responsibilities of the early childhood professional. Topics include early childhood education codes, laws and regulations; child development; experience planning and curriculum development; observation and guidance of young children; authentic assessment; responsibilities to the young child's family, to the community, and to the teaching profession; employability skills; self-assessment; and job seeking skills. Completion of this course is required to obtain the One Year Post-Secondary Certificate in Early Childhood Education. 1hr. lecture/wk.

EDUC 285   Student Teaching: Early Childhood Education* (3 Hours)
Prerequisites: EDUC 130 and EDUC 250 and EDUC 260 (All courses must be completed with a grade of "C" or higher.)

This course will focus on the field experience of early childhood education students allowing them to apply their knowledge of teaching young children in a supervised setting. The student lab experience will occur in two different early childhood settings, with children of varying age groups. The course will also include a lecture/seminar component focused on practical application of student teaching experiences, as well as the development of a student teaching portfolio.

EDUC 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Electrical Technology (ELTE)

Courses

ELTE 110   AC/DC Circuits* (4 Hours)
Prerequisites: Department approval.

This is an introductory course that addresses the basics of Direct Current (DC) and Alternating Current (AC) circuits. The lab component to this course will expand on concepts taught in lecture by incorporating hands-on projects using common components found in the electrical industry. Students will gain experience in the process of reading and troubleshooting schematic drawings using electrical measuring equipment. 3 hrs. lecture/wk. and 3 hrs. lab/wk.

ELTE 115   Print Reading* (2 Hours)
Prerequisites: Department approval.

This course addresses the fundamentals of interpreting construction drawings. Students learn to read specification manuals and prints as applied to electrical installations in residential, commercial and industrial buildings. 3 hrs. integrated lecture/lab/wk.

ELTE 122   National Electrical Code I* (4 Hours)
Prerequisites or corequisites: ELTE 110.

This is an introductory course on the use and interpretation of the current National Electrical Code (NEC), chapters 1-4. Students will learn the purpose and history of the code; develop a working knowledge of the code requirements for wiring, protection, materials and equipment; and be able to discern between wiring methods used in different occupancies. 4 hrs. lecture/wk.

ELTE 125   Residential Wiring* (4 Hours)
Prerequisites or corequisites: ELTE 110 and ELTE 115.

This course covers residential wiring methods that include practical application and hands-on experience in implementing the code requirements. Installation rules and circuit designs for switches, receptacles, luminaires and appliances will also be discussed. The student will explore necessary skills to install electrical systems in a residential occupancy, meeting the minimum requirements as set forth in the current National Electrical Code (NEC). 3 hrs. lecture/wk. and 3 hrs. lab/wk.

ELTE 150   Solar Electric Systems* (4 Hours)
Prerequisites: ELTE 125.

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. 3 hrs. lecture/wk. and 3 hrs. lab/wk.

ELTE 175   Low Voltage Wiring* (3 Hours)
Prerequisites: ELTE 200.

This course covers the basic theory, installation standards and code requirements for various low voltage systems and their connecting devices. Discussion of closed circuit television, security, telephone, fire alarm, computer networking and wireless systems will be incorporated with hands-on experience installing and terminating conductors and cables in a lab environment. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

ELTE 200   Commercial Wiring* (4 Hours)
Prerequisites: ELTE 110 and ELTE 115.

This course covers commercial wiring methods that include practical application and hands-on experience in implementing the code requirements. Conduit hand bending techniques, conductor sizing and various wiring methods will also be discussed. The student will explore necessary skills to install electrical systems in a commercial occupancy, meeting the minimum requirements as set forth in the current National Electrical Code (NEC). 3 hrs. lecture/wk, 3 hrs. lab/wk.

ELTE 202   Electrical Estimating* (3 Hours)
Prerequisites: ELTE 115.

This course covers the process of estimating the cost of an electrical design. Students will learn to develop an electrical estimate for a residential and commercial design. Emphasis will be placed on compiling a take-off list of materials from blueprints, determining material and labor cost, writing bid proposals and creating change orders. 2 hrs. lecture/wk, 3 hrs lab/wk.

ELTE 222   National Electrical Code II* (4 Hours)
Prerequisites: ELTE 122.

This course is a continuation of the National Electrical Code I course on the use and interpretation of the current National Electrical Code (NEC), chapters 5-9. Students will develop a working knowledge of the code requirements for special occupancies, special equipment, special conditions and communication systems, and be able to use the NEC tables to size conduit raceways. As a requirement of this course, students will take the Journeyman Electrical exam for the current code cycle and be responsible for fees associated with the cost of the exam. Please contact the program chair for more information about the Journeyman Electrical exam fees. 4 hrs. lecture/wk.

ELTE 225   Industrial Wiring I* (3 Hours)
Prerequisites: ELTE 200.

This is an introductory course that covers industrial wiring methods that include practical application and hands-on experience in implementing the code requirements. Transformer installation, power distribution and various wiring methods will also be discussed. The student will explore necessary skills to install electrical systems in an industrial occupancy, meeting the minimum requirements as set forth in the current National Electrical Code (NEC). 2 hrs. lecture/wk. and 3 hrs. lab/wk.

ELTE 250   Industrial Wiring II* (3 Hours)
Prerequisites: ELTE 225.

This course is a continuation of industrial wiring methods that include practical application and hands-on experience in implementing the code requirements. Motor installation and control, generator installation and various wiring methods will also be discussed. The student will explore necessary skills to install electrical systems in an industrial occupancy, meeting the minimum requirements as set forth in the current National Electrical Code (NEC). 2 hrs. lecture/wk. and 3 hrs. lab/wk.

ELTE 271   Electrical Internship* (3 Hours)
Prerequisites: Department approval.

The internship will provide advanced students the opportunity to apply classroom knowledge 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)

Courses

ELEC 120   Introduction to Electronics (3 Hours)
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.

ELEC 125   Digital Electronics I (4 Hours)
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. open lab/wk.

ELEC 127   Robots for Humans (4 Hours)
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 134   DC Circuits* (4 Hours)
Prerequisites: ELEC 120.

Prerequisites or corequisites: MATH 130 (or higher).

This course covers resistive circuits having DC sources. Analysis topics include Ohm's law, Kirchoff's law, Watt'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 and 3 hrs. lab/wk.

ELEC 185   LAN Cabling and Installation (3 Hours)
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.

ELEC 186   CompTIA A+ Essentials (3 Hours)
Students will gain the knowledge required to assemble components based on customer requirements, and to install, configure and maintain devices for end users. This course also covers the basics of networking and security/forensics, proper and safe diagnosis, and how to resolve and document common hardware issues while applying troubleshooting skills. 2 hrs lecture and 3 hrs. lab/wk.

ELEC 212   Fundamentals of Light and Lasers* (3 Hours)
Prerequisites: MATH 131 (or higher).

This is the foundational course necessary for applying lasers and/or photonics to other technologies. It covers the basics of light and lasers that will allow a technician to continue his or her studies in any photonics-enabled technology. This course reviews the physics of light, geometrical and wave optics, light sources, basic optical material and lab equipment, laser principles, and laser safety. 2 hrs. lecture and 3 hrs. lab/wk.

ELEC 225   Digital Electronics II* (3 Hours)
Prerequisites: ELEC 125.

Students will continue their study of digital concepts and will learn how to build digital circuitry using digital integrated circuit chips and basic concepts of computer organization. In additional, emphasis will be placed on learning how to troubleshoot digital circuits and digital systems. Each student will build a digital computer through a series of laboratory projects. 2 hrs. lecture, 3 hrs. open lab/wk.

ELEC 234   AC Circuits* (4 Hours)
Prerequisites: ELEC 134.

The analysis techniques presented in Electronics I will be applied to complex circuits driven by Alternating Current (AC) and pulsed sources. The responses of the circuits having resistance, impedance, inductive and capacitive reactance will be analyzed. Other topics will include transformers and electronic filters. 3 hrs. lecture and 3 hrs. lab/wk.

ELEC 235   Microprocessors* (4 Hours)
Prerequisites: ELEC 225.

This course is designed to provide an introduction to advanced microcomputer concepts and applications. This course is a continuation of topics introduced in the Digital Electronics I and II classes. Included are hardware and software topics in operating systems, peripherals, displays, processors, storage media, maintenance, diagnostics and troubleshooting. Analog and digital data acquisition and processing will also be covered. 3 hrs. lecture and 3 hrs. lab/wk.

ELEC 236   Semiconductor Devices* (4 Hours)
Prerequisites or corequisites: ELEC 234.

Topics for this class include the analysis and understanding of diodes and transistors. Special purpose diodes, bipolar junction transistors (BJT) and field effect transistors (FET) will be examined. Additional topics include operational amplifiers (Op-Amps), four-layer semiconductor devices and voltage regulators. Op-Amp applications will cover comparators, summing amplifiers, integrators, differentiators and active filters. 3 hrs. lecture and 3 hrs. lab/wk.

ELEC 240   Electronic Communication Systems* (4 Hours)
Prerequisites or corequisites: ELEC 236.

This course provides a study of electronic communication systems used in today's world. Topics will include the electromagnetic spectrum, decibels, signal-to-noise ratio, AM and FM super-heterodyne radios, antennas, transmission lines and the Global Positioning System. 3 hrs. lecture and 3 hrs. lab/wk.

ELEC 250   Microcomputer Maintenance* (3 Hours)
Prerequisites: ELEC 186.

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 and 3 hrs. lab/wk.

ELEC 251   Laser Systems and Applications* (3 Hours)
Prerequisites: ELEC 212.

Prerequisites or corequisites: ELEC 252.

Laser Systems and Applications covers more advanced concepts in photonics and the operating principles, output characteristics, diagnostics and applications for fiber- and diode-based lasers. These lasers will be classified according to their active medium, output wavelength and applications. 2 hrs. lecture and 3 hrs. lab/wk.

ELEC 252   Specialized Lasers and System Integration* (3 Hours)
Prerequisites: ELEC 251.

The advanced course will focus on the function on the Fiber Laser and the Diode (Semiconductor) Laser. Students will work with laser operation and safety procedures. Topics will also cover system integration and the subsystems required in today's industry that depend on Photonics. 2 hrs. lecture and 3 hrs. lab/wk.

ELEC 271   Electronics Internship I* (1-3 Hour)
Prerequisites: Department approval.

This course affords the student the opportunity to apply classroom knowledge to an actual work environment. It will provide selected advanced electronics technology students with appropriate on-the-job experience with area employers, under instructional oversight, that will promote the student's career goals. 18 hrs. approved and appropriate work activity/wk.

ELEC 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Emergency Medical Science/MICT (EMS)

Courses

EMS 121   CPR I - Basic Life Support for Healthcare Provider (1 Hour)
This course provides an overview of the cardiovascular and respiratory systems, a discussion of medical and environmental emergencies leading to the need for CPR, and an introduction to diagnostic signs and triage, as well as insight into the structure and function of the emergency medical services system. The most current practical CPR skills will be taught, including CPR, AED, and airway obstruction techniques for adults, children and infants. Upon successful completion of all American Heart Association standards, the student will receive affirmation at the Healthcare Provider level. 4 hrs. lecture, lab/wk. for 5 wks.

EMS 128   EMS First Responder (5 Hours)
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 Hours)
Prerequisites: Successful completion of an Emergency Medical Responder or First Responder course (EMS 128) with a grade of "C" or higher or Program Director review of previous experience.

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.

EMS 133   Emergency Medical Technician Practicum* (3 Hours)
Prerequisites: EMS 131 or equivalent and a copy of current EMT-B card.

EMT Practicum is designed to give the newly certified EMT-B the additional skills and confidence needed to successfully compete for a position as an EMT-B with an EMS service. Skills will include ambulance operation, driving, map reading, insurance billing and unit maintenance. This course will also provide high-fidelity scenario training in all aspects of the EMS call as well as extensive field lab time with a local EMS service. Students will participate in realistic medical emergency scenarios with "actors" playing life-like patients and bystanders as well as numerous field internship shifts on a licensed ambulance. Students will work through all phases of an ambulance call. They will be presented with complex patient care situations that require the development of critical thinking and decision-making skills. Students will be tested on their ability to lead a team of pre-hospital caregivers in the diagnosis, proper treatment and evacuation of a patient. Scenario simulations will be set up to be as lifelike as possible. 2 hrs. lecture, 10 hrs. lab/wk. This course is only offered in the summer.

EMS 140   Basic Cardiology and EKG Recognition* (3 Hours)
Prerequisites: Prospective students should be certified in a health profession, i.e., EMT, RN, LPN, EMT-P.

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 210   Emergency Medical Services Instructor Coordinator* (5 Hours)
Prerequisites: Prospective students must meet all the requirements for selection as set forth by the Kansas Board of Emergency Medical Services, which includes certification as a care provider, documentation of pre-hospital experience and successful completion of the BEMS pre-selection process.

This course covers the basic tenets of adult education as they apply to teaching emergency medical services provider courses. Students are oriented to all Kansas requirements for conducting initial courses of instruction for ambulance attendants. Successful completion will be the first step toward certification as a Kansas EMS instructor coordinator. This program has been approved by the Kansas Board of Emergency Medical Services (BEMS). It addresses information and techniques currently considered the responsibility of the EMT-IC according to the United States Department of Transportation, National Standard Curriculum. 5 hrs. lecture-demonstration/wk. for 8 wks.

EMS 220   MICT I* (10 Hours)
Prerequisites: Admission to the MICT program.

MICT I is the first of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. In this narrowly focused but intense foundational course, the paramedic student will gain a significant knowledge of patient assessment, pharmacology and medication administration techniques, electrocardiography, advanced airway management and paramedic scope of practice. Much material will be covered rapidly, and emphasis is on organization, internalization and synthesis of the basic knowledge of the discipline in this 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. 192 hrs. integrated lecture/lab.

EMS 225   MICT II* (10 Hours)
Prerequisites: EMS 220 with a grade of "C" or higher.

MICT II is the second of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. This course builds on the foundational knowledge developed in MICT I and covers advanced management of medical and trauma emergencies in the out-of-hospital environment. Much material will be covered rapidly, and emphasis is on organization, internalization, synthesis and application of the basic knowledge of the discipline in this 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 Hours)
Prerequisites: EMS 225 with a grade of "C" or higher.

MICT III is the third of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. During MICT III, paramedic students have the opportunity to take the knowledge and skills gained in MICT I and II and apply them in actual supervised clinical practice. MICT III represents a brief, intense 14-week course in which knowledge and skills are synthesized and applied to patients under supervision of physicians and nurses in clinical practice in the emergency department, critical care unit, surgery/ recovery room, labor/delivery room, pediatric emergency department and burn center. Field observation lab and classroom and laboratory review are included as well. 342 hrs. integrated lecture/lab and field/clinical experience.

EMS 271   MICT IV Field Internship* (15 Hours)
Prerequisites: EMS 230 with a grade of "C" or higher.

MICT IV is the final of four courses in advanced out-of-hospital emergency medical care leading to the opportunity to sit for the National Registry Examination for Paramedics. During MICT IV, paramedic students have the opportunity to take the knowledge and skills gained in MICT I, II and III and apply them in an actual practice environment. MICT IV represents an intense 4-month course in which knowledge, skills and professional behaviors are synthesized and applied to victims of sudden trauma or medical emergencies under supervision of paramedic preceptors at the emergency scene and in the ambulance. Entry-level competence into the profession is demonstrated as the student demonstrates the ability to assess the scene and the patient, develop a plan for therapeutic intervention as well as scene management, and effectively lead the out-of-hospital resuscitation team's effort. Classroom and laboratory review are included. 810 hrs. integrated lecture/ lab and field/clinical experience.

Energy Perform & Resource Mgmt (EPRM)

Engineering (ENGR)

Courses

ENGR 121   Engineering Orientation (2 Hours)
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 Hours)
Prerequisites or corequisites: MATH 130 or MATH 171 or MATH 172 or MATH 173 or MATH 241.

Upon successful completion of this course, the student will be able to apply graphic principles used in the engineering design process. The student will master graphics concepts using computer-aided drafting (CAD) software. Topics include 2-D and 3-D CAD commands; geometric construction; multi-view, orthographic projection; sectional views; isometrics; dimensioning; and descriptive geometry. 3 hrs. lecture, 4 hrs. open lab/wk.

ENGR 251   Statics* (3 Hours)
Prerequisites: MATH 242.

Prerequisites or corequisites: PHYS 220.

Upon successful completion of this course, the student should be able to describe and predict the conditions of rest and motion of bodies under the action of forces. The principles used will include vectors, force systems, equilibrium, free body diagram, centroids, moments of inertia, trusses, frame, and shear and moment diagrams. This course is typically offered in the summer and fall semesters. 3 hrs. lecture/wk.

ENGR 251H   HON: Statics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGR 254   Dynamics* (3 Hours)
Prerequisites: ENGR 251.

Upon successful completion of this course, the student should be able to apply the principles of dynamics, the branch of engineering mechanics that studies objects in motion. Topics covered 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.

ENGR 254H   HON: Dynamics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

English (ENGL)

Courses

ENGL 102   Writing Strategies* (3 Hours)
Prerequisites: Appropriate placement test score.

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. 3 hrs. lecture/wk.

ENGL 103   Practical Writing Skills (1 Hour)
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. 1 hr lecture/wk.

ENGL 106   Introduction to Writing* (3 Hours)
Prerequisites: ENGL 102 or appropriate score on assessment test.

Beginning with a review of basic sentence skills, this course focuses on paragraph development, including subject selection, topic sentences, methods of development, transitional devices and effective introductions and conclusions. The last part of the course will focus on developing multi-paragraph essays. 3 hrs. lecture/wk. 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 Hour)
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. 1 hr. lecture/wk.

ENGL 108   Composing Skills (1 Hour)
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. 1 hr. lecture/wk.

ENGL 109   Proofreading Skills (1 Hour)
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. 1 hr. lecture/wk.

ENGL 110   English Grammar Review (1 Hour)
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. 1 hr. lecture/wk.

ENGL 112   Research Skills (1 Hour)
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. 1 hr. lecture/wk.

ENGL 115   Revision Skills (1 Hour)
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. 1 hr. lecture/wk.

ENGL 120   Writing in the Disciplines (1 Hour)
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. 1 hr. lecture/wk. Students should anticipate approximately 20 hours of work to complete the course.

ENGL 121   Composition I* (3 Hours) nbsp;
Prerequisites: ENGL 106 or appropriate placement test score or both EAP 113 and EAP 117.

Composition I focuses on writing nonfiction prose suitable in its expression and content to both its occasion and its audience. Students will have an opportunity to improve in all phases of the writing process: discovering ideas, gathering information, planning and organizing, drafting, revising and editing. Each text 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. Some sections of this course are tailored to meet the needs of specific student populations, such as veterans or Honors students, or students in specific programs, such as Hospitality or Technology. By the end of the semester, students should have completed at least 20 pages (approximately 5,000 words) of revised and edited prose. 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. 3 hrs. lecture/wk.

ENGL 121H   HON: Composition I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 122   Composition II* (3 Hours) nbsp;
Prerequisites: ENGL 121.

Composition II focuses on skills essential to gathering, comprehending, analyzing, evaluating and synthesizing information from a variety of academic and non-academic sources. Because writing is integral to college coursework and the workplace, this course emphasizes the rhetorical skills needed to understand and produce complex compositions in a variety of forms, which may include essays, presentations, reports, social media posts and other digital forms of communication. Composition II emphasizes the deep revision needed to compose expository, evaluative and persuasive prose. Some sections of this course are tailored to meet the needs of specific student populations, such as veterans or Honors students, or students in specific programs, such as Hospitality or Technology. By the end of the semester, students should have completed at least 25 pages (approximately 6,250 words) of revised and edited prose. 3 hrs. lecture/wk.

ENGL 122H   HON: Composition II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 123   Technical Writing I* (3 Hours)
Prerequisites: ENGL 121.

This course provides a basic knowledge of technical writing. Students will learn the writing process (prewriting, writing and rewriting) to follow when constructing correspondence, including memos, letters, e-mail, reports, instructional manuals and Web pages. Students also will learn seven key traits of effective technical writing: clarity, conciseness, document design, organization, audience recognition, audience involvement and accuracy. Accuracy specifically entails the need for students to adhere to rules of grammar and mechanics. Students will learn how to create computer- generated graphics and learn word processing skills. Finally, the students will learn how to work in teams, modeling Total Quality Management skills. 3 hrs. lecture/wk.

ENGL 130   Introduction to Literature* (3 Hours) nbsp;
Prerequisites: ENGL 121.

Students will read, discuss and analyze works from three literary genres: the short story, the poem and the play. Students will learn and apply the technical vocabulary used in the criticism of these literary forms. Students will be introduced to representative works from various literary traditions and cultures, including numerous works from contemporary writers. 3 hrs. lecture/wk.

ENGL 130H   HON: Introduction to Literature* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 140   Writing for Interactive Media* (3 Hours)
Prerequisites: ENGL 121.

This course teaches students to apply the writing process as well as fundamental rhetorical and composition skills to various interactive media including web pages, CD-ROMs/DVD, e-mail, kiosks, 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.

ENGL 150   Digital Narratives* (3 Hours)
Prerequisites: ENGL 121.

Games, particularly Role-Playing Games (RPGs) and other participatory narratives, share many properties with traditional narratives, yet differ significantly from their linear counterparts. This course focuses on the elements of narrative as well as the principles that drive virtual or alternative possible worlds (both fictive and reality-based), and it will provide students with practice writing and designing artifacts that demonstrate an understanding of plot, character, setting and the impact of structure and purpose in game development. 3 hrs. lecture/wk.

ENGL 205   Bible as Literature* (3 Hours)
Prerequisites: ENGL 121.

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 studied. 3 hrs. lecture/wk.

ENGL 215   U.S. Latino and Latina Literature* (3 Hours)
Prerequisites: ENGL 121.

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 Hours)
Prerequisites: ENGL 121.

This survey course introduces students to a representative sample of texts created by women from the mid-seventeenth century to present. Using the lens of gender, students will explore the social, historical, political and cultural contexts relevant to the literature. Further, students will identify significant literary devices and genres as employed by these authors. The course will emphasize the dynamic relationship between the literature and its contexts. 3 hr. lecture/wk.

ENGL 217H   HON: Literature by Women* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 222   Advanced Composition* (3 Hours)
Prerequisites: ENGL 122.

This course offers challenging insights into the act of writing. We will move beyond Composition I and Composition II, focusing on writing persuasively to a select audience; working together to anticipate and defuse objections; supply convincing evidence; synthesize the ideas of others to support our ends; look critically at all sources; and perfect a mature, polished style that is suitable to audience and occasion. 3 hrs. lecture/wk.

ENGL 223   Creative Writing* (3 Hours)
Prerequisites: ENGL 122.

Students will study and practice writing in two or three of the major literary modes of writing: poetry, fiction, and possibly drama. The reading assignments are based on the premise that, to be a good writer, students must have knowledge of literary techniques and be perceptive readers and critics. Students will examine techniques of two or possibly three of the literary genres and then apply their knowledge to write in each genre. In addition, they will read other students' work and provide useful feedback on that work. 3 hrs. lecture/wk.

ENGL 223H   HON: Creative Writing* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 224   Creative Writing Workshop* (3 Hours)
Prerequisites: ENGL 223.

In this class, students will build upon the knowledge and skills learned in ENGL 223. In addition to studying writing techniques, they will produce a body of written work in one or more literary genres of their choice: poetry, fiction, and/or drama. They will also read other students' work and provide useful feedback on that work. 3 hrs. lecture/wk.

ENGL 224H   HON: Creative Writing Workshop* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 227   Introduction to Poetry* (3 Hours)
Prerequisites: ENGL 121.

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 Hours)
Prerequisites: ENGL 122.

This course features significant opportunities to write about the literature and the reader's response to it. Students will learn the historical fictional precedents of the short story; the similarities and differences between the short story and other narrative forms, such as the novel; the differences between the short story and its historical precedents, between short stories and film adaptations of them, and between commercial and literary short stories. Students will discover the place of short stories in major literary movements, the key elements of short stories and interpretive approaches to short stories. 3 hrs. lecture/wk.

ENGL 230H   HON: Introduction to Fiction* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 232   Children's Literature* (3 Hours)
Prerequisites: ENGL 122.

Children's Literature is meant for all students interested in bringing children and books together but is especially suited for those who are students with English or education majors; teachers already in the elementary school classroom; parents; those working with children in preschools, day-care centers and libraries; and grandparents and prospective parents. The course would also benefit those exploring the field of writing and illustrating for children. Students will identify children's needs and interests, list the criteria for choosing books for children, and demonstrate the means by which we can bring children and books together. Students will read, examine and critique a variety of children's literature selected by author, genre and historical time period. 3 hrs. lecture/wk.

ENGL 232H   HON: Children's Literature* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 235   Drama as Literature* (3 Hours)
Prerequisites: ENGL 122.

This course introduces students to the analysis of plays as literature. Beginning with the Greek dramatists and ending with the contemporary scene, students will read full-length plays and the comments of playwrights, directors, actors and critics. They will analyze drama from psychological, historical, philosophical, structural and dramatic perspectives. Students will write essays demonstrating their understanding of the works studied. 3 hrs. lecture/wk.

ENGL 236   British Literature I* (3 Hours)
Prerequisites: ENGL 121.

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, various regions of Africa or the Middle East. 3 hrs. lecture/wk.

ENGL 236H   HON: British Literature I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 237   British Literature II* (3 Hours)
Prerequisites: ENGL 121.

In this survey course, the student will study British literature written from 1800 to the present. Major authors from the Romantic, Victorian and Modern eras, such as Austen, Blake, Wordsworth, the Shelleys, Dickens, Tennyson, the Brownings, Eliot and Woolf, will be included. The course will emphasize the relationships among influential writers, their lives and times. Additionally, the student will explore the literary differences between the British culture and one other culture that was governed by the British Empire. Such non-British literary works may be chosen from the traditions of Australia, India, Asia, various regions of Africa or the Middle East. British Literature I is NOT a prerequisite for this course. 3 hrs. lecture/wk.

ENGL 237H   HON: British Literature II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 243   Literature of Science Fiction* (3 Hours)
Prerequisites: ENGL 121.

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.

ENGL 244   Literature of American Popular Music* (3 Hours)
Prerequisites: ENGL 121.

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 246   American Literature I* (3 Hours)
Prerequisites: ENGL 121.

This survey course is a stand-alone course that presents a series of literary works by American writers that reflects the attitudes and identity of our national literature and culture from the pre-Colonial Period through the post-Civil War era. By grappling with the ideas and characterizations presented in each assigned literary work, the student develops meaningful insights into the attitudes and human conditions that have influenced America's national literary identity. 3hrs. lecture/wk.

ENGL 247   American Literature II* (3 Hours)
Prerequisites: ENGL 121.

This survey course is a stand-alone course which need not be taken after American Literature I, covering the pre-Colonial period through the post-Civil War era. American Literature II presents a series of literary works by American writers that reflects the attitudes and identity of our national literature and culture from the post-Civil War era to the present. By grappling with the ideas and characterizations presented in each assigned literary work, the student develops meaningful insights into the attitudes and human conditions that have influenced and are still influencing America's national literary identity. 3 hrs. lecture/wk.

ENGL 250   World Masterpieces* (3 Hours)
Prerequisites: ENGL 122.

World Masterpieces introduces students to literary study using major literary works composed from the times of Homer to Shakespeare that have been influential in shaping and expressing values of Western culture. Students will read selections representative of the epic, tragic, comic and lyric traditions primarily to gain knowledge of the works assigned. In addition, students will analyze the assigned texts as literary works and as cultural artifacts and influences. Finally, students will compare and contrast contemporary understandings of the individual and society with those expressed in the works studied. In completing the course objectives, students will learn the conventions of writing about literature and become familiar with general reference materials useful in studying literature. 3 hrs. lecture/wk.

ENGL 250H   HON: World Masterpieces* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 254   Masterpieces of the Cinema* (3 Hours)
Prerequisites: ENGL 121.

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 specific films. 3 hrs. lecture/wk.

ENGL 254H   HON: Masterpieces of Cinema* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ENGL 291   Independent Study* (1-3 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

ENGL 292   Special Topics:* (3 Hours)
Prerequisites: ENGL 121.

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)

Courses

EAP 101   Writing and Grammar I* (3 Hours)
Prerequisites: Appropriate ESL assessment test score.

This English for Academic Purposes course provides non-native English-speaking 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. This course does not fulfill degree requirements. This 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 Hours)
Prerequisites: EAP 101 or appropriate ESL assessment test score.

This English for Academic Purposes course provides non-native English-speaking 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 student success. This course does not fulfill degree requirements. This is the second writing and grammar course in the sequence of courses leading to ENGL 121. 3 hrs. lecture/wk.

EAP 105   Speaking and Listening I* (3 Hours)
Prerequisites: Appropriate ESL assessment test score.

This English for Academic Purposes course provides non-native English speaking students the opportunity to develop their speaking, listening and pronunciation skills. Students will learn effective techniques for using American English in academic, career and personal settings. This course does not fulfill degree requirements. This is the first speaking course in a sequence of courses leading to ENGL 121. 3 hrs. lecture/wk.

EAP 107   Speaking and Listening II* (3 Hours)
Prerequisites: EAP 105 or appropriate ESL assessment test score.

This English for Academic Purposes course provides non-native English-speaking students the opportunity to expand fluency in speaking, listening and pronunciation. Students will learn effective 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. This course does not fulfill degree requirements. This is the second speaking course in a sequence of courses leading to ENGL 121. 3 hrs lecture/wk.

EAP 111   Writing and Grammar III* (3 Hours)
Prerequisites: EAP 103 or appropriate ESL assessment test score.

This English for Academic Purposes course provides non-native English-speaking students an integrated communicative experience at the high-intermediate level. Students will focus on developing fluency in writing using American English at the paragraph and multiparagraph 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 Hours)
Prerequisites: EAP 111 or appropriate ESL assessment test score.

This English for Academic Purposes course provides non-native English-speaking 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 is the fourth writing and grammar course in the sequence of courses leading to ENGL 121. This course does not fulfill degree requirements. 3 hrs. lecture/wk.

EAP 115   Speaking and Listening III* (3 Hours)
Prerequisites: EAP 107 or appropriate ESL assessment test score.

This English for Academic Purposes course provides non-native English-speaking students the opportunity to enhance fluency in speaking, pronunciation and listening at the upper intermediate level. Students will apply standard American English communication patterns to understand lectures, speak in academic settings and communicate in group interactions. Students will learn effective techniques for presenting formal and informal speeches in specific fields of study and academic debates. This course does not fulfill degree requirements. This is the third speaking course in a sequence of courses leading to ENGL 121. 3 hrs. lecture/wk.

EAP 117   Speaking and Listening IV* (3 Hours)
Prerequisites: EAP 115 or appropriate ESL assessment test score.

This English for Academic Purposes course offers non-native English-speaking students the opportunity to master speaking, pronunciation and listening at an advanced level. Students will apply advanced communication patterns to understand lectures, speak fluently in academic settings and communicate broadly in group interactions. Students will learn effective techniques for applying advanced strategies to process knowledge from specific fields of study and communicate precise meanings of standard American English. This course will allow students the opportunity to give presentations with idiomatic vocabulary from literature, media and research sources. This course does not fulfill degree requirements. 3 hrs. lecture/wk.

EAP 120   Reading and Vocabulary I* (3 Hours)
Prerequisites: Appropriate ESL assessment test score.

This English for Academic Purposes course provides non-native English-speaking students an integrated communication experience at 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 and Vocabulary II* (3 Hours)
Prerequisites: EAP 120 or appropriate ESL assessment test score.

This English for Academic Purposes course provides non-native English-speaking students the opportunity to develop reading fluency, comprehension and vocabulary at the 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 Hours)
Prerequisites: EAP 121 or appropriate ESL assessment test score.

This English for Academic Purposes course provides non-native English-speaking students an integrated communicative experience at the high-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 is the third reading course in the sequence of courses leading to ENGL 121. 3 hrs. lecture/wk.

Entrepreneurship (ENTR)

Courses

ENTR 120   Introduction to Entrepreneurship (2 Hours)
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 Hours)
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 Hours)
Prerequisites: ACCT 111 or ACCT 121.

Upon successful completion of this course, the student should be able to identify and evaluate the various sources available for funding a small business; demonstrate an understanding of financial terminology; read, prepare and analyze a financial statement; and write a loan proposal. In addition, the student should be able to explain the importance of working capital and cash management. The student should also be able to identify financing needs, establish credit policies, and prepare sales forecasts. This course is required for a vocational certificate and associate of applied science degree in business entrepreneurship. 2 hrs. lecture/wk.

ENTR 142   Business Plan (3 Hours)
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. 3 hrs. lecture/wk.

ENTR 160   Legal Issues for Small Business (2 Hours)
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. lecture/wk.

ENTR 180   Opportunity Analysis (2 Hours)
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. lecture/wk.

ENTR 185   Fundamentals of Direct Sales (3 Hours)
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 Hours)
Prerequisites: MKT 230.

In this course, the student should be able to research the franchising method of doing business from the perspective of both the franchisor and the franchisee. The student will analyze independent management efforts necessary for a successful franchise business venture as well as understand the interdependent contractual obligations that are legally binding between the franchisor-franchisee. 3 hrs. lecture/wk.

ENTR 210   Entrepreneurship Internship I* (1 Hour)
Prerequisites: department approval.

Upon the successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. A minimum of 240 hours of on-the-job training is required. This course is required for an associate of science degree in business entrepreneurship. Either ENTR 210 or BUSE 210, Entrepreneurship Internship I, or ENTR 215 or BUSE 215, Entrepreneurship Internship II, is required for a vocational certificate in business entrepreneurship.

ENTR 215   Entrepreneurship Internship II* (1 Hour)
Prerequisites: ENTR 210 and department approval.

Upon the successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. A minimum of 240 hours of on-the-job training is required. This course is required for an associate of applied science degree in business entrepreneurship. Either BUSE 210 or ENTR 210, Entrepreneurship Internship I, or BUSE 215 or ENTR 215, Entrepreneurship Internship II is required for a vocational certificate in business entrepreneurship.

ENTR 220   Entrepreneurial Marketing* (2 Hours)
Prerequisites: MKT 230.

In this course, the student will gain insights essential for marketing an entrepreneurial venture utilizing innovative and financially responsible marketing strategies. The student will analyze marketing philosophies implemented by key successful entrepreneurs. Additionally, the student will prepare a marketing plan to launch the entrepreneurial venture and a marketing plan to implement during the first two years of business operation. 2 hrs. lecture/wk.

ENTR 225   Family Business (3 Hours)
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)

Courses

FASH 121   Fashion Fundamentals (3 Hours)
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. lecture/wk.

FASH 121H   HON: Fashion Fundamentals* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FASH 122   Aesthetics for Merchandising and Design (3 Hours)
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 Hours)
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. 6 hrs. integrated lecture/lab/wk.

FASH 124   Apparel Construction II* (4 Hours)
Prerequisites: FASH 123 or two years of high school apparel construction training or department approval.

Upon successful completion of this course, the student should be able to apply intermediate apparel construction principles, techniques and skills in the production of various garments. This continuation of FASH 123 will focus on the planning and construction of an ensemble of intermediate complexity made from muslin fitting samples, with emphasis on precise fitting alteration. This course is a suggested elective for the Fashion Merchandising program. 6 hrs. integrated lecture/lab/wk.

FASH 125   Visual Merchandising (3 Hours)
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. lecture/wk.

FASH 125H   HON: Visual Merchandising* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FASH 127   Computer Aided Pattern Development* (4 Hours)
Prerequisites: FASH 131.

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 creating digital patterns. 6 hrs. integrated lecture/lab/wk.

FASH 127H   HON: Computer Aided Pattern Development* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FASH 130   Fashion Illustration I (3 Hours)
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. lecture/wk.

FASH 131   Flat Pattern Development* (4 Hours)
Prerequisites: FASH 123.

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. 6 hrs. integrated lecture/lab/wk.

FASH 131H   HON: Flat Pattern Development* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FASH 132   Marketing Communications (3 Hours)
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. lecture/wk. This course is typically taught in the fall semester.

FASH 132H   HON: Marketing Communications* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FASH 133   Computer Aided Apparel Design* (3 Hours)
Prerequisites: FASH 122.

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.

FASH 133H   HON: Computer Aided Apparel Design* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FASH 135   Image Management (1 Hour)
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. lecture/wk.

FASH 143   Tailoring* (4 Hours)
Prerequisites: FASH 124.

Upon successful completion of this course, the student should be able to apply advanced construction principles, techniques and skills in the production of tailored garments. This course is a continuation of FASH 124, Apparel Construction II. The class will use lecture, demonstration and hands-on experience as the student completes a trial muslin for a jacket or coat plus a finished three-piece ensemble of advanced complexity during this class. 6 hrs. integrated lecture/lab/wk.

FASH 143H   HON: Tailoring* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FASH 150   Textiles (3 Hours)
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. lecture/wk.

FASH 150H   HON: Textiles* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FASH 180   Draping* (3 Hours)
Prerequisites: FASH 123.

Upon successful completion of this course, the student should be able to apply fundamental draping techniques in the development of original draped garments. This class will build on the concepts of pattern-making by using 3D fabric manipulation to create 2D garment patterns. The class will use a combination of lecture, demonstration and hands-on experience. 4 hrs. integrated lecture/lab/wk.

FASH 190   Apparel Fit, Alterations and Analysis* (3 Hours)
Prerequisites: FASH 124 and FASH 131.

Upon successful completion of this course, the student should be able to analyze and detect common fit problems in various types of garments and apply the knowledge of construction and pattern making to make changes and solve problems. The class will use a combination of lecture, demonstration and hands on experience to teach the skills necessary for pattern alteration to reach desired fit criteria. 4 hrs. Integrated lecture/lab/wk.

FASH 201   Advanced Garment Alterations* (4 Hours)
Prerequisites: FASH 143 and FASH 190.

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 re-size formal and evening garments to a particular body. 6 hrs. Integrated lecture, lab/wk.

FASH 215   Field Study: MAGIC Trade Show* (1 Hour)
Prerequisites: FASH 121.

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.

FASH 224   History of Costume (3 Hours)
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. lecture/wk.

FASH 224H   HON: History of Costume* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FASH 225   Store Planning* (3 Hours)
Prerequisites: FASH 125.

Upon successful completion of this course, the student should be able to demonstrate the skills needed to plan and execute the display methods and store planning concepts for promoting merchandise within a large or small store interior. These plans will use the student's understanding of design, fixtures, traffic patterns, floor sets, graphics/signage and materials. This course is a requirement for the visual merchandising certificate. 3 hrs. lecture/wk. This course is typically taught in the spring semester.

FASH 231   Merchandising Planning and Control* (3 Hours)
Prerequisites: MATH 120.

Upon successful completion of this course, the student should be able to describe the management structure of retail merchandising operations, contrast merchandising functions among various types of retail operations, explain the buying process, explain the financial operations of retail merchandising and apply these principles in computer-simulated case situations. 3 hrs. lecture/wk. This course is typically taught in the spring semester.

FASH 242   Product Knowledge for Merchandisers (3 Hours)
Upon successful completion of this course, the student should be able to evaluate a wide range of textile and nontextile products, from diamonds to table top, on the basis of specialized product knowledge. In addition, the student should be able to research brands. 3 hrs. lecture/wk.

FASH 242H   HON: Product Knowledge for Merchandisers* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FASH 255   Apparel Specification Technology* (3 Hours)
Prerequisites: FASH 131 and FASH 133.

Upon successful completion of this course, the student should be able to define the critical components of an apparel technical package and its importance in the product development process. Students will use industry product lifecycle management software to develop a detailed apparel technical package. The class will use lecture, demonstration and hands on experience. 3 hrs. lecture/wk.

FASH 268   Field Study: The Market Center* (3 Hours)
Prerequisites: FASH 121.

Upon successful completion of this course, the student should be able to identify and distinguish between national, regional and local retail market centers. In addition, the student should be able to explain the importance of market centers, analyze the marketing mix of selected retailers and describe uses of fashion auxiliary services. This is a suggested course for the Fashion Merchandising program. 3 hrs. lecture/wk. This course is typically taught in the spring semester.

FASH 270   Apparel Product Development* (3 Hours)
Prerequisites: FASH 123 and FASH 130 and FASH 131 and FASH 133.

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. 4 hrs. integrated lecture/lab/wk.

FASH 275   Fashion Portfolio Development* (1 Hour)
Prerequisites: FASH 121 and FASH 124 and FASH 270.

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. 1 hr. lecture/wk.

FASH 277   Fashion Seminar: Career Options (2 Hours)
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. lecture/wk.

FASH 280   Capstone: Industry Topics* (3 Hours)
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.

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 Hour)

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 Hour)

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 Hour)

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 Hour)

Prerequisites: FASH 283 and FASH 284 and FASH 285 and 40 hours toward degree in Fashion Merchandising.

Upon successful completion of this course, the student will have received 225 hours of work experience in an approved training environment. The student should be able to demonstrate the skills required in an entry level management position. An average of 15 hours on the job training/wk. is required.

FASH 291   Independent Study* (1-7 Hour)

Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Film and Media Studies (FMS)

Courses

FMS 100   Intro to Film (3 Hours)

The holistic intent of this course is to introduce students to film as an art form that goes beyond entertainment. This is an introduction to film through analyzing and thinking critically about film as a visual art medium. Students will analyze a film's impact on society and the use of film as a medium of expression and will watch films in order to evaluate the strategies used by the filmmaker to create meaning for the viewer. Students will read and interpret basic signs, syntaxes and structures of cinematic language; locate film in historical, cultural, political and social contexts; and critique film using various methodologies. Students will also recognize and identify filmmaking as a business by defining stages of filmmaking, the various employed positions and the duties used in the making of a film. They also will evaluate the effect of the film industry on the society within which films are being made. 3 hrs. lecture/wk.

FMS 200   Intro to Filmmaking and Media Aesthetics (3 Hours)

This is an introduction to filmmaking and media aesthetics through practical application of cinematic language and techniques, theories and methodologies. The holistic intent of this course is for students to learn basic filmmaking techniques while also developing an understanding of film as a visual art medium that goes beyond entertainment. Students will be introduced to the concepts of time, space, composition, movement, editing, light, color and sound. This course is a practical emphasis on learning how to creatively apply elements of design, camera lens and sound recording principles to create films. Examples of these aspects of film and associated media will be examined and discussed in depth. 6 hrs. integrated lecture/lab/wk.

FMS 292   Special Topics: (1-3 Hour)

This course periodically offers specialized or advanced discipline-specific content related to the study of Film and Media, not usually taught in the curriculum. Due to the breadth and depth of the discipline, this course may expand upon a topic introduced in a current course, synthesize topics that cross-cut existing courses, or explore a topic not addressed currently in the Film and Media Studies curriculum. Students may repeat Special Topics in Film and Media Studies for credit but only on different topics.

Fire Services Administration (FIRE)

Courses

FIRE 120   Fire Academy* (12 Hours)
Prerequisites: HPER 240 and department approval (Selective Application, call 913-469-4405 for more information).

This course provides cognitive, psychomotor and affective instruction for those students seeking certification as a firefighter 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. 15 hrs. integrated lecture/lab/wk. This course is typically taught in the fall and spring semesters only.

FIRE 136   Fire and Emergency Management* (3 Hours)
Prerequisites: FIRE 110 or FIRE 120.

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 Hours)
Prerequisites: FIRE 110 or FIRE 120.

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 Hours)
Prerequisites: FIRE 110 or FIRE 120.

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. lecture/wk. This course is typically taught in the fall semester.

FIRE 201   Leadership in the Fire Service* (3 Hours)
Prerequisites: FIRE 110 or FIRE 120.

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 Hours)
Prerequisites: FIRE 110 or FIRE 120.

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 Hours)
Prerequisites: FIRE 110 or FIRE 120.

The law as it pertains to the fire service will be explained, along with tort law and business law. 3 hrs. lecture/wk. This course is typically taught in the fall semester.

FIRE 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Floriculture (FLR)

Courses

FLR 130   Principles of Traditional Design (3 Hours)
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.

FLR 150   Contemporary Design Styles (3 Hours)
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.

FLR 200   Plants for Interior Design (3 Hours)
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.

FLR 220   Wedding Design* (3 Hours)
Prerequisites: FLR 130 or FLR 150.

This course will focus on traditional and contemporary wedding designs. Because weddings often constitute a large portion of a florist's business, it is imperative that students become proficient in various wedding designs, and be trained in many specialized arranging techniques. The course covers steps in creating the bridal bouquet, including round, crescent, cascade, triangle, and hand tied. Corsage construction, hair pieces, and other accessories will be discussed. Marketing and promotional efforts to build the wedding business will also be discussed. 2 hrs. lecture 3 hrs instructional lab/wk.

FLR 250   Special Event Designs* (3 Hours)
Prerequisites: FLR 130 or FLR 150.

This course will focus on large scale designs to include large buffet florals, themed designs, sympathy designs, large altar and reception florals. 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. The student will learn to create large scale designs within a specified budget. 2 hrs. lecture and instructional 3 hrs. lab/wk.

FLR 270   Retail Flower Shop Operations* (3 Hours)
Prerequisites: FLR 130 or FLR 150.

This course will focus on the retail operation of a flower shop. Students will explore the various types of flower shops. Topics will include marketing strategies, advertising and promotion, selling skills and merchandising. In addition, students will learn about employee relations, delivery services, public relations, management, florist computer software, buying and pricing. 3 hrs. lecture/wk.

Foreign Language (FL)

Courses

FL 116   Elementary Latin I (3 Hours)
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. lecture/wk. This course is not offered in the spring semester.

FL 117   Elementary Latin II* (3 Hours)
Prerequisites: FL 116 or one year of high-school Latin.

This course will complete the presentation of basic Latin vocabulary and grammar. Fundamental grammar concepts, extensive word study for English vocabulary growth and the lasting contributions of Roman society to Western civilization will be emphasized. 3 hrs. lecture/wk. This course is taught in the spring semester.

FL 120   Elementary German I (5 Hours)
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. lecture/wk.

FL 121   Elementary German II* (5 Hours)
Prerequisites: FL 120 or one year of high-school German.

This course will continue the presentation of the vocabulary and basic structural patterns begun in Elementary German I with continued emphasis on the development of listening comprehension, speaking, reading and writing skills. 5 hrs. lecture/wk.

FL 121H   HON: Elementary German II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 123   Elementary Hebrew I (5 Hours)
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.

FL 130   Elementary Spanish I (5 Hours) nbsp;
In this basic course, students will study Spanish grammar, conversation, composition and the culture of Spanish-speaking countries. 5 hrs. lecture/wk.

FL 130H   HON: Elementary Spanish I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 131   Elementary Spanish II* (5 Hours) nbsp;
Prerequisites: FL 130 with a grade of "C" or higher or two years of high-school Spanish; or the appropriate score on the placement test.

This course will continue the presentation of the material introduced in Elementary Spanish I. Graded reading selections will be added as a basis for conversation and composition in discussion periods. Placement test recommended: can be taken at the Testing Center. 5 hrs. lecture/wk.

FL 131H   HON: Elementary Spanish II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 135   Basic Spanish for Hospitality Management (3 Hours)
This course is designed to provide students with basic Spanish for a career in the hospitality industry. The course covers greetings, courtesy phrases and terminology related to hotels, kitchens and restaurants. Students will learn phrases to effectively interact with Spanish-speaking staff. 3 hrs. lecture/wk.

FL 140   Elementary French I (5 Hours) nbsp;
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. lecture/wk.

FL 140H   HON: Elementary French I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 141   Elementary French II* (5 Hours) nbsp;
Prerequisites: FL 140 or one year of high-school French.

This course continues the presentation of the material introduced in Elementary French I. Graded reading selections will be used as the basis for conversation. Placement test recommended: can be taken at the Testing Center. 5 hrs. lecture/wk.

FL 141H   HON: Elem. French II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 145   Field Study in Russian Language Culture (2 Hours)
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.

FL 150   Elementary Russian I (5 Hours)
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. lecture/wk.

FL 150H   HON: Elementary Russian I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 151   Elementary Russian II* (5 Hours)
Prerequisites: FL 150 or one year of high-school Russian.

This course completes the presentation begun in Elementary Russian I. Students will gain listening comprehension, speaking, reading and writing skills appropriate to a second-level course. This course is taught in the spring semester. 5 hrs. lecture/wk.

FL 155   Elementary Arabic I (5 Hours)
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.

FL 156   Elementary Arabic II* (5 Hours)
Prerequisites: FL 155.

This course will continue the presentation of vocabulary and basic structural patterns begun in Elementary Arabic I. There will be a continuation of comprehension, listening, reading, writing from an everyday use emphasis. This course is taught in the spring semester. 5 hrs. lecture/wk.

FL 160   Elementary Italian I (5 Hours)
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. lecture/wk.

FL 165   Elementary Chinese I (5 Hours)
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. lecture/wk.

FL 166   Elementary Chinese II* (5 Hours)
Prerequisites: FL 165 or equivalent college-level course with a grade of "D" or higher or one year of high-school Chinese with a grade of "D" or higher.

This course offers a continuation of Elementary Chinese I, emphasizing the sounds, vocabulary, grammar, usage, characters and reading of the Chinese language. Students will develop more advanced conversational skills and cultural understanding. 5 hrs. lecture/wk.

FL 170   Elementary Japanese I (5 Hours)
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. lecture/wk.

FL 171   Elementary Japanese II* (5 Hours)
Prerequisites: FL 170 or one year of high-school Japanese.

A continuation of Elementary Japanese I, this course will emphasize the sounds, vocabulary, grammar, usage and reading of the Japanese language. Focus is on developing more advanced conversational skills and cultural understanding. This course is typically taught in the spring semester. 5 hrs. lecture/wk.

FL 171H   HON: Elementary Japanese II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 175   Elementary Brazilian Portuguese I (5 Hours)
In this basic course, students will study Portuguese grammar, conversation, composition and the culture of Brazil. 5 hrs. lecture/wk.

FL 178   Intermediate Russian I* (3 Hours)
Prerequisites: FL 151 or two years of high-school Russian.

This course will emphasize vocabulary development and more advanced study of Russian grammar. Students will practice reading, listening comprehension, speaking and writing at the intermediate level. 3 hrs. lecture/wk.

FL 178H   HON: Intermediate Russian I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 179   Intermediate Russian II* (3 Hours)
Prerequisites: FL 178 or three years of high-school Russian.

Students will study Russian language and culture that would prepare them to travel in a Russian-speaking country and engage in simple conversation with the citizens. 3 hrs. lecture/wk.

FL 179H   HON: Intermediate Russian II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 180   Elementary American Sign Language I (3 Hours)
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 Hours)
Prerequisites: FL 180 or INTR 120 with a grade of "C" or higher.

This course will focus on continued development of elementary American Sign Language skills beyond those taught in Elementary ASL I. Students will work on developing communication competencies, concentrating on comprehension and production skills. Information about the linguistic and cultural features will be included in the context of language learning experiences. 6 hrs. integrated lecture-lab/wk. FL 181 and ASL 121 are the same course. Do not enroll in both.

FL 182   Intermediate Japanese I* (5 Hours)
Prerequisites: FL 171 or two years of high-school Japanese and department approval.

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 Hours)
Prerequisites: FL182 or three years of high-school Japanese and department approval.

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 Hours)
Prerequisites: FL 166 or equivalent.

This course is a continuation of study of the Chinese language and culture, emphasizing the sounds, vocabulary, grammar, usage and readings of the Chinese language. Focus will be on developing more advanced conversational skills by increasing vocabulary and variety of sentence patterns. Cultural understanding will also be stressed. 3 hrs. lecture/wk.

FL 193   Intermediate Chinese II* (3 Hours)
Prerequisites: FL 192 or equivalent.

This course is a continuation of study of the intermediate Chinese language and culture, emphasizing the sounds, vocabulary, grammar, usage and readings of the Chinese language. Focus will be on developing more advanced conversational skills by increasing vocabulary and variety of sentence patterns. Cultural understanding will also be stressed. 3 hrs. lecture/wk.

FL 193H   HON: Intermediate Chinese II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 195   Intermediate Arabic I* (3 Hours)
Prerequisites: FL 156.

This course is an in-depth study of Arabic grammar and vocabulary. The four skills of speaking, reading, writing, and listening will be covered. This course aims to develop an intermediate level of proficiency in Arabic. 3 hrs. lecture/wk.

FL 195H   HON: Intermediate Arabic I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 196   Intermediate Arabic II* (3 Hours)
Prerequisites: FL 195.

An in-depth study of Arabic grammar and vocabulary. The four skills of speaking, reading, writing, and listening will be covered. This course aims to develop an intermediate level of proficiency in Arabic. 3 hrs. lecture/wk.

FL 220   Intermediate German I* (3 Hours)
Prerequisites: FL 121 or two years of high-school German.

This class will emphasize vocabulary building and grammar review primarily through extensive reading of German texts. There will be additional practice in listening comprehension, speaking and writing. Placement test recommended: can be taken at the Testing Center. 3 hrs. lecture/wk.

FL 220H   HON: Intermediate German I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 221   Intermediate German II* (3 Hours)
Prerequisites: FL 220 or three years of high-school German.

This class will further expand the mastery of German vocabulary and structure through extensive reading of more advanced texts with additional practice in listening comprehension, speaking and writing. Placement test recommended: can be taken at the Testing Center. 3 hrs. lecture/wk.

FL 221H   HON: Intermediate German II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 223   Conversational German* (2 Hours)
Prerequisites: FL 121 or two years of high-school German.

By applying vocabulary and structures presented in the text and handouts and by applying knowledge gained in a systematic review of German, the successful student will be able to communicate in German in situations that typically arise while traveling in a German-speaking country. Placement test recommended: can be taken at the Testing Center. 2 hrs. lecture/wk.

FL 223H   HON: Conversational German* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 230   Intermediate Spanish I* (3 Hours) nbsp;
Prerequisites: FL 131 with a grade of "C" or higher or three years of high-school Spanish or the appropriate score on the placement test.

This course refines grammar, builds vocabulary, increases understanding of Hispanic culture, and provides practice designed to improve speaking fluency. It includes composition and conversation. Placement test recommended: can be taken at the Testing Center. 3 hrs. lecture/wk.

FL 230H   HON: Intermediate Spanish I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 231   Intermediate Spanish II* (3 Hours)
Prerequisites: FL 230 with a grade of "C" or higher or or four years of high-school Spanish or the appropriate score on the placement test.

This course refines grammar, builds vocabulary, increases understanding of Hispanic culture, and provides practice designed to improve speaking fluency. It includes more advanced readings as a source for composition and conversation. Placement test recommended: can be taken at the Testing Center. 3 hrs. lecture/wk.

FL 231H   HON: Intermediate Spanish II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 234   Conversational Spanish* (2 Hours)
Prerequisites: FL 230 with a grade of "B" or higher; or FL 231 with a grade of "C" or higher; or four years of high-school Spanish; or the score equivalent to FL 231 on the placement test.

This course enhances students' ability to express themselves orally in Spanish through vocabulary building and reiteration of essential grammatical structures. The vocabulary emphasizes everyday life situations and current events. Placement test recommended: can be taken in the Testing Center. 2 hrs. lecture/wk.

FL 234H   HON: Conversational Spanish* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 240   Intermediate French I* (3 Hours)
Prerequisites: FL 141 or two years of high-school French.

In this course, students begin a more in-depth study of French grammar and vocabulary as they improve their mastery of the four communicative skills (listening, speaking, reading and writing). Reading assignments (from literary, journalistic and Internet sources) will be more advanced and writing assignments will be more extensive at the Intermediate level. Placement test recommended: can be taken at the Testing Center. 3 hrs. lecture/wk.

FL 240H   HON: Intermediate French I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 241   Intermediate French II* (3 Hours)
Prerequisites: FL 240 or three years of high-school French.

In this class, students continue their in-depth study of French grammar and improvement of vocabulary. All four communication skills (listening, speaking, reading, and writing) continue to be emphasized as reading assignments, compositions, listening comprehension exercises and class discussion become more complex. Placement test recommended. Go to the Testing Center or to the Language Resource Center. 3 hrs. lecture/wk.

FL 241H   HON: Intermediate French II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 243   Conversational French* (2 Hours)
Prerequisites: FL 141 or two years of high-school French.

This course is designed to build spontaneous speaking ability. Everyday situations and current events will be discussed in class. Placement test recommended. Go to the Testing Center or to the Language Resource Center. 2 hrs. lectute/wk.

FL 243H   HON: Conversational French* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 248   Conversational Arabic* (2 Hours)
Prerequisites: FL 156.

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.

FL 248H   HON: Conversational Arabic* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

FL 270   Intermediate American Sign Language I* (3 Hours)
Prerequisites: FL 181 or INTR 121.

This course will focus on the development of intermediate American Sign Language communication skills. Emphasis will be on teaching in context comprehension skills and linguistic features of the language. 6 hrs. integrated lecture/lab/wk. INTR 122, FL 270 and ASL 122 are the same courses; only enroll in one.

FL 288   Spanish for Heritage and Advanced Speakers of Spanish* (3 Hours)
Prerequisites: Department approval.

This course is specifically offered to students who learned to speak Spanish at home, but who have had little or no formal Spanish grammar training. Students will develop their reading, speaking, listening and writing skills. Students will learn about the cultures of Spanish-speaking countries. The course would also be offered to students who have learned Spanish as a second language and read, speak, listen and write at an advanced level. 3 hrs. lecture/wk.

FL 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Game Development (GAME)

Courses

GAME 102   The Business of Games (3 Hours)
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.

GAME 104   Introduction to Game Development (1 Hour)
This course covers the basics of game design and production. Topics include the fundamentals of managing game development, development of a plan for a game, the game production process, the history and business of games, and the various job roles in the industry. 1hr. lecture/wk.

GAME 105   Beginning Game Creation (3 Hours)
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. Topics will include learning how to build games with a game development environment, the basic ideas of game design and an introduction to building 3D levels. Students should learn how to build a variety of games, include sound effects and simple animation effects in games, use simple analysis tools to evaluate games, build a 3D level, and create an original game as a term project. 3 hrs. lecture/wk.

GAME 120   Game Design I* (4 Hours)
Prerequisites: GAME 104 and GAME 105.

This course is designed to give people who are interested in creating games the foundations they need to create fun, engaging experiences for players. Students will learn the basics behind creating compelling and entertaining experiences for players. The four key focuses will be on fun, theme, mechanics, and essential experience. During the course students will create a complete game. 4 hrs. lecture/wk.

GAME 121   Game Programming I* (4 Hours)
Prerequisites: CIS 142 and GAME 104 and GAME 105.

Corequisites: CS 201.

This course is designed to present skills and provide hands-on experience required to create basic three-dimensional games. Typical topics will include 3D engine evaluation, differences between platforms, core game logic, proper use of external assets, and publishing. Typical tasks will include configuration and installation of 3D engines, creating several games, integration of non-programming assets, and exercises that will highlight important game programming concepts. 5 hrs. integrated lecture/lab/wk.

GAME 131   User-Centered Design* (4 Hours)
Prerequisites: CIS 142.

Corequisites: GAME 121.

This course will cover the uses of custom-built tools in game development. It will also cover how to gather the requirements for tools and build them. 3 hrs. lecture and 2 hrs. open lab/wk.

GAME 132   Game Level Editing* (4 Hours)
Prerequisites: GAME 105.

This course will cover how to create a prototype level, place interactive elements, and script the general gameplay and flow of the level. Upon successful completion of the course students will have created a fully playable game level. 5 hrs. integrated lecture/lab/wk.

GAME 134   Game World Creation* (4 Hours)
Prerequisites: GAME 105.

In this course students will study what exactly world, region, and level means to different games. Students will also create a game world, region and level during the semester using current industry tools. 4 hrs. lecture/wk.

GAME 136   Game Prototyping* (4 Hours)
Prerequisites: GAME 105.

This course will cover the best practices and techniques for rapidly creating prototypes. Students will learn how to focus prototyping efforts on specific game play areas and how to evaluate the success and failure of a prototype. Multiple prototypes will be created during the semester. 5 hrs. integrated lecture/lab/wk.

GAME 180   Artificial Intelligence for Games* (3 Hours)
Prerequisites: CIS 142 and GAME 105.

Upon successful completion of this course, students should be able to deconstruct simple program scripts within a game engine illustrating introductory concepts in artificial intelligence (AI) as applied to computer games. The students 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.

GAME 180H   HON: Artificial Intelligence/Games* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

GAME 220   Game Design II* (4 Hours)
Prerequisites: GAME 120.

In this course students will learn how to use mechanics to create and control feedback systems, emergent gameplay, and establish game balance. This course will also cover how to handle rewards and punishment, how interface design can make or break a game, and how games can be created as sports. 4 hrs. lecture/wk.

GAME 221   Game Programming II* (4 Hours)
Prerequisites: GAME 121.

Corequisites: CS 236.

This course is designed to give students a deeper understanding of 3D game programming techniques. Students will study multi-threading, networking, use of analytic software, shader basics and user-generated content systems. Students will create a 3D game using all of these techniques. 5 hrs. integrated lecture/lab/wk.

GAME 235   Game Quality Assurance* (2 Hours)
Prerequisites: GAME 105.

In this course, students are introduced to the concepts and skills involved in testing video games. The course emphasizes the importance of testing and various methods and approaches used in game testing. This course will also cover how to correctly write up and report errors found in games. 2 hrs. lecture/wk.

GAME 238   Serious Game Design* (3 Hours)
Prerequisites: GAME 220.

In this course, students will examine the various aspects of serious games and how games have outgrown being just a source of entertainment. Students will study educational games, training simulations, and games for change. Students will also complete a basic educational game prototype. 3 hrs. lecture/wk.

GAME 242   Agile Game Development* (3 Hours)
Prerequisites: GAME 105 and department approval.

This course will cover the Agile software development methodology using Scrum. It will also cover how Scrum can be applied specifically to the processes used in game development. 3 hrs. lecture/wk.

GAME 250   Game Capstone* (4 Hours)
Prerequisites: GAME 180 and GAME 220 or GAME 221 and GAME 242.

This course is designed for students to apply the foundations of game design and game programming to a significant original game. Students will 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 and 2 hrs. open lab/wk.

GAME 255   Mobile Game Programming* (4 Hours)
Prerequisites: GAME 221.

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. 5 hrs. integrated lecture/lab/wk.

GAME 292   Special Topics:* (3 Hours)
Prerequisites: GAME 220 or GAME 221.

This course presents specialized topics in game development that are not available in the regularly offered curriculum. Special Topics may be repeated for credit, but only on different topics.

Geoscience (GEOS)

Courses

GEOS 130   General Geology (5 Hours) nbsp;
In this introductory course the students will survey the geologic processes that form and shape the earth over geologic time using the models of the rock cycle, the hydrologic cycle and the tectonic cycle. In the laboratory they will conduct hands-on activities designed to enhance and reinforce the geologic concepts they have studied. 4 hrs. lecture, 3 hrs. lab/wk.

GEOS 130H   HON: General Geology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

GEOS 140   Physical Geography (3 Hours)
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. lecture/wk.

GEOS 140H   HON: Physical Geography* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

GEOS 141   Physical Geography Lab* (2 Hours)
Prerequisites or corequisites: GEOS 140 or the equivalent.

Students in this course will practice their knowledge of physical geography through the collection and analysis of atmospheric data and the identification and interpretation of landforms and biological patterns as depicted on topographic maps and remotely sensed imagery. 4 hrs. lab/wk.

GEOS 145   World Regional Geography (3 Hours) nbsp;
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.

GEOS 145H   HON: World Regional Geography* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

GEOS 214   Introduction to Teaching Math and Science I* (1 Hour)
Prerequisites: MATH 171 with a grade of "C" or higher OR appropriate score on the math placement test OR department approval.

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. 1.25 hrs. lecture/wk.

GEOS 215   Introduction to Teaching Math and Science II* (1 Hour)
Prerequisites: ASTR 214 or BIOL 214 or CHEM 214 or GEOS 214 or MATH 214 or PHYS 214 or PSCI 214 with a grade of "C" or higher.

Students learn about the middle school environment and work on math and science inquiry-based lesson analysis, design and assessment. Student partners will plan and teach three inquiry-based lessons in a middle school. The course emphasizes writing 5E lesson plans with a focus on the importance of using appropriate questioning and assessment strategies throughout the lesson, as well as how to analyze and modify a lesson based on personal reflections and observer feedback. By the completion of the course, students should be able to reflect on their personal suitability/interest in teaching secondary math or science, and develop a feasible pathway to a career in teaching. MATH 215, ASTR 215, BIOL 215, CHEM 215, GEOS 215, PHYS 215 and PSCI 215 are the same course; enroll in only one. 1.25 hrs. lecture/wk.

Global & International Studies (GIST)

Courses

GIST 101   Study Abroad Reflections* (1-3 Hour)
Prerequisites or corequisites: Department approval; student must be enrolled in the study abroad program.

This course will assist students in maximizing their study abroad experience. In this course, students will reflect on the three phases of study abroad: pre-departure, being abroad and return. The topics covered in this course include general administrative and logistical issues, intercultural interactions, global competencies, culture shock, integration of study abroad experiences with current life and future plans, and the impact of international/intercultural experiences on one's self and one's worldview. Students through reflection on their study abroad experience will identify new skills and growth, and articulate how these will enhance their professional, personal and academic goals.

GIST 250   Introduction to Globalization (3 Hours)
This course will provide students with the origins and current implications of globalization. In this course, students will examine the question "what is globalization?" The topics covered include economic and political globalization as well as global security, culture and environmental issues. The goal of this course is to introduce students to the variation in global issues that influence national policy and our daily lives. 3 hrs. lecture/wk.

GIST 250H   HON: Introduction to Globalization* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

Graphic Design (GDES)

Courses

GDES 120   Introduction to Graphic Design (3 Hours)
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.

GDES 130   Drawing and Media Methods I* (3 Hours)
Prerequisites: GDES 120 and ART 124 and CDTP 135 and CDTP 140 and CDTP 145.

This course will provide instruction in perceptual methods, perspective theory and drawing techniques as they apply to visual analysis and visual problem-solving in graphic design. 6 hrs. integrated lecture/lab/wk.

GDES 131   Drawing and Media Methods II* (3 Hours)
Prerequisites: GDES 130.

This course is a continuation of Drawing and Media Methods I, with emphasis on the creative application of perspective theory, perceptual skill and drawing methods. Drawing methods and rendering techniques will be applied to visual problem-solving processes and the communication of design concepts. 6 hrs. integrated lecture/lab/wk.

GDES 131H   HON: Drawing and Media Methods II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

GDES 132   Typography* (3 Hours)
Prerequisites: ART 124 and GDES 120 and CDTP 135 and CDTP 140 and CDTP 145.

This course will provide instruction in the basic principles of contemporary typographic design. Information concerning typography, from traditional letterpress through digital type design and typesetting, will be included. The course content will emphasize effective methods of communicating to a mass audience through the printed letter, word, line and page. Working knowledge of QuarkXpress and Adobe InDesign required. 6 hrs. integrated lecture/lab/wk.

GDES 132H   HON: Typography* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

GDES 134   Layout Design* (3 Hours)
Prerequisites: GDES 132.

This course will provide a basic study of layout elements. Students will acquire the skills necessary to produce layouts. These skills include photographic indication techniques, comp lettering, advertising and editorial grid systems and electronic page design. This course is typically offered in the spring semester only. 6 hrs. integrated lecture/lab/wk.

GDES 134H   HON: Layout Design* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

GDES 140   Technical Processes* (3 Hours)
Prerequisites: PHOT 121 and CDTP 135 and CDTP 140 and CDTP 145.

This course covers digital prepress applications, scanning, image manipulation and color output devices. The transition from conventional to digital production will be covered. Analysis of output and file management and the understanding of proofing systems will be covered. Proper usage of peripheral equipment will be emphasized. 6 hrs. integrated lecture/lab/wk.

GDES 230   Drawing and Media Methods 3* (3 Hours)
Prerequisites: GDES 131 and GDES 132 and GDES 134.

This course will provide an understanding of the application of illustration to graphic design. Visual problem-solving processes acquired in Drawing and Media Methods 2 will be further developed through problems in image composition emphasizing expressive communication. Techniques in traditional and digital media are explored. This course is typically taught in the fall semester only. 6 hrs. integrated lecture/lab/wk.

GDES 231   Advanced Typography* (3 Hours)
Prerequisites: GDES 134.

This course is a continuation of Layout Design. Emphasis will be on typographic solutions that explore verbal/visual messages. Projects include designs for publication, such as posters, brochures, packaging and graphic campaigns. Typography as a functional and experimental medium will be stressed. Design problem-solving for a diverse range of specifications, including audience, client needs and budget constraints, are included. Traditional and digital tools will be incorporated to produce comprehensives. This course is typically offered in the fall semester only. Working knowledge of Macromedia Dreamweaver is required. 6 hrs. integrated lecture/lab/wk.

GDES 231H   HON: Advanced Typography* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

GDES 235   Production Methods* (3 Hours)
Prerequisites: GDES 134 and GDES 140.

This course will provide the fundamentals of preparing art for reproduction. Traditional camera-ready art techniques and digital prepress production methods will be emphasized. This course is typically offered in the fall semester only. 6 hrs. integrated lecture/lab/wk.

GDES 236   Electronic Production* (3 Hours)
Prerequisites: GDES 230 and GDES 231 and GDES 235.

This course is a continuation of the Production Methods course, providing experience in digital prepress and electronic production techniques. The student will apply production skills to problems of professional scope and complexity, including specialty processes, trapping and color separation. Preparation of graphic files for screen presentation and for the Web will be explored. This course is typically offered in the spring semester only. 6 hrs. integrated lecture/lab/wk.

GDES 244   Communication Systems* (3 Hours)
Prerequisites: GDES 230 and GDES 231 and GDES 235.

This course will explore the scope and potential of graphic design as a vehicle for visual communication in contemporary society. Signs and symbols, as well as communicative power of typographic, hand graphic and photographic modes, will be studied. Traditional and electronic methods will be used to develop projects. This course is typically offered in the spring semester only. 6 hrs. integrated lecture/lab/wk.

GDES 245   Advanced Design Practice* (3 Hours)
Prerequisites: GDES 230 and GDES 231 and GDES 235.

This course will focus on the use of the student's total design capability and technical knowledge in solving graphic design problems of professional scope and complexity. Students will have the opportunity to work with three art directors and produce three professional projects for potential inclusion in their portfolios. This course is typically offered in the spring semester only. 6 hrs. integrated lecture/lab/wk.

GDES 272   Professional Preparation* (3 Hours)
Prerequisites: GDES 230 and GDES 231 and GDES 235. The student must have completed all required studio courses in the graphic design program prior to the semester for which he or she is enrolling in this course or be co-enrolled in all fourth-semester studio courses.

This course will provide graphic design majors instruction in the organization and presentation of his or her work in a portfolio format of professional quality. A portfolio, digital portfolio archive, self promo, resume and business ensemble will be produced. Instruction in interviewing techniques and employment searches will also be provided. 6 hrs. integrated lecture/lab/wk.

GDES 275   Graphic Design Internship* (1 Hour)
Prerequisites: Graphic design faculty review committee approval.

Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the skills learned in the graphic design program. Student interns will complete a minimum of 180 hours on the job and will be compensated with at least the minimum hourly wage.

GDES 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Health Care (HC)

Courses

HC 101   Introduction to Health Care Delivery (3 Hours)
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 Hours)
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.

HC 125H   HON: International Awareness Field Study* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HC 130   Medical Terminology for Healthcare Professions (3 Hours) nbsp;
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 Info Systems (HCIS)

Courses

HCIS 230   Introduction to Health Information Systems (2 Hours)
This course provides an overview of the major concepts of health information systems for individuals with backgrounds in information technology (IT) or healthcare who are considering a transition into health information systems. 2 hrs. lecture/wk.

HCIS 255   Technology Concepts in Healthcare (2 Hours)
This course provides a basic overview of computing concepts related to the healthcare sector. Topics include computing terminology, computer architecture, and networking and data communication. The design and development of a large healthcare computing system is discussed, including the electronic health record. 2 hrs. lecture/wk.

HCIS 261   Networking and Health Information Exchange (2 Hours)
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 Hours)
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 (HIT) Systems (2 Hours)
This course is powered by Cerner architecture to give students an opportunity to work with real technology used in the healthcare environment. This course focuses on the end user experience with emphasis also placed on standards, system usability, security and integration. 2 hrs. integrated lecture/lab/wk.

HCIS 264   Configuration and Implementation of Electronic Health Records (2 Hours)
This course is powered by Cerner architecture to give students an opportunity to experience real-world tasks in the role of a configuration/implementation analyst in the health information technology (HIT) workplace. This course focuses on designing and building a system with emphasis placed on implementation and configuration. 2 hrs. integrated lecture/lab/wk.

HCIS 265   Installation and Maintenance of Health IT Systems (2 Hours)
This course is powered by Cerner architecture to give students an opportunity to experience real-world tasks typically performed by an electronic health record (EHR) system administrator or support technician. Topics include testing prior to implementation, system configuration and system support. 2 hrs. integrated lecture/lab/wk.

HCIS 267   EHR Design, Functionality and Usability (3 Hours)
This course discusses human factors associated with designing and implementing health information systems (HIS). Concepts of usability and the effects of new technology and workflow redesign on downstream processes, such as clinical decision support, will be covered. This course provides an overview of the most utilized 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.

HCIS 270   Health Information Systems Internship* (2 Hours)
Prerequisites or corequisites: Enrollment in Health Information Systems (HCIS) coursework and Department approval (It is recommended students complete 10 credit hours of HCIS coursework prior to enrollment.)

Students will work in an approved training situation under instructional supervision. The internship is designed to give the student the opportunity to use the knowledge and skills acquired in the healthcare information systems (HCIS) courses. An average of 40-60 onsite hours will be required along with class assignments for a total of 90 hrs./semester.

HCIS 271   The Culture of Healthcare (2 Hours)
This course introduces students to job expectations in healthcare settings. Topics also include the organization of care inside a practice setting, privacy laws, the changing environment of healthcare delivery, and professional and ethical issues. 2 hrs. lecture/wk.

HCIS 272   Terminology in Health Care Settings (2 Hours)
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 in Healthcare (2 Hours)
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 in healthcare. 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 Analysis and Redesign (2 Hours)
This course introduces healthcare workflow 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 Hours)
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 277   Training and Instructional Design (2 Hours)
This course provides participants with essential knowledge and skills to deliver training to adult learners implementing electronic health records (EHRs) in a variety of healthcare settings. The Instructional Systems Design (ISD) model, which includes analysis of the learner and learning environment, design and development of customized education, implementation of the training plan and evaluation of the training program's effectiveness, will be used. 2 hrs lecture/wk.

HCIS 292   Special Topics: (1-2 Hour)
This course periodically presents specialized topics in Health Information Systems (HIS) that are not available in the regularly offered curriculum. Special Topics may be repeated for credit, but only on different topics.

Health Care Interpreting (HCI)

Courses

HCI 110   Introduction to Interpreting* (3 Hours)
Prerequisites: Selective admissions approval.

Corequisites: HCI 120.

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.

HCI 120   Interpreting Skills I* (3 Hours)
Prerequisites: Selective admissions approval.

Corequisites: HCI 110.

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/wk. This course is taught in the fall semester only.

HCI 130   Interpreting Skills II* (3 Hours)
Prerequisites: Selective admissions approval and HCI 110 and HCI 120.

Corequisites: HCI 140 (All courses must be completed with a grade of "C" or higher.)

This course develops students' skills in simultaneous interpreting and written translation. In addition, through classroom, lab and field experiences, students practice the three interpretation modes they have learned in the program and improve all aspects of their interpreting while forming good professional habits. Self-assessment, professional growth, and development of a personal philosophy of interpreting are stressed. This course is taught in English with some Spanish terminology and practice. 3 hrs. lecture/wk. This course is taught in the spring semester only.

HCI 140   Spanish Medical Interpreting* (3 Hours)
Prerequisites: Selective admissions approval and HCI 110 and HCI 120.

Corequisites: HCI 130 (All courses must be completed with a grade of "C" or higher.)

This course develops the knowledge, techniques and practices needed to function as a bilingual interpreter in a medical environment. Students will be introduced to basic medical conditions, procedures, courses of treatment and equipment, with vocabulary and terminology in both English and Spanish. Upon completion, students should be able to apply medical interpreting and translating techniques in a variety of healthcare settings. This course is taught in English with some Spanish terminology. 3 hrs. lecture/wk. This course is taught in the spring semester only.

HCI 180   Medical Interpreting Practicum* (2 Hours)
Prerequisites: Selective admissions approval and HC 130 and HCI 130 and HCI 140.

Prerequisites or corequisites: HC 101 (All courses must be completed with a grade of "C" or higher.)

Students will observe and interpret at assigned medical facilities, participate in organized class discussions about their interpreting experiences and develop a personal philosophy of interpreting. Both classroom meetings and fieldwork are required for this class. 2 hrs. lecture/wk.

HCI 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Health Occupations (AVHO)

Courses

AVHO 102   Certified Nurse Aide (CNA)* (5 Hours)
Prerequisites: ENGL 121 (with a grade of "C" or higher) or an appropriate reading placement test score.

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 total contact hrs. For additional information go to the jccc.edu website: click on classes, click on credit class search, click the semester, course prefix is AVHO Health Occupations and click on CRN number. For more information: http://www.jccc.edu/academics/health/nursing-related-occupations/cna-enrollment-tips.html .

AVHO 103   Certified Nurse Aide Refresher Course (CNA-R)* (1 Hour)
Prerequisites: Kansas CNA Certification.

This 21-hour CNA refresher course provides classroom and laboratory experience to update the inactive CNA. The student will discuss the nurse aide's responsibility in the current health care system and the importance of resident rights. The student will demonstrate safety measures, infection control procedures, personal care skills, measurement of vital signs and transfers, positioning and turning. 21 contact hours. 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/academics/health/nursing-related-occupations/tab-credit.html .

AVHO 104   Certified Medication Aide (CMA)* (4 Hours)
Prerequisites: Proof of Kansas CNA certification, a current TB skin test within the last year with negative results, current CPR for Health Care Providers documentation and a Social Security card. An appropriate reading placement test score.

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 website, click on classes; click on credit class search; click the semester; course prefix is AVHO Health Occupations. Click on CRN number for information.

AVHO 106   Home Health Aide (HHA)* (1 Hour)
Prerequisites: Proof of Kansas CNA certification, a current TB skin test within the last year with negative results, current CPR for Health Care Providers documentation and a Social Security card. An appropriate reading placement test score.

This course provides the student with information necessary for nutritional meal planning, task modification, emotional support and personal service to clients and families needing healthcare assistance at home. Students will be scheduled to take the Kansas HHA certification examination. 21 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.

AVHO 108   Certified Medication Aide Update (CMA-U)* (1 Hour)
Prerequisites: Proof of Kansas CMA certification and Proof of Kansas CNA Certification.

This course meets the continuing education requirements for licensed Certified Medication Aides. The course includes review of commonly used drugs and their interactions with foods and other drugs. Also included are discussions of legal implications and regulations related to administration and record keeping, biological effects of medications on the elderly and a review of basic safety principles. 15 contact hours. 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/academics/health/nursing-related-occupations/tab-credit.html .

AVHO 115   IV Therapy for LPNs* (3 Hours)
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.

This course provides review of basic physiology of the circulatory system and instruction in principles of site selection for veins appropriate for IV therapy. This course meets the Kansas requirements for LPNs seeking certification in IV Therapy. 48 contact hrs. For additional information go to the jccc.edu website: 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.

Heating,Vent.,Air Conditioning (HVAC)

Courses

HVAC 105   HVAC Fundamentals (4 Hours)
This is a beginning course in heating, ventilation and air conditioning technology that is appropriate for HVAC students. Upon successful completion of this course, the student should be able to identify the basic components of an air-conditioning system. Topics will include heat laws, refrigerants, oils and refrigeration cycles. In the lab, students will design, assemble and operate a working refrigeration system. Competencies will include brazing, wiring, evacuating and charging a system. 3 hrs. lecture/wk. and 3 hrs. lab/wk.

HVAC 110   Electrical Fundamentals (4 Hours)
This course is in electrical theory and is required for HVAC but is appropriate for all interested students. Common electrical 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. 3 hrs. lecture/wk. and 3 hrs. lab/wk.

HVAC 125   Energy Alternatives (2 Hours)
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 136   Heating System Fundamentals (3 Hours)
Upon successful completion of this course, the student should be able to identify all the components and accessories in residential heating systems. Emphasis will be on the electrical diagrams and mechanical principles. Practical instruction in service diagnostic procedures for efficient operation, maintenance and troubleshooting of these systems make up the lab portion of the course. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

HVAC 142   Load Calculations (3 Hours)
Upon successful completion of this course, students will be able to perform the load calculations for residential and commercial HVAC applications. The students will be using the Air Conditioning Contractors of America (ACCA) Manual J and Manual N. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

HVAC 164   EPA 608 Refrigerant Management (1 Hour)
The student should have a complete understanding and knowledge of the characteristics of several different types of refrigerants and the correct usage. Upon completion of this course, the student should be able to pass the examination set forth by a third-party testing facility. 1 hr. lecture/wk.

HVAC 165   410-A Refrigerant Management (1 Hour)
Upon completion of this course, the students should be able to understand nuances of new refrigerants on the market. The student should have a complete understanding and knowledge of the characteristics of R-410-A. Upon completion of this course, the student should be able to pass the examination set forth by a third-party testing facility. 1 hr. lecture/wk.

HVAC 167   Sheet Metal Layout and Fabrication (3 Hours)
Upon successful completion of this course, the student should be able to identify the components, equipment and operation for sheet metal layout and fabrication. Practice problems are included at the end of each unit in order to provide the student with an opportunity to apply the methods attained by sheet metal layout. Shop facilities are available. The patterns will be fabricated and joined into a line of fittings. This gives the most complete test of pattern accuracy and also provides the experience needed by a competent layout person. The student will be required to provide ANSI Z87 safety glasses and may be expected to provide other basic hand tools and/or equipment. 2 hrs. lecture, 3 hrs. lab/wk.

HVAC 201   Cooling Systems* (3 Hours)
Prerequisites: HVAC 105 and HVAC 110.

Upon successful completion of this course, the student should be able to identify all the components and accessories and their relationship to the functions of residential and commercial air conditioning and heat pump systems. Topics covered will include air conditioner condensing units, metering devices, evaporation coils and refrigerants. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

HVAC 231   HVAC Rooftop Units* (3 Hours)
Prerequisites: HVAC 105 and HVAC 110.

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 and 3 hrs. lab/wk.

HVAC 236   Advanced Heating Applications* (3 Hours)
Prerequisites: HVAC 105 and HVAC 110.

Upon successful completion of this course, the student will be able to identify all the components and accessories of furnaces, heat pumps or boiler systems that are used either in residential or commercial spaces. The student should also be able to demonstrate familiarity with aspects of fuel gas piping, gas appliance venting, water heater installations, combustion air requirements and proper piping techniques. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

HVAC 242   Duct Design and Equipment Selection* (3 Hours)
Prerequisites: HVAC 105.

Upon successful completion of this course, the student should be able to determine proper sizing of residential HVAC equipment and duct work to meet the requirements for high-quality climate control systems. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

HVAC 250   HVAC Installation and Start-up Procedures* (3 Hours)
Prerequisites or corequisites: HVAC 201 and HVAC 236.

Upon successful completion of this course, the student will be able to identify techniques and procedures to install new systems and retrofit systems. Topics include initial start-up, maintenance of furnaces and air conditioners, electrical requirements, permits and inspections, combustion air, sheet metal and applying mechanical standards. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

HVAC 275   HVAC Code Review* (3 Hours)
Prerequisites: Pre. HVAC 142 and HVAC 201.

Prerequisites or corequisites: HVAC 136.

This course is for the use and interpretation of the current International Mechanical Code (IMC). Upon successful completion of this course, the student should be able to interpret and apply the Code to HVAC applications. 3 hrs. lecture/wk.

HVAC 277   HVAC Control Systems* (3 Hours)
Prerequisites: Pre. HVAC 201.

Prerequisites or corequisites: HVAC 236.

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. Classroom topics will center on components, wiring diagrams, calibration and sequences of operation, system components, theory of operation, wiring diagrams and installation methods. 2 hrs. lecture/wk. and 3 hrs. lab/wk.

HVAC 280   HVAC Internship* (1-3 Hour)
Prerequisites: Department approval.

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work environment. The internship will provide the students with an on-the-job experience under the supervision of industry professionals. The work will be developed in cooperation with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals in the HVAC field. Minimum 15 hrs. per week on-the-job training.

History (HIST)

Courses

HIST 120   Local and Kansas History (3 Hours)
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. lecture/wk.

HIST 125   Western Civilization: Ancient World to the Renaissance (3 Hours)
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: Ancient World to the Renaissance begins with the ancient cultures of the Middle East, Greece and Rome and follows the development of Western thought from the medieval period to the Renaissance and Reformation. 3 hrs. lecture/wk. It is not necessary to take HIST 125 before HIST 126.

HIST 125H   HON: Western Civilization: Ancient World to the Renaissance* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 126   Western Civilization: Scientific Revolution to the Modern Age (3 Hours)
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: Scientific Revolution to the Modern Age 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.

HIST 126H   HON: Western Civilization: Scientific Revolution to the Modern Age* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 128   Medieval History (3 Hours)
Medieval History is a detailed survey of the period from late Roman Antiquity to the early Renaissance. Primary and secondary texts and visual resources will be used to illuminate the period that saw first the decline into relative stagnation caused by barbarian onslaughts and then gradual reemergence of a powerful civilization that revitalized itself by renewing the insights of ancient times. 3 hrs. lecture/wk.

HIST 129   Early Modern Europe 1500-1789 (3 Hours)
This course is an introduction to early modern European history, with emphasis on the economic, social and political developments that have shaped the modern world: the Renaissance; the Catholic and Protestant Reformations; the rise of nation-states; the new inter-cultural contact between Europe and the world; the Commercial Revolution and the Enlightenment. 3 hrs. lecture/wk.

HIST 129H   HON: Early Modern Europe 1500-1789* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 130   European History Since 1789 (3 Hours)
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. lecture/wk.

HIST 130H   HON: European History Since 1789* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 132   History of Africa (3 Hours)
This course introduces students to the history of Africa until the present. It emphasizes the fundamental characteristics and long-term developments in the evolution of African political and socioeconomic institutions. 3 hrs. lecture/wk.

HIST 135   Eastern Civilization (3 Hours)
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. lecture/wk.

HIST 135H   HON: Eastern Civilization* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 137   African American Studies (3 Hours)
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 Hours) nbsp;
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. lecture/wk.

HIST 140H   HON: U.S. History to 1877* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 141   U.S. History Since 1877 (3 Hours) nbsp;
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. lecture/wk.

HIST 141H   HON: U.S. History Since 1877* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 143   Ancient Greece, the Near East and Egypt (3 Hours)
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 Hours)
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 145H   HON: History of Ancient Rome* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 149   History of India (3 Hours)
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 and Civilization (3 Hours)
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 150H   HON: Islam: Religion and Civilization* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 151   World History I: Traditional World (3 Hours) nbsp;
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-Colombian 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 151H   HON: World History I: Traditional World* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 152   World History II: Modern World (3 Hours) nbsp;
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 152H   HON: World History II: Modern World* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 160   Modern Russian History (3 Hours)
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. lecture/ wk.

HIST 160H   HON: Modern Russian History* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 162   Modern Latin America (3 Hours)
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. lecture/wk.

HIST 165   History of China (3 Hours)
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 Hours)
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 180   North American Indian History (3 Hours)
This course surveys the major themes of the history of Indigenous peoples (also known as American Indians and Native Americans) in North America from the emergence of human life on the continent through the present. Topics include Indigenous life prior to European migration, colonialism, adaptation and resistance to European and American expansion, and efforts to maintain sovereignty. 3 hrs. lecture/wk.

HIST 195   History of the Middle East (3 Hours)
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.

HIST 195H   HON: History of Middle East* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HIST 200   Eurasia: History and Cultures (3 Hours)
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 250   American West (3 Hours)
This course is designed to familiarize students with the cultural, geographical, and historical context of the Trans-Mississippi West. Students will explore through three conceptual lenses: as region, a specific place defined by unique physical characteristics; as frontier, a mobile line of settlement; and as a perception, a set of mythic stories and images that attempt to convey national morals and values. Special attention is paid to the ethnic and racial diversity of the region, and to the major historical changes from pre-European contact to the present. 3 hrs. lecture/wk.

HIST 270   History Internship* (3 Hours)
Prerequisites: Permission of the History Internship Mentor; completion of 6 credit hours in history courses at JCCC or another college within the last two years, earning a minimum of a 3.0 on a 4.0 scale in those history courses and a written recommendation from your history classroom instructor.

Students augment their academic course work with an internship in an appropriate setting under instructional supervision. Internship projects are cooperative efforts between appropriate supervisors in state, local or national 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 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

HIST 292   Special Topics: (1-3 Hour)
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.

Honors Program (HON)

Courses

HON 250   Honors Forum: In Search of Solutions (3 Hours)
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. 3hrs. lecture/wk.

HON 250H   HON: Honors Forum: In Search of Solutions* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

Horticulture (HORT)

Courses

HORT 115   Home Horticulture (2 Hours)
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 135   Landscape Design (3 Hours)
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.

HORT 140   Turfgrass I (3 Hours)
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 Hours)
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 Hours)
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 Hours)
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 Hours)
This is an introduction to the principles and practices of horticultural plant systems. Plant structure and function will be discussed, along with the effects of environmental factors on plant growth. General cultural practices will be described, including pest control, mineral nutrition and plant propagation. 3 hrs. lecture, 2 hrs. lab/wk.

HORT 201H   HON: Introduction to Horticulture Sciences* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HORT 205   Plant Propagation* (3 Hours)
Prerequisites: HORT 201 or department approval.

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 214   Woody Plants I, Deciduous (3 Hours)
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.

HORT 215   Woody Plants II, Evergreens (3 Hours)
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.

HORT 220   Herbaceous Plants (3 Hours)
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.

HORT 225   Plant Problems* (3 Hours)
Prerequisites: HORT 214 and HORT 220 or department approval.

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 Hours)
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.

HORT 240   Turfgrass II* (3 Hours)
Prerequisites: HORT 140.

This course is a continuation of turfgrass I (HORT 140). Topics include green construction, top dressing, sprayer calibration, management programs (e.g., setting up a lawn care program) and the influence environment has on turfgrass growth. 2 hrs. lecture 2 hrs. lab/wk.

HORT 255   Pest Control Management (3 Hours)
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 Hours)
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 Hours)
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.

HORT 270   Horticulture Internship* (3 Hours)
Prerequisites: Department approval.

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 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Hospitality Management (HMGT)

Courses

HMGT 100   ACF Junior Culinarian (3 Hours)
The American Culinary Federation Education Foundation (ACFEF) offers a certification for graduates of ACFEF Secondary Certified programs. Students are able to obtain a Certified Junior Culinarian (CJC) certification if they meet certain requirements.

HMGT 120   Food Service Sanitation (1 Hour)
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 Hours)
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.

HMGT 121H   HON: Perspectives of Hospitality Management* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HMGT 123   Professional Cooking I* (3 Hours)
Prerequisites or corequisites: HMGT 120.

This is the first of two courses in professional cooking methods for students enrolled in hospitality management programs. Upon completion of this course, the student should be able to demonstrate skills in basic cooking methods, recipe conversion, and professional food preparation and handling. Additionally, the student should be able to safely operate common food service equipment used in commercial kitchens. 3.5 hrs. integrated lecture/lab/wk.

HMGT 123H   HON: Professional Cooking I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HMGT 126   Food Management* (4 Hours)
Prerequisites: HMGT 123 and HGMT 230 and HMGT 277 and admission to the hospitality management program.

This course offers an overview of restaurant management practices used in the hospitality industry. Emphasis will be on demonstrating the components of menu planning and the styles of food service used for various occasions -- buffet service and French, Russian and American service. The student will participate in the operation of the campus restaurant, including food preparation, service, sales promotion, purchasing and costing. 9 hrs. integrated lecture/lab/wk.

HMGT 128   Supervisory Management (3 Hours)
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. lecture/wk.

HMGT 130   Hospitality Law (3 Hours)
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. lecture/wk.

HMGT 132   Seminar in Housekeeping Operations (3 Hours)
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. lecture/wk.

HMGT 150   Seminar: Food Service Sales and Marketing (3 Hours)
This course includes detailed information in distinguishing the difference between marketing, sales, promotion, advertising and merchandising. In addition, development and quantifying the cost of a marketing plan by analyzing markets and developing a primary target market will be discussed. This course is a seminar course, and students are required to be employed 15 hours per week in a job related to the hospitality industry. 3 hrs. lecture, 15 hrs. internship/wk.

HMGT 150H   HON: Seminar:Food Service Sales and Marketing* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HMGT 165   Food Industry Compliance Safety (3 Hours)
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 Hours)
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. 3.5 hrs. integrated lecture/lab/wk.

HMGT 203   Hotel Sales and Marketing* (3 Hours)
Prerequisites: HMGT 121 and admission to the hospitality management program.

This course will focus on practical sales and marketing techniques for the hotel industry. It will cover a marketing plan and advertising campaign for a hotel, including identifying target markets, prospecting for sales leads and using sales techniques. This course is typically offered in the fall semester. 3 hrs. lecture/wk.

HMGT 207   Hospitality Human Resource Management* (3 Hours)
Prerequisites: HMGT 128.

This course will examine hospitality human resources management from the global perspective as the rise of multinational hospitality corporations and a multicultural society place new requirements on managers with human resource responsibilities. Special emphasis will be placed on both the "soft skills" involved in counseling, interpersonal relations and different management theories, as well as the "hard skills" involved in the legislative aspects of managing people. This course will concentrate on how to manage managers. 3 hrs. lecture/wk.

HMGT 220   American Regional Cuisine* (3 Hours)
Prerequisites: HMGT 230.

This course introduces the student to regional American cooking from nine regional culinary traditions and two specialty traditions within American cuisine. Students will study the cuisine of New England; the Mid-Atlantic states; the Deep South; Florida and the Caribbean; Cajun and Creole; the Central Plains and Rocky Mountain states; Tex-Mex and the American Southwest; California and Hawaii; the Pacific Northwest, as well as vegetarian cuisine and kosher dietary laws. Upon completion of this course, the student should be able to demonstrate skills in cooking and presenting classic American dishes in their traditional forms within a restaurant setting. 3 hrs. integrated lecture/lab/wk.

HMGT 221   Design and Facilities Management* (3 Hours)
Prerequisites: HMGT 123 and HMGT 271.

This course includes detailed information about food service design that covers layout, design and equipment specifications. In addition, facilities operations will be discussed regarding electrical, water and transportation systems; refrigeration; waste disposal; energy management; and HVAC. Preventive maintenance will be emphasized. 3 hrs. lecture/wk.

HMGT 223   Fundamentals of Baking (3 Hours)
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. 3.5 hrs. integrated lecture/lab/wk.

HMGT 223H   HON: Fundamentals of Baking* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HMGT 226   Garde Manger* (3 Hours)
Prerequisites: HMGT 230.

This course is designed for the student to learn cold food production and charcuterie. The course will allow the student to develop fundamental principles of the cold kitchen and modernize traditional methods of salad preparation. 3.5 hrs. integrated lecture/lab/wk.

HMGT 226H   HON: Garde Manger* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HMGT 228   Advanced Hospitality Management* (3 Hours)
Prerequisites: Department approval.

This course includes detailed information about various components of menu planning, food service, supervision, design and beverage control. In addition, an understanding of the external factors affecting the hotel-restaurant industry will be discussed. Skills necessary to secure a position in management within the hospitality industry will be emphasized, and case studies and computer simulation (HOTS) will be used for critical thinking analysis. Business plans will be developed as part of the course project. 3 hrs. lecture/wk.

HMGT 230   Professional Cooking II* (3 Hours)
Prerequisites: HMGT 120 and HMGT 123.

This is the second of two courses in professional cooking methods for students enrolled in hospitality management programs. Upon completion of this course, the student should be able to demonstrate advanced level skills in cooking methods, recipe conversion, and professional food preparation and handling. Additionally, the student should be able to safely operate advanced food service equipment used in commercial kitchens. This course consists of lecture, demonstration and participation in food preparation. 3.5 hrs. integrated lecture/lab/wk.

HMGT 230H   HON: Professional Cooking II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HMGT 231   Advanced Food Preparation* (4 Hours)
Prerequisites: HMGT 230 and department approval.

This course is designed to develop a student's advanced culinary skills in preparation of international cuisine commonly served in today's operations in Latin America, Europe, Asia, the Middle East, the Far East and the Pacific area. 4.5 hrs. integrated lecture/lab/wk.

HMGT 235   Seminar: Risk Management and Loss Prevention (3 Hours)
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 238   Advanced Garde Manger* (3 Hours)
Prerequisites: HMGT 226.

This course is designed for the student to learn advanced cold food production and charcuterie as well as Modern Cuisine techniques. This course will allow the student to develop advanced principles of the cold kitchen and modern cooking techniques and equipment. 3.5 hrs. integrated lecture/lab/wk.

HMGT 240   Advanced Baking* (4 Hours)
Prerequisites: HMGT 123 and HMGT 223.

This course covers the principles needed to enter the baking and pastry industry. The course provides knowledge of specialty ingredients and techniques needed to make tortes, finished desserts and a wedding cake. The student will be instructed in the making of these items through lecture and will prepare a variety of such items in lab. 4.5 hrs. integrated lecture/lab/wk.

HMGT 245   Travel for Credit* (3 Hours)
Prerequisites: HMGT 121 and department approval.

This travel-for-credit course consists of visits to restaurants, hotels, markets and food and beverage producers in an established region.

HMGT 248   Confectionery Arts (3 Hours)
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. 3.5 hrs. integrated lecture/lab/wk.

HMGT 250   Introduction to Catering (3 Hours)
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.

HMGT 265   Front Office Management (3 Hours)
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. lecture/wk.

HMGT 268   Hospitality Managerial Accounting* (3 Hours)
Prerequisites: MATH 120 and HMGT 121 and HMGT 273.

This course introduces the student to basic managerial accounting. This includes accounting concepts, processing data and the flow of financial information within a hospitality operation. The course provides a working knowledge of an income statement, balance sheet, statement of owner's equity and cash flows. 3 hrs. lecture/wk.

HMGT 270   Meat and Fish Identification and Fabrication* (3 Hours)
Prerequisites: HMGT 226 and HMGT 286.

This course is designed for the student to learn about meat and fish identification, and fabrication of beef, veal, pork, lamb, poultry, fish and seafood. 3.5 hrs. integrated lecture/lab/wk.

HMGT 271   Seminar in Hospitality Management: Purchasing (3 Hours)
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 Hours)
Prerequisites: MATH 120 or higher and HMGT 121.

This course includes detailed information on how to prepare operation statements for a food service operator, including inventory and control systems. Areas of concentration will be food cost controls, labor cost controls, purchasing controls and profit production. The practice set will be used to reinforce control systems. 3 hrs. lecture/wk.

HMGT 275   Seminar in Hospitality Management: Internship* (3 Hours)
Prerequisites: Admission to the hospitality management program.

This course provides industry experience for students in cooperating businesses, agencies and organizations. While enrolled in this course, a student must work a minimum of 320 hours in an approved position in the hospitality industry. By arrangement.

HMGT 277   Seminar in Hospitality Management: Menu Design Planning* (3 Hours)
Prerequisites: HMGT 123 and HMGT 273.

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.

HMGT 279   Beverage Control (3 Hours)
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. lecture/wk.

HMGT 281   Culinary Arts Practicum I* (2 Hours)
Prerequisites: Acceptance into the American Culinary Federation Chef Apprenticeship training program and hospitality management department approval.

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation.

HMGT 282   Culinary Arts Practicum II* (2 Hours)
Prerequisites: HMGT 281.

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation. This course is a continuation of Culinary Arts Practicum I.

HMGT 285   Culinary Arts Practicum III* (2 Hours)
Prerequisites: HMGT 282.

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation. This course is a continuation of Culinary Arts Practicum II.

HMGT 286   Culinary Arts Practicum IV* (2 Hours)
Prerequisites: HMGT 285.

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation. This course is a continuation of Culinary Arts Practicum III.

HMGT 287   Culinary Arts Practicum V* (2 Hours)
Prerequisites: HMGT 286.

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation. This course is a continuation of Culinary Arts Practicum IV.

HMGT 288   Culinary Arts Practicum VI* (2 Hours)
Prerequisites: HMGT 287 and hospitality management department approval.

A qualified chef who is a member of the American Culinary Federation will supervise this on-the-job apprentice training. Upon successful completion of this course, the student should be able to apply food preparation and presentation techniques and gain experience in all phases of food service operation. This course is a continuation of Culinary Arts Practicum V.

HMGT 292   Special Topics:* (3 Hours)
Prerequisites: Department approval.

This course periodically offers specialized or advanced discipline-specific content related to diverse areas of culinary arts, not usually taught in the curriculum, to interested and qualified students within the program.

Hospitality Mgt Pastry Baking (HMPB)

Courses

HMPB 155   Pastry Shop Production I* (4 Hours)
Prerequisites: HMGT 120 and HMGT 123.

Corequisites: HMPB 160 and HMPB 233 and HMPB 252.

This course will provide hands-on instruction of techniques used to make basic pastry shop staples used in the production of items intended for retails sales in a professional pastry shop. This course is typically offered in the fall semester. 4.5 hrs. integrated lecture/lab/wk.

HMPB 160   Pastry Shop Principles I* (4 Hours)
Prerequisites: HMGT 120 and HMGT 123.

Corequisites: HMPB 155 and HMPB 233 and HMPB 252.

This course will examine the fundamental baking concepts including sanitation, ingredient identification and usage, weights and measures, inventory and product ordering needed as it pertains to a professional pastry shop. Students will be operating a working bake shop. This course is typically offered in the fall semester. 4.5 hrs. integrated lecture/lab/wk.

HMPB 233   Patisserie* (4 Hours)
Prerequisites: HMGT 120 and HMGT 123.

Corequisites: HMPB 155 and HMPB 160 and HMPB 252.

This course will provide hands-on instruction of techniques to make finished pastry items such as tortes, tarts, pastries, cookies, candies and breads as well as how to present items in a professional manner. This course is typically offered in the fall semester. 4.5 hrs. integrated lecture/lab/wk.

HMPB 252   Pastry Shop Business Basics I* (3 Hours)
Prerequisites: HMGT 120 and HMGT 123.

Corequisites: HMPB 155 and HMPB 160 and HMPB 233.

This course will provide basic hands-on techniques used to market finished pastry items, customer service, setting up, restocking and maintaining a display case, as well as taking pastry orders. This course is typically offered in the fall semester. 3.5 hrs. integrated lecture/lab/wk.

HMPB 255   Pastry Shop Production II* (4 Hours)
Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and HMPB 252.

Corequisites: HMPB 260 and HMPB 257 and HMPB 252.

This course will provide hand-on instruction of advanced techniques used to make advanced staples used in the production of advanced pastries, cakes, tarts, and tortes intended for retail sales in a professional pastry shop. This course is typically offered in the spring semester. 4.5 hrs. integrated lecture/lab/wk.

HMPB 257   Sugar Basics* (4 Hours)
Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and HMPB 252.

Corequisites: HMPB 255 and HMPB 260 and HMPB 262.

This course will provide hands-on instruction of pulled and brown sugar techniques used for garnishing advanced pastry items. The student will learn how to cook, pull, blow and store sugar pieces used in a professional pastry shop. This course is typically offered in the spring semester. 4.5 hrs. integrated lecture/lab/wk.

HMPB 260   Pastry Shop Principles II* (4 Hours)
Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and HMPB 252.

Corequisites: HMPB 255 and HMPB 257 and HMPB 262.

This course will examine the advanced baking concepts including high dollar ingredient identification and usage, storage, advanced inventory control, costing and product sources and product availability as it pertains to a professional pastry shop. This course is typically offered in the spring semester. 4.5 hrs. integrated lecture/lab/wk.

HMPB 262   Pastry Shop Business Basics II* (3 Hours)
Prerequisites: HMPB 155 and HMPB 160 and HMPB 233 and HMPB 252.

Corequisites: HMPB 255 and HMPB 260 and HMPB 257.

This course will provide advanced hands-on techniques used to market finished pastry items, execute excellent customer service, establishing operational guidelines, inventory and restocking, product ordering, product research, maintaining a display case, as well as taking pastry orders. This course is typically offered in the spring semester. 3.5 hrs. integrated lecture/lab/wk.

Humanities (HUM)

Courses

HUM 122   Introduction to Humanities (3 Hours)
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.

HUM 122H   HON: Introduction to Humanities* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HUM 137   Introduction to Russian Culture (3 Hours)
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.

HUM 145   Introduction to World Humanities I (3 Hours)
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. This course is taught in the fall semester.

HUM 145H   HON: Introduction to World Humanities I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HUM 146   Introduction to World Humanities II (3 Hours)
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. This course is taught in the spring semester.

HUM 146H   HON: Introduction to World Humanities II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HUM 150   Islam: Religion Civilization (3 Hours)
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. This course is taught in the fall semester.

HUM 155   Classical Mythology (3 Hours)
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.

HUM 155H   HON: Classical Mythology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HUM 156   Contemporary Approaches to World Mythology (3 Hours)
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 156H   HON: Contemporary Approaches to World Mythology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HUM 165   Introduction to Chinese Culture (3 Hours)
The course acquaints students with the ideas, culture, and arts of China, from its prehistory through the present day, using a thematic structure that reflects the interplay of diversity and unity that characterizes Chinese culture and history in ways that simultaneously conflict with and complement each other. The approach is interdisciplinary, examining a long tradition of philosophy and religion that permeates all aspects of Chinese life, the values embodied in various traditional and modern arts, and how nature, the environment and issues of sustainability are understood via Chinese schools of thought. In addition to developing students' appreciation of China's contribution to world culture, the course aims to enhance students' understanding of the contemporary world. 3hrs. lecture/wk. This course is taught in the fall semester.

HUM 165H   HON: Introduction to Chinese Culture* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HUM 167   Introduction to Japanese Culture (3 Hours)
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. This course is taught in the spring semester.

HUM 167H   HON: Introduction to Japanese Culture* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

HUM 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

HUM 292   Special Topics:* (1-3 Hour)
Prerequisites: Department approval.

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)

Courses

INDT 125   Industrial Safety/OSHA 30 (3 Hours)
Upon successful completion of this course, participants will be able to clearly identify, define and explain general industry hazards and acceptable corrective measures in accordance with the 29th Code of Federal Regulations, Part 1910 (29 CFR 1910), Occupational Safety & Health Administration (OSHA) General Industry Regulations. The OSHA course-completion card can be earned simultaneously with completion of this college course, at the discretion of the student and fulfillment of OSHA's requirements. 3 hrs. lecture/wk.

INDT 150   Construction Safety/OSHA 30 (3 Hours)
Upon the successful completion of this course, participants will be able to clearly identify, define and explain Construction Industry hazards and acceptable corrective measures in accordance with the 29th Code of Federal Regulations, Part 1926 (29 CFR 1926), Occupational Safety and Health Administration (OSHA) Construction Industry Regulations. The OSHA course completion card can be earned simultaneously with completion of this college course, at the discretion of the student and fulfillment of OSHA's requirements. 3 hrs. lecture/wk.

INDT 155   Workplace Skills (1 Hour)
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)

Courses

IT 120   CompTIA A+ Practical Applications (3 Hours)
Students will gain knowledge required to install, configure and maintain software for end users. This course will also cover the basics of networking as well as networking security/forensics. Students will apply troubleshooting skills to properly and safely diagnose, resolve and document common software issues. Students will also apply appropriate customer support and soft skills, understand the basics of virtualization and examine desktop imaging and deployment. 2 hrs. lecture/wk, 2 hrs. lab/wk, 1 hr. open lab/wk.

IT 140   Networking Fundamentals (4 Hours)
This course serves as the first module of four that are designed to prepare students to complete the Cisco Certified Network Associate (CCNA) Certification. The course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the CCNA curriculum. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. 3 hrs. lecture 2 hrs. open lab/wk.

IT 145   Routing and Switching Essentials* (3 Hours)
Prerequisites: IT 140.

This course is designed to provide students with a fundamental understanding of network routing and switching. Students successfully completing this course will be able to configure and troubleshoot routers and switches and resolve common issues with RIP (Routing Information Protocol) and OSPF (Open Shortest Path First) in IPv4 and IPv6 (Internet Protocol version 4 and 6) networks. Laboratory exercises will accompany lectures. 3 hrs. lecture, 2 hrs. open lab/wk.

IT 201   Network Security Fundamentals* (4 Hours)
Prerequisites: IT 145.

This course is designed to provide an introduction to the core security concepts and skills needed for the installation, troubleshooting and monitoring of network devices to maintain the integrity, confidentiality and availability of data and devices. Topics covered include network threats, mitigation techniques, securing network devices, implementing firewall technologies, implementing intrusion prevention, securing local area networks (LANs), implementing virtual private networks (VPNs), and managing a secure network. Hands-on exercises will be used to reinforce the concepts. 2 hrs. lecture, 3 hrs. lab/wk.

IT 203   Voice Over IP Fundamentals* (4 Hours)
Prerequisites: IT 145.

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 Hours)
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, 2 hrs. instructional lab, 1 hr. open lab/wk.

IT 209   Scaling Networks* (4 Hours)
Prerequisites: IT 145.

This course is designed to provide students with the necessary knowledge and skills to interconnect and configure routers and switches in large networks. Students successfully completing this course should be able to perform switch and router administration tasks including installing, configuring and troubleshooting. Students will build networks based on the hierarchical design model supported by Virtual Local Area Networks (VLANs), Spanning Tree Protocol (STP), Open Shortest Path First (OSPF) and Enhanced Interior Gateway Routing Protocol (EIGRP) in Internet Protocol Version 4 and 6 (IPv4 and IPv6) networks. 3 hrs. lecture, 2 hrs. open lab/wk.

IT 221   Windows Server* (3 Hours)
Prerequisites or corequisites: IT 205.

This course is designed to provide students with the knowledge and skills to perform competently in the role of a network administrator utilizing the Windows network operating system. Students completing this course will be able to accomplish basic fundamental network management tasks, including planning server roles and subsequent requirements, planning the network file system, implementing user accounts and file system security, implementing network printing, and managing the network servers. 2 hrs. lecture, 2 hrs. instructional lab, 1 hr. open lab/wk.

IT 225   Windows Active Directory Services* (3 Hours)
Prerequisites: IT 221.

The focus of this course is using Microsoft Windows Server or Advanced Server software to install, configure and troubleshoot Active Directory components, Domain Name Space (DNS) for Active Directory and Active Directory security solutions. The course also emphasizes the skills required to manage, monitor and optimize the desktop environment using Group Policy. 2 hrs. lecture, 2 hrs. instructional lab, 1 hr. open lab/wk.

IT 228   Exchange Server* (3 Hours)
Prerequisites: IT 225.

This course is designed to provide network administrators with information that enhances their ability to manage an Exchange server network. Included are topics related to server and client mail management and server performance, e-mail concepts and advanced Internet networking. 2 hrs. lecture, 2 hrs. instructional lab, 1 hr. open lab/wk.

IT 230   Linux Fundamentals (3 Hours)
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 perform Linux installation and package management; execute common Linux commands and utilities; and accomplish different system tasks such as navigating the filesystem and utilizing the resources of a basic Linux system. 2 hrs. lecture, 2 hrs. instructional lab, 1 hr. open lab/wk.

IT 231   Linux Administration* (3 Hours)
Prerequisites: IT 230.

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 configuring the graphical user interface, managing user accounts, managing system logging, configuring basic networking, writing shell scripts and maintaining system security. 2 hrs. lecture, 2 hrs. instructional lab, 1 hr. open lab/wk.

IT 232   Linux Networking* (4 Hours)
Prerequisites: IT 231.

This course is designed to provide students with skills that enhance their ability to manage Linux systems in a networked environment. Topics covered in this course include configuring and managing a Domain Name Server (DNS), web servers, file sharing servers, network client services, email services and network services. 2 hrs. lecture, 2 hrs. instructional lab, 1 hr. open lab/wk.

IT 233   Linux Advanced Administration* (4 Hours)
Prerequisites: IT 231.

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. 2 hrs. lecture, 2 hrs. instructional lab, 1 hr. open lab/wk.

IT 238   Digital Forensics* (3 Hours)
Prerequisites: IT 120 and IT 205 and IT 230.

This course will cover the fundamentals of computer and cyber forensics. Students will learn different aspects of digital evidence and methods to uncover illegal activities left on storage media. Various forensics tools (both hardware and software), techniques and procedures will be used in a lab environment to perform forensic investigations. 2 hrs. lecture, 2 hrs. instructional lab and 1 hr. open lab/wk.

IT 239   Ethical Hacking* (3 Hours)
Prerequisites: IT 145 and IT 205 and IT 230.

This course is designed to introduce students to common computer vulnerabilities as well as exploits and techniques used by hackers. Students will develop countermeasures to mitigate attacks and strengthen system security. Topics covered include vulnerability scanning, social engineering, denial of service attacks, intrusion detection, buffer overflow and penetration testing. 2 hrs. lecture, 2 hrs. lab and 1 hr. instructional lab/wk.

IT 245   Network Infrastructure* (3 Hours)
Prerequisites: IT 221.

This course is designed to provide an in-depth understanding of the ability to install, manage, monitor, configure and troubleshoot DNS, DHCP, Remote Access, Network Protocols, IP Routing and WINS in a Windows 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, 2 hrs. instructional lab, 1 hr. open lab/wk.

IT 247   Accessing Wide Area Networks* (3 Hours)
Prerequisites: IT 145 and IT 209.

The goal is to develop an understanding of various Wide Area Network (WAN) technologies to connect medium-size business networks. The course focuses on WAN technologies including Point-to-Point Protocol (PPP), Frame Relay and broadband links. WAN security concepts are discussed in detail, including types of threats, how to analyze network vulnerabilities, and general methods for mitigating common security threats. The course explains the principles of Access Control Lists (ACLs) and describes how to implement IP addressing services for an enterprise network, including Network Address Translation (NAT) and Dynamic Host Configuration Protocol (DHCP). IPv6 addressing concepts are also discussed. Finally, students learn how to troubleshoot and correct common network implementation issues. 2 hrs. lecture, 3 hrs. lab/wk.

IT 256   Windows Security* (4 Hours)
Prerequisites: IT 225 and IT 245.

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. open lab/wk.

IT 271   Information Technology Internship I* (3 Hours)
Prerequisites: IT 210 or IT 221 or IT 230 and department approval.

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 Hours)
Prerequisites: IT 271 and department approval.

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:* (1-3 Hour)
Prerequisites: Department approval.

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.

Interior Design (ITMD)

Courses

ITMD 121   Interior Design I (3 Hours)
This course is an introduction to interior design. Upon successful completion of this course, the student should recognize the significance of interior design, apply the elements and principles of design and color theory, use the basis of the design process to solve a design problem and present design information visually and verbally in a professional manner. Finally identify the significance of sustainability in the built environment. 3 hrs. lecture/wk.

ITMD 125   Interior Textiles (3 Hours)
This course is an examination of textiles used in the built environment. Upon successful completion of this course, the student should be able to differentiate fibers, yarns and textiles according to their specific characteristics and to select appropriate textiles for applications. Specific course content includes properties and characteristics of natural and man-made fibers; yarn construction, textile construction methods; and various finishing processes. Furthermore, students will study the sustainability of these textile elements. The course will concentrate on textiles designed for interior built environment applications. 3 hrs. lecture/wk.

ITMD 125H   HON: Interior Textiles* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ITMD 127   Elements of Floral Design (1 Hour)
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.

ITMD 129   Design Communication* (3 Hours)
Prerequisites: ITMD 121 with a grade of "C" or higher and DRAF 164 with a grade of "C" or higher.

This is an intermediate course focusing on artistic presentation techniques of 2D and 3D. Manual and digital drawing methods used in the interior design profession will be explored. Upon successful completion of this course, the student should demonstrate skill in conceptual and technical processes to convey visual information. Color palette use, light source and shading, surface and detail texturing and entourage will be used to successfully illustrate design solutions. Additionally the student will organize and demonstrate visual and verbal presentations to communicate a design solution. 4 hrs. integrated lecture/lab/wk.

ITMD 132   Materials and Resources (3 Hours)
This course is an intermediate course focusing on the materials and resources used in the built environment. The student will evaluate the quality of materials; demonstrate the ability to locate and 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 materials; and compare the design, use, durability and cost of materials. 3 hrs. lecture/wk.

ITMD 147   Lighting Basics* (1 Hour)
Prerequisites: ITMD 121 with a grade of "C" or higher or FASH 125.

This course provides general knowledge about lighting design and planning. Upon successful completion of this course, the student should be able to define and use vocabulary relating to lighting design and planning. The student should be able to recognize and explain lighting application and technology used in the lighting industry. 1 hr. lecture/wk.

ITMD 185   Construction Methods, Building Systems and Regulations for the Interior Designer* (3 Hours)
Prerequisites: DRAF 164 with a grade of "C" or higher.

This course will focus on construction methods, building systems and regulations that affect the interior designer. Upon successful completion of this course, the student should be able to identify and articulate various construction assemblies, recognize building systems vs. interior systems and define the impact on the built environment, and understand regulations affecting the built environment. Furthermore, students will understand construction documents related to these portions of the built environment. Additionally, the student will be able to define and use vocabulary related to the built environment as well as identify and explain the importance of sustainable components in these portions of the built environment. 3 hrs. lecture/wk.

ITMD 202   Interior Design II* (3 Hours)
Prerequisites: ITMD 121 with "C" or higher and DRAF 164 with a grade of "C" or higher.

This course focuses on the design process. Upon successful completion of this course, the student should be able to define and apply the design process from programming through design development to effectively solve a design problem. The design solutions will also incorporate anthropometrics, proxemics and universal design elements. The course will introduce students to varying psychological dynamics and how they will affect the built environment. Furthermore, the student will incorporate National Kitchen and Bath (NKBA) standards and sustainable concepts as required for the design solution. Design solutions will be presented in verbal and visual formats appropriate for interior design. 4 hrs. integrated lecture/lab/wk.

ITMD 202H   HON: Interior Design II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ITMD 215   Environmental Systems for the Interior Designer* (3 Hours)
Prerequisites: ITMD 185 with a grade of "C" or higher.

This is an intermediate course focusing on environmental systems such as: lighting design, acoustical design, thermal design and indoor air quality as it effects the interior designer's decisions in the built environment. Upon successful completion of this course, the student should be able to define and use vocabulary relating to environmental systems, recognize and explain environmental systems application and technology, and understand environmental systems impact on human behavior. The student should be able to identify and describe proper fixtures and equipment for lighting environmental systems and understand proper designs for specific applications. Furthermore, students will learn the significant impact sustainable practices have on environmental systems. 3 hrs. lecture/wk.

ITMD 215H   HON: Environmental Systems for the Interior Designer* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ITMD 219   Issues in Interior Design* (3 Hours)
Prerequisites: ITMD 121 with a grade of "C" or higher.

This course is designed to educate the student on the current issues that affect the interior design profession such as environmental design, green/sustainable design and universal design, etc. 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 222   Interior Design III* (3 Hours)
Prerequisites: ITMD 202 and DRAF 264.

Prerequisites or corequisites: ITMD 129 and ITMD 271 (All courses must be completed with a grade of "C" or higher.)

This is an advanced course focusing on applying the design process to solve a design problem. 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 proficiently apply the design process in layout and specification formats. In addition, the student will present aesthetic and technical information as required by the design problem. Students will also incorporate the use of sustainable guidelines to solve a design problem. The student will also demonstrate an understanding of business practices. 4 hrs. integrated lecture/lab/wk.

ITMD 222H   HON: Interior Design III* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ITMD 224   Interior Design IV* (3 Hours)
Prerequisites: ITMD 129 and ITMD 185 and ITMD 202 and DRAF 264 (All courses must be completed with a grade of "C" or higher.)

This is an advanced course focusing on using an "evidence-based design" approach. Upon successful completion of this course, the student will be able to describe and apply general and specific programming tasks, understand research methods used in design, analyze style and historic value, define contextual elements related to the built environment, understand the implementation of sustainability throughout the approach, apply human factors and philosophies to design solution, and understand the different approaches to various design categories. 4 hrs. integrated lecture/lab/wk.

ITMD 224H   HON: Interior Design IV* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ITMD 230   History of Interior Design I (3 Hours)
This course is an examination of the built environments from approximately Antiquity to Renaissance. Upon successful completion of this course, the student should be able to analyze and compare elements of the built environment to include but are not limited to: architecture, interiors, furniture, ornamentation, design 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 built environment each period. The student should also be able to identify and define the craftsmanship and materials used in the construction techniques of each historical period and correctly use vocabulary related to each era. 3hrs. lecture/wk.

ITMD 231   History of Interior Design II (3 Hours)
This course is an examination of the built environments from approximately the Renaissance to the 20th century. Upon successful completion of this course, the student will be able to analyze and compare elements of the built environment including but not limited to: architecture, interiors, 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 built environment of each period. The student should also be able to identify the craftsmanship and materials used in the construction techniques of each historical period and correctly use vocabulary related to each era. 3 hrs. lecture/wk.

ITMD 233   Kitchen and Bath Basics* (3 Hours)
Prerequisites: DRAF 264 with a grade of "C" or higher and ITMD 202 with a grade of "C" or higher.

This is an introductory 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 current design trends in the kitchen and bath industry, understand proper NKBA kitchen and bath access standards and planning guidelines, identify cabinetry styles, types and construction methods, possess basic understanding of metric and imperial measurements, and a basic knowledge of technologies used in kitchen and bath planning, and finally understand the basic business management forms for the kitchen and bath industry. Students will also analyze sustainability in the kitchen and bath industry. 3 hrs. lecture/wk.

ITMD 233H   HON: Kitchen and Bath Basics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

ITMD 235   Kitchen and Bath Advanced* (3 Hours)
Prerequisites: ITMD 233 with a grade of 'C' or higher.

This is an advanced course in kitchen and bath design, planning and management. Upon successful completion of this course, the student will be able to produce drawings using appropriate graphic and presentation standards, develop written and verbal design statement to substantiate projects, demonstrate product, material, style, type and construction method knowledge, communicate and recommended installation procedures, understand selection, specification and ordering of products as it relates to cost, energy, safety and design. Students will also analyze sustainability within a kitchen and bath project. 4 hrs. integrated lecture/lab/wk.

ITMD 239   Capstone: Interior Design* (2 Hours)
Prerequisites: Department approval.

This course is a culmination of the Interior Design Program course work. It should be taken in conjunction with or after completion of the final interior courses or in the graduating semester. Upon successful completion of this course, the student will 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 knowledge from program courses. 2 hrs. lecture/wk.

ITMD 271   Budgeting and Estimating* (3 Hours)
Prerequisites: ITMD 132 with a grade of "C" or higher and ITMD 125 with a grade of "C" or higher and MATH 120 (or higher) with a grade of "C" or higher.

Upon successful completion of this course, the student will demonstrate an ability to measure accurately for project components, apply cost parameters to project components, effectively prepare material and labor cost estimate analysis, understand cost controls such as value engineering, and evaluate sustainable material and labor cost. Students will use interior design business procedures and documents to complete project analysis. 3 hrs. lecture/wk.

ITMD 273   Practices and Procedures* (2 Hours)
Prerequisites: ITMD 271 with a grade of "C" or higher.

Upon successful completion of this course, the student will be able to use proper interior design industry terminology, appropriate business forms and contracts, define the types of business legal structures and solve business organizational and ethical problems. 2 hrs. lecture/wk.

ITMD 280   Leadership in Design* (1 Hour)
Prerequisites: ITMD 121 with a grade of "C" or higher.

Upon successful completion of this course, the student should be able to identify leadership skills necessary for 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. These topics will be discussed in relationship to sustainability issues. Students desiring leadership opportunities in professional organizations are encouraged to enroll. 1 hr. lecture/wk.

ITMD 282   Interiors Internship I* (1 Hour)
Prerequisites: ITMD 121 with a grade of "C" or higher.

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the interiors industry. A minimum of 160 hours per semester of on-the-job training is required.

ITMD 284   Interiors Internship II* (1 Hour)
Prerequisites: ITMD 121 with a grade of "C" or higher.

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course consists of supervised work experience in an approved training situation. It is designed to provide practical experience in the interiors industry. A minimum of 160 hours per semester of on-the-job training is required.

ITMD 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

International Studies Abroad (ISAP)

Courses

ISAP 200   Study Abroad* (1-20 Hour)
Prerequisites: Department approval.

Study Abroad college credit course(s) is/are earned while studying in any one of more than 30 countries for a summer, semester or a year. For program requirements, please refer to the JCCC Study Abroad site at http://www.jccc.edu/internationaleducation/study-abroad/index.html . It is very important to meet with your academic adviser prior to studying abroad to see how the credits will apply to general education requirements and transfer schools.

Interpreter Training (INTR)

Courses

INTR 122   Intermediate American Sign Language I* (3 Hours)
Prerequisites: INTR 121 or ASL 121 or FL 181 with a grade of "C" or higher.

Corequisites: Students accepted in the interpreter training program must take corequisites of INTR 130 and INTR 126 and (INTR 147 or ASL 145) and (INTR 145 or ASL 145) all with a grade of "C" or higher.

This course will focus on the development of intermediate American Sign Language communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 6 hrs. integrated 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.

INTR 123   Intermediate American Sign Language II* (3 Hours)
Prerequisites: INTR 122 or ASL 122 or FL 270 with a grade of "C" or higher.

Corequisites: For students accepted in the interpreter training program: INTR 131 and INTR 135 and INTR 242 and INTR 248 all with a grade of "C" or higher.

The course will continue study of intermediate American Sign Language. It is designed to develop further intermediate communication skills in American Sign Language. Information about the linguistic and cultural features will be included in the context of language learning experiences. 6 hrs. integrated lecture-lab/ wk. The daytime sections are open only to students in the interpreter training program. INTR 123, FL 271 and ASL 123 are the same courses; only enroll in one.

INTR 126   Classifiers in American Sign Language* (2 Hours)
Prerequisites: INTR 121 or ASL 121 with grade of "C" or higher and acceptance in the interpreter training program.

Corequisites: (INTR 122 or ASL 122) and INTR 130 and (INTR 147 or ASL 147) and (INTR 145 or ASL 145).

The course will provide an in-depth analysis of classifiers in ASL through discussion and demonstration of the three different categories of classifiers in ASL: representative classifiers (noun and its action), descriptive classifiers (size-and-shape, extent, perimeter, pattern and texture), and instrumental classifiers (manipulative and handle). Students will learn to comprehend and produce classifiers from all three categories. 4 hrs. integrated lecture/lab/wk.

INTR 130   Survey of the Interpreting Profession* (3 Hours)
Prerequisites: INTR 121 or FL 181 or ASL 121 with a grade of "C" or higher and acceptance in the interpreter training program.

Corequisites: (INTR 122 or ASL 122) and INTR 126 and (INTR 147 or ASL 147) and (INTR 145 or ASL 145) all with a grade of "C" or higher.

This course provides an introduction to interpreting as an occupation. Students will come to understand interpersonal communication skills, professional ethics, parameters of responsibilities, community resources and legal ramifications as they relate to the interpreter. 3 hrs. lecture/wk.

INTR 131   Interpreting Preparation Skills* (2 Hours)
Prerequisites: INTR 130 with a grade of "C" or higher and acceptance into the interpreter training program.

Corequisites: INTR 123 and INTR 135 and INTR 242 and INTR 248 all with a grade of "C" or higher.

This course provides students with a foundation in the theory of interpretation. Students will explore the Colonomos Model of interpreting and apply this model by first using pre-interpreting skills in isolation. Then students will progress from producing translations to interpreting consecutively. 4 hrs. integrated lecture-lab/wk.

INTR 135   Intro to American Sign Language Linguistics* (3 Hours)
Prerequisites: INTR 122 or ASL 122 or FL 270 with a grade of "C" or higher.

Corequisites: for students accepted in the interpreter training program enroll in: INTR 123 and INTR 242 and INTR 131 and INTR 248 all with a grade of "C" or higher.

This course introduces students to the structural and grammatical principles of ASL. Students will explore concepts of equivalency between English and ASL 3 hrs. integrated lecture/lab/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.

INTR 145   Introduction to the Deaf Community* (3 Hours)
Prerequisites: Acceptance to interpreter training program.

Prerequisites or corequisites: ANTH 125 and SPD 120 for Interpreter Training Program Corequisites for Interpreter Training Prog: INTR 122 and INTR 126 and INTR 130 and INTR 147 all with a grade of "C" or higher Note: Prerequisite or corequisite of INTR 120 or ASL 120 or FL 180 required for students in the American Sign Language Studies Certificate.

This course will prepare students to develop and recognize the diversity within the Deaf Community, significant events and figures in Deaf History, and basic norms and values of Deaf Culture. Students will examine and compare Deaf Culture and hearing culture in America. The daytime sections are open only to students in the interpreter training program. 3 hrs. lecture/wk. INTR 145 and ASL 145 are the same course; do not enroll in both.

INTR 147   Fingerspelling I* (2 Hours)
Prerequisites: INTR 121 or FL 181 or ASL 121 with a grade of "C" or higher.

Corequisites: For students accepted in the interpreter training program, enroll in: (INTR 122 or ASL 122) and INTR 126 and INTR 130 and (INTR 145 or ASL 145) all with a grade of "C" or higher.

Students will work on developing beginning expressive and receptive fingerspelling skills based on word recognition principles. 3 hrs. integrated lecture/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 181   Interpreting Practicum I* (1 Hour)
Prerequisites: INTR 130 and INTR 145 with a grade of "C" or higher.

Corequisites: INTR 223 and INTR 226 and INTR 250 all with a grade of "C" or higher.

Students will observe skilled interpreters in various interpreting situations in a variety of settings during the semester. 2 hrs. lab, field work/wk.

INTR 223   Advanced American Sign Language* (3 Hours)
Prerequisites: INTR 123 or ASL 123 or FL 271 with a grade of "C" or higher.

Corequisites: INTR 250 and INTR 226 and INTR 181 all with a grade of "C" or higher.

This course is a continuation of Intermediate American Sign Language II. Students will learn about culturally significant topics related to the Deaf community, more complex ASL grammatical features and conversational skill development. Comprehension skills and linguistic features of ASL will be taught to a variety of contexts in simulated, typical interaction. Students will have opportunities to utilize what they learn about advanced ASL through class activities, dialogues, short stories, general conversations and class discussions. Sign comprehension and production skills will be emphasized. This course meets for six hours of internship/week.

INTR 226   Specialized and Technical Vocabulary* (2 Hours)
Prerequisites: INTR 123 or ASL 123 with a grade of "C" or higher.

Corequisites: INTR 181 and INTR 250 and INTR 223 all with a grade of "C" or higher.

This course will expand the interpreter training students' vocabulary related to specialized and technical contexts. Students will discuss vocabulary use in a variety of contexts to include socially restricted terms and phrases Deaf people use; colloquialisms; varying registers; terminology in medical, mental health, religion, sex, drugs; and strong language in ASL. Students' development of comprehension and production skills in common formal and informal settings will be emphasized. Students will also discuss Signing Exact English (SEE II) and the differences from American Sign Language (ASL). 4 hrs. integrated lecture-lab/wk.

INTR 242   Fingerspelling II* (2 Hours)
Prerequisites: INTR 147 with a grade of "C" or higher Core. INTR 123 and INTR 131 and INTR 135 and INTR 248 all with a grade of "C" or higher.

This course focuses on continued development of expressive and receptive fingerspelling skills based on word and phrase recognition and expression. 3 hrs. integrated lecture/lab/wk.

INTR 248   Deaf Community Ethnography* (3 Hours)
Prerequisites: INTR 145 or ASL 145 with a grade of "C" or higher.

Corequisites: (INTR 123 or ASL 123) and INTR 131 and (INTR 135 or ASL 135) and INTR 242 all with a grade of "C" or higher.

This advanced course will provide students the opportunity to explore power and oppression issues experienced by d/Deaf people. Specific attention will be given to society's views of the d/Deaf community and the influence of various media on these views. 3 hrs. lecture/wk.

INTR 250   Interpreting I* (6 Hours)
Prerequisites: INTR 131 with a grade of "C" or higher.

Corequisites: INTR 181 and INTR 223 and INTR 226 all with a grade of "C" or higher.

In this introduction to interpreting principles, emphasis will be on English-to-ASL and ASL-to-English skills. Students will participate in sequential drills and apply these skills in class. 10 hrs. integrated lecture/lab/wk.

INTR 251   Interpreting II* (2 Hours)
Prerequisites: 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.

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. 4 hrs. integrated lecture/lab/wk.

INTR 262   Seminar on Interpreting* (3 Hours)
Prerequisites: INTR 250 with a grade of "C" or higher.

Corequisites: INTR 251 and INTR 282 and AAC 150 all with a grade of "C" or higher.

This course provides students with knowledge of stress management as applied to both the physical demands and mental conditions of sign language interpreting. Students will learn and apply decision-making techniques in regard to the Interpreter (RID) Code of Ethics. Additionally, the course provides students with knowledge of career development theory, career decision-making and the job-search process. 3 hrs. lecture/wk.

INTR 282   Interpreting Practicum II* (6 Hours)
Prerequisites: INTR 181 with a grade of "C" or higher.

Corequisites: INTR 251 and INTR 262 and AAC 150 all with a grade of "C" or higher.

This course provides students with an opportunity to observe and interpret in an off-site setting with the supervision of an experienced interpreter. Students will actively engage in discussions relating to the difficulties and rewards of working in a realistic interpreting environment. The fieldwork totals 270 hours a semester.

INTR 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Journalism/Media Communication (JOUR)

Courses

JOUR 120   Mass Media and Society (3 Hours) nbsp;
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. lecture/wk.

JOUR 120H   HON: Mass Media and Society* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

JOUR 122   News Writing and Reporting (3 Hours)
News Writing and Reporting prepares students who want to gain basic news-gathering and reporting skills across print, broadcast and online media platforms. Interviewing, researching and story writing under strict deadlines provide students with strong experiences in the storytelling process. News writing and style principles will be gained through stories produced for campus student media. 3 hrs. lecture/wk.

JOUR 122H   HON: News Writing and Reporting* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

JOUR 125   Fundamentals of Advertising (3 Hours)
Fundamentals of Advertising introduces the student to the contemporary advertising process. Research, planning, creativity, production and media scheduling are discussed, along with individual mediums and their forms, functions and roles in society. Major emphasis is placed on advertising and integrated marketing research, planning and creativity. 3 hrs. lecture/wk.

JOUR 125H   HON: Fundamentals of Advertising* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

JOUR 127   Introduction to Broadcasting (3 Hours)
This course serves students interested in gaining a greater understanding of broadcast and emerging technologies. Class time includes discussion of trends and issues, including regulations, ethics, news and information, and audience ratings. Productions in the college's student media facilities offer opportunities to experience and further evaluate their relationship to broadcast and related electronic media. 3 hrs. lecture/wk.

JOUR 130   Principles of Public Relations (3 Hours)
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. lecture/wk.

JOUR 145   Photojournalism (3 Hours)
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 multimedia. Students will use cameras, computers and software to master the issues, concepts and constraints involved in creating images for a broad range of media. They will prepare and format digitized image files for storage and transmission, and print and Web-based reproduction. 3 hrs. lecture/wk.

JOUR 202   Broadcast Performance (3 Hours)
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. lecture/wk.

JOUR 207   Radio Production (3 Hours)
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.

JOUR 220   International Media (3 Hours)
The globalization of media has created a necessity to understand the complex media systems established overseas. These systems exert influence over the cultural, political and economic climate in the world's industrialized nations. Students in this course will learn about the history, interconnectivity, technological innovations and controversies surrounding media systems from a diverse selection of countries. Special emphasis in this course will be placed on the understanding of global journalism. 3 hrs. lecture/wk.

JOUR 222   Advanced Reporting* (3 Hours)
Prerequisites: JOUR 122.

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. lecture/wk.

JOUR 225   Promotional Writing* (3 Hours)
Prerequisites: JOUR 125 or JOUR 130.

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. lecture/wk.

JOUR 227   Basic Video Production (3 Hours)
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.

JOUR 242   Advanced Broadcast Performance: TV* (3 Hours)
Prerequisites: JOUR 202.

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.

JOUR 247   Advanced Video Production* (3 Hours)
Prerequisites: JOUR 227.

Students will direct, produce, and edit programming for distribution via the college's media outlets. Students will develop the technical skills involved in both studio production and field production as well as advanced skills in camera operations, multi-camera directing, lighting, audio production, and graphics. 3 hrs. lecture/wk.

JOUR 252   Advanced Broadcast Performance II: TV* (3 Hours)
Prerequisites: JOUR 242.

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.

JOUR 257   Advanced Video Production II* (3 Hours)
Prerequisites: JOUR 247.

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.

JOUR 267   Advanced Video Production III* (3 Hours)
Prerequisites: JOUR 257.

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.

JOUR 269   Journalism Internship* (1 Hour)
Prerequisites: Instructor approval; completion of 3 credit hours in journalism/ media communications course at JCCC or other college with a grade of C or higher.

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 Hours)
Prerequisites: Instructor approval; completion of 3 credit hours in journalism/ media communications course at JCCC or other college with a grade of C or higher.

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 Hours)
Prerequisites: Instructor approval; completion of six credit hours in journalism/media communications at JCCC or another college with a grade of "C" or higher in those 6 hours.

A journalism/media internship allows students to gain work experience at an approved training center under staff supervision. Emphasis is on learning new skills related to a particular program or department at a media facility. Students may learn the application of writing techniques needed to produce and broadcast news, and produce advertising or public relations promotional copy. On-the-job training involves approximately 15-20 hrs./wk. by arrangement.

JOUR 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Leadership (LEAD)

Courses

LEAD 130   Leadership Civic Engagement (3 Hours)
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.

LEAD 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Learning Strategies (LS)

Courses

LS 174   Learning Strategies for Math* (1 Hour)
Corequisites: Concurrent enrollment in a math course.

This course teaches thinking and study skills specifically geared toward the learning of math. Students practice these skills on their math textbooks and homework assignments as well as in their math class discussions and lectures. This course also addresses feelings and attitudes that may block math learning and offers strategies and techniques designed to overcome these feelings. 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. 1 hr. lecture/wk.

LS 176   Strategic Learning System* (1 Hour)
Corequisites: Concurrent enrollment in a college lecture course.

In this course, students will learn a series of strategies for processing information from textbooks and lectures and strategies for studying for and taking tests. As the strategies are introduced, students apply them to the content of courses in which they are concurrently enrolled. Upon successful completion of the course, students will have developed a system for learning that can be adapted for use in any learning situation. 1 hr. lecture/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 Hour)
Corequisites: Concurrent enrollment in another college course.

In this course, students learn a series of techniques to help them improve their retention and recall of information needed for success in college courses. These techniques provide a systematic approach to learning and remembering. Students immediately use the techniques to learn information from their other college courses. 1 hr. lecture/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 Hour)
Corequisites: Concurrent enrollment in at least one other college course in which exams are taken.

This course offers students an opportunity to explore their own learning styles and to develop appropriate strategies for improving test performance through improved learning procedures. Emphasis will be on practical application of the learned strategies to courses in which the students are concurrently enrolled. 1 hr. lecture/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 Hours)
Corequisites: Concurrent enrollment in at least one academic college course.

This course provides students with opportunities to develop skills and habits that will help them establish and maintain effective learning systems. Students first learn and practice the learning methods in class and then apply these methods to appropriate situations in their other college coursework. The methods, which are based on valid learning and thinking principles, will help students meet the higher-level demands of the subjects encountered in college courses. 3 hrs. lecture/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)

Courses

LI 130   Introduction to Legal Interpreting* (3 Hours)
Prerequisites: Selective admissions approval.

Corequisites: LI 140.

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 Hours)
Prerequisites: Selective admissions approval.

Corequisites: LI 130.

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 Hours)
Prerequisites: Selective admissions approval and LI 130 and LI 140 (All courses must be completed with a grade of "C" or higher.)

Corequisites: LI 160.

This course develops 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 are stressed. This course is taught in English and Spanish. 3 hrs. lecture/wk.

LI 160   Spanish Legal Interpreting* (3 Hours)
Prerequisites: Selective admissions approval and LI 130 and LI 140 (All courses must be completed with a grade of "C" or higher.)

Corequisites: LI 150.

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 and 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 180   Legal Interpreting Practicum* (2 Hours)
Prerequisites: Selective admissions approval and LI 150 and LI 160.

Prerequisites or corequisites: ADMJ 121 (All courses must be completed with a grade of "C" or higher.)

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 field work are required for this class. 2 hrs. lecture/wk. and 30 hrs. total field study/semester.

Legal Studies (LAW)

Courses

LAW 120   Introduction to Paralegal Studies (3 Hours)
Upon successful completion of this course, the student should be able to describe the paralegal profession and explain the role of the paralegal in a legal environment, including necessary skills, education and training, common duties, and representative tasks. The student should be able to explain the regulation of the legal profession and ethical issues relevant to attorneys and paralegals. The student should be able to draft a professional resume and design an effective job-search strategy. 3 hrs. lecture/wk.

LAW 121   Introduction to Law (3 Hours)
Upon successful completion of this course, the student should be able to describe the structure and organization of the American legal system and explain its role, functions, and legal powers. The student should be able to explain the fundamental principles of the major subject areas of the law, including criminal law, tort law, contract law, business and employment law, family law, property law, and estate planning and probate law. 3 hrs. lecture/wk.

LAW 132   Civil Litigation* (3 Hours)
Prerequisites: Admission to the Paralegal program and LAW 121 or department approval.

Upon successful completion of this course, the student should be able to identify the various sets of court rules that regulate the civil litigation process and explain the stages of a civil lawsuit. The student should be able to describe the role of the paralegal in a civil litigation practice and be able to draft documents commonly used in the civil litigation process. 3 hrs. lecture/wk.

LAW 132H   HON: Civil Litigation* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 134   Introduction to Legal Technology* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should 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 and presentation 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.

LAW 134H   HON: Introduction to Legal Technology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 142   Tort Law* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should be able to explain the major principles of tort law and personal injury litigation. The student should be able to identify the elements of intentional torts, negligence torts and strict liability torts, as well as the types of damages available and defenses to each of these torts. 3 hrs. lecture/wk.

LAW 142H   HON: Tort Law* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 144   Contract Law* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should be able to describe the elements of a contract and explain the formation of a contract. The student should be able to discuss the ways in which a contract is discharged, including discharge by performance or breach, relevant defenses and available remedies. The student should also be able to explain the rights and obligations of third parties to a contract. 3 hrs. lecture/wk.

LAW 148   Criminal Litigation* (3 Hours)
Prerequisites: Admission to the Paralegal Program or department approval.

Upon successful completion of this course, the student should be able to explain the objectives, substantive principles and procedural rules of the criminal process in the Kansas and federal judicial systems. The student should be able to explain the role of the paralegal in criminal litigation practice and draft documents relevant to criminal litigation. 3 hrs. lecture/wk.

LAW 152   Real Estate Law* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should be able to describe the rights of property ownership and public and private limitations on those rights. In addition, the student should be able to describe the common types of real estate transactions, and be able to comprehend and prepare key documents commonly used in a real estate transactions. 3 hrs. lecture/wk.

LAW 162   Family Law* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should be able to describe the substantive and procedural principles of family law, including issues related to adoption, divorce, custody, support and visitation. The student should also be able to draft pleadings, including a petition for divorce, a petition for adoption, decrees, settlement agreements and motions for modification. 3 hrs. lecture/wk.

LAW 162H   HON: Family Law* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 165   Forensic Science and the Law (3 Hours)
Upon successful completion of this course, the student should be able to explain legal constraints on the use of scientific evidence, including U.S. Supreme Court decisions and other legal rules. The student should be able to describe the major fields of forensic science and their applications, and explain current challenges facing the forensic science community and their implications for the application of forensic science to the law. The student should be able to explain career opportunities available to persons interested in a forensic-related career. 3 hrs. lecture/wk.

LAW 195   Legal Research* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should be able to demonstrate sophisticated skills for the retrieval of information from authoritative legal literature sources, including both print and electronic media. The student should be able to manage the research process by utilizing a research model that will enhance the student's efficiency and effectiveness as a legal researcher. 3 hrs. lecture/wk.

LAW 195H   HON: Legal Research* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 201   Advanced Legal Technology* (3 Hours)
Prerequisites: LAW 134 or BOT 106 or department approval.

Upon successful completion of this course, the student should be able to evaluate and use specialized legal software to perform customary tasks within a legal environment, including litigation support, discovery, case management, office management, file management, timekeeping and billing, docket control, and preparation of courtroom presentations. 3 hrs. lecture/wk.

LAW 201H   HON: Advanced Legal Technology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 205   Legal Analysis and Writing* (3 Hours)
Prerequisites: Admission to the Paralegal program. LAW 195 or department approval.

Upon successful completion of this course, the student should be able to analyze case law, statutes and secondary legal authority. The student should be able to communicate research results, analysis and conclusions professionally and effectively. 3 hrs. lecture/wk.

LAW 205H   HON: Legal Analysis and Writing* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 226   Immigration Law* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should be able to explain the various aspects of immigration law. The emphasis in the course is on the functions of the paralegal in an immigration law practice and on the preparation of related documents. 3 hrs. lecture/wk.

LAW 226H   HON: Immigration Law* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 245   Elder Law and Estate Planning* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should be able to explain the legal aspects of aging. The student should be able to discuss financial planning, healthcare, personal planning and protection, taxation, housing and other legal matters affecting the elder client. The student should also be able to articulate the use of wills and trusts in estate planning. 3 hrs. lecture/wk.

LAW 245H   HON: Elder Law and Estate Planning* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 247   Intellectual Property Law* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should be able to explain the types of intellectual property: patent, copyright, trademark and trade secrets. The student should be able to prepare documents related to the protection of intellectual property rights. 3 hrs. lecture/wk.

LAW 247H   HON: Intellectual Property Law* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 266   Employment Law* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should be able to classify the relationship between employer and worker. The student should be able to apply federal and state laws that address equal opportunity, workers' compensation, and employment protections and benefits. 3 hrs. lecture/wk.

LAW 266H   HON: Employment Law* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 269   Bankruptcy Law* (3 Hours)
Prerequisites: Admission to the Paralegal program or department approval.

Upon successful completion of this course, the student should be able to explain the purpose of the federal Bankruptcy Code. The student should be able to prepare bankruptcy forms and documents, especially those related to Chapter 7, Chapter 11 and Chapter 13 bankruptcy filings. 3 hrs. lecture/wk.

LAW 269H   HON: Bankruptcy Law* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 271   Legal Ethics, Interviewing and Investigation* (3 Hours)
Prerequisites: Admission to the Paralegal program. LAW 134 or department approval.

Prerequisites or corequisites: LAW 205.

Upon successful completion of this course, the student should be able to explain ethical rules and standards governing the legal profession, interview clients and witnesses, and investigate the facts as part of a legal analysis or proceedings. A major emphasis will be on recognition of ethical problems commonly encountered and the development of interviewing and investigating skills. The course is also designated as the capstone course for the paralegal program. The course will draw the student's paralegal learning and provide an opportunity to demonstrate that the student has accomplished the program's educational goals. This opportunity will focus on finalizing and reviewing the student's e-portfolio. 3 hrs. lecture/wk.

LAW 271H   HON: Legal Ethics, Interviewing and Investigation* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

LAW 275   Paralegal Internship I* (1 Hour)
Prerequisites: Admission to the Paralegal program. LAW 120 and LAW 121 or department chair approval.

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 practice experience in a legal setting. The student must complete 120 hours of work at the internship site. Obtaining an internship is the responsibility of the individual student.

LAW 276   Paralegal Internship II* (1 Hour)
Prerequisites: Admission to the Paralegal program. LAW 275.

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 practice experience in a legal setting. The student must complete 120 hours of work at the internship site. Obtaining an internship is the responsibility of the individual student.

LAW 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

LAW 292   Special Topics:* (1-3 Hour)
Prerequisites: Admission to the Paralegal program or department approval.

This course periodically offers specialized or advanced discipline-specific paralegal topics related to law not usually taught in the curriculum to interested and qualified students within the program.

Library (LIBR)

Courses

LIBR 125   Introduction to Library Research (1 Hour)

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. 1 hr. lecture/wk.

Marketing Management (MKT)

Courses

MKT 121   Retail Management (3 Hours)
Upon successful completion of this course, the student should be able to describe and analyze retail store organization and operation including customer markets, store location and design, human resource management, merchandise planning and control, and retail promotion. 3 hrs. lecture/wk.

MKT 121H   HON: Retail Management* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MKT 134   Professional Selling (3 Hours)
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.

MKT 146   Introduction to Social Media Marketing (3 Hours)
Students in this course will survey usage of social media for marketing purposes. This course will study the relevance and importance of new and emerging marketing processes within social media. Students will analyze basic practical social media as well as learn "best practices" and use different social media throughout the class to create content. 3 hrs. lecture/wk.

MKT 150   Introduction to Insurance (3 Hours)
The student will gain a foundation in the insurance industry. The course provides information on types of insurance, providers, the regulatory environment and performance measures. The course will address the functions of marketing, underwriting and claims within the industry. The course will provide an overview of the insurance contract, including terminology and industry-related clauses. Upon successful completion of this course, a student should be prepared to take the appropriate licensing exam. 3 hrs. lecture/wk.

MKT 180   Experiential Marketing (3 Hours)
This course consists of a series of hands-on experiences designed to help students identify and enhance skills needed as a marketing professional. Each experience will give students the opportunity to apply knowledge gained in prior class work toward the management of real-world marketing positions, as well as prepare them for the job search. Students will acquire this applied experience in appropriate business situations through the development and implementation of an individualized professional development plan, job shadowing, involvement in professional marketing associations and events, informational interviews, a marketing simulation, the development of materials to support a job search, and analysis of/reflection on these activities. 3 hrs. lecture/wk.

MKT 202   Consumer Behavior (3 Hours)
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 202H   HON: Consumer Behavior* (1 Hour)
Prerequisites: Honors Department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MKT 205   eMarketing (3 Hours)
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 Hours)
Prerequisites: MKT 134.

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 Hours)
Upon successful completion of this course, the student should be able to explain the concepts of production, consumption and distribution in relation to a free enterprise economy; list the basic channels of distribution available to the manufacturer of consumer and industrial products; explain and compare the distribution functions of the manufacturer, wholesaler and retailer; and state the procedures necessary to develop a total marketing plan for a given product, service or product line. In addition, the student should be able to discuss the fundamental principles of consumer behavior in the buying process and apply those principles to target market strategies. 3 hrs. lecture/wk.

MKT 230H   HON: Marketing* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MKT 234   Services Marketing* (3 Hours)
Prerequisites or corequisites: MKT 230.

Upon successful completion of this course, the student should be able to describe the functioning of a services economy. In addition, students should be able to describe and define the nature and characteristics of services and the way services are required to be marketed because of their intangible core. Additionally, students should be able to describe service quality, the foundation of services marketing and the success factors in services marketing. 3 hrs. lecture/wk.

MKT 240   Advertising and Promotion (3 Hours)
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 275   Marketing Analytics and CRM (Customer Relationship Management) (3 Hours)
This course will focus on the principles and strategic concepts of marketing analytics and customer relationship management (CRM). Digital marketing analytics uses digital models and metrics to improve marketing decisions and return on marketing investment (ROMI). Students will analyze the most up-to-date technologies in digital data analytics, automated marketing, database management and CRM, as well as the role of business intelligence based on data in this process. Furthermore, the student will interpret the value of analytics and CRM in uncovering the human element in data and discovering behavioral insights that lead to higher profits. At the core of this class is the application of database marketing and maintaining profitable customer relationships. 3 hrs. lecture/wk.

MKT 284   Marketing Management Internship I (1 Hour)
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 48 hours, per semester, of on-the-job training is required.

MKT 286   Marketing Management Internship II* (1 Hour)
Prerequisites: MKT 284.

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. This course offers work experience under instructional supervision in an approved training situation designed to provide practical experience in marketing and management. A minimum of 48 hours, per semester, of on-the-job training is required.

MKT 290   Capstone: Marketing Management* (3 Hours)
Prerequisites: MKT 134 and MKT 205 and MKT 230 or department approval.

Prerequisites or corequisites: MKT 180.

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. The student will finalize a resume and marketing portfolio. 3 hrs. lecture/wk.

MKT 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

MKT 292   Special Topics: (1-3 Hour)
This course offers specialized or advanced discipline-specific content related to diverse areas of Marketing Management. Special Topics may be repeated for credit, but only on different topics. The course is structured to allow current marketing topics to be explored as an industry-valued skillset.

Mathematics (MATH)

Courses

MATH 111   Fundamentals of Mathematics* (3 Hours)
Prerequisites: AAC 112 with a grade of "C" or higher or appropriate score on the math placement test.

Fundamentals of Mathematics is designed for the student who needs to improve or review basic math skills and concepts. This course includes computation using integers, fractions, decimals, proportions and percents along with an overview of 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 is the first in a sequence of courses leading to MATH 116 or higher. 3 or 5 hrs. lecture/wk.

MATH 115   Elementary Algebra* (3 Hours)
Prerequisites: MATH 111 with a grade of "C" or higher or appropriate score on the math placement test.

This is a beginning course in algebra, designed to help students acquire a solid foundation in the basic skills of algebra. Students will learn to simplify arithmetic and algebraic expressions, including exponential expressions, polynomials, rational expressions and radical expressions; solve equations and inequalities, including linear equations and quadratic equations; graph linear equations; and analyze linear equations. This course is the first in a sequence of courses leading to MATH 116 or higher. 3 or 5 hrs. lecture/wk.

MATH 116   Intermediate Algebra* (3 Hours)
Prerequisites: MATH 115 with a grade of "C" or higher or appropriate score on the math placement test.

This course focuses on arithmetic and algebraic manipulation, equations and inequalities, graphs, and analysis of equations and graphs. Students will simplify arithmetic and algebraic expressions, including those containing rational expressions, rational exponents, radicals and complex numbers; solve equations and inequalities including linear, quadratic, quadratic in form, as well as those containing rational expressions, radicals or absolute value; graph linear inequalities; and analyze functions and non-functions. 3 or 5 hrs.lecture/wk.

MATH 118   Geometry* (3 Hours)
Prerequisites: MATH 115 with a grade of "C" or higher or appropriate score on the math placement test.

This course is an informal approach to geometry. Topics will include lines, polygons, area, volume, circles, similarity, congruence and coordinate geometry. 3 hrs. lecture/wk.

MATH 120   Business Mathematics* (3 Hours)
Prerequisites: MATH 111 with a grade of "C" or higher or appropriate score on the math placement test.

This is a course for the student who needs specific skills in mathematics to address business problems and business applications. Students will learn the mathematics involved in payroll, retailing, asset valuation, interest, finance, and the time value of money. Students will use a calculator and computer to solve a variety of applications. 3 hrs. lecture/wk.

MATH 130   Technical Mathematics I* (3 Hours)
Prerequisites: MATH 111 with a grade of "C" or higher or an appropriate score on the math placement test.

This course is the first of a two-semester sequence that will introduce the mathematical skills and concepts necessary in technical work. It will focus on the basics of algebra, geometry and their applications. Topics will include operations with polynomials, linear equations, systems of equations, formulas and basic geometry. 3 hrs. lecture/wk.

MATH 131   Technical Mathematics II* (3 Hours)
Prerequisites: MATH 130 with a grade of "C" or higher or an appropriate score on a placement test.

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.

MATH 165   Finite Mathematics* (3 Hours) nbsp;
Prerequisites: MATH 116 with a grade of "C" or higher or appropriate score on the math placement test.

This course will emphasize the beauty, scope, practical applications and relevance of mathematics. It is designed to involve the students with the concepts as well as quantitative skills. Topics include set theory, symbolic logic, deductive reasoning, probability, statistics, mathematics of finance, systems of equations, matrix algebra and linear programming. 3 hrs. lecture/wk.

MATH 171   College Algebra* (3 Hours) nbsp;
Prerequisites: MATH 116 with a grade of "C" or higher or appropriate score on the math placement test.

This course focuses on the study of functions and their graphs, techniques of solving equations and applications. Students will analyze and graph functions, including constant, linear, quadratic, piecewise-defined, absolute value, square root, polynomial, rational, exponential and logarithmic functions and non-functions; solve equations and inequalities, including polynomial equations, absolute value equations, radical equations, rational equations, exponential equations, logarithmic equations, systems of linear and non-linear equations and systems of linear inequalities; and apply functions in real-world situations. 3 or 5 hrs./wk.

MATH 171H   HON: College Algebra* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 172   Trigonometry* (3 Hours) nbsp;
Prerequisites: MATH 171 with a grade of "C" or higher or appropriate score on the math placement test.

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. lecture/wk.

MATH 172H   HON: Trigonometry* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 173   Precalculus* (5 Hours)
Prerequisites: MATH 116 with a grade of "C" or higher or appropriate score on the math placement test.

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. lecture/wk.

MATH 173H   HON: Precalculus* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 175   Discrete Mathematics and its Applications* (3 Hours)
Prerequisites: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on the math placement test.

This course is designed to present the beauty, scope, practical applications and relevance of mathematics. It will focus on applications of general interest drawn primarily from the social and biological sciences and business. Topics will be placed in a historical context, and mathematical reasoning will be stressed. 3 hrs. lecture/wk.

MATH 181   Statistics* (3 Hours) nbsp;
Prerequisites: MATH 171 or MATH 173 or an equivalent course with a grade of "C" or higher or appropriate score on the math placement test.

This is a beginning course in statistical analysis, the skill of making sense of raw data, constructing graphical representations of data, developing models for making predictions, performing tests to determine significant change and finding intervals for population values. Students will learn the basics of descriptive statistics, probability, sampling, confidence intervals, distributions, hypothesis testing, regression and correlation. Use of technology will be incorporated into course topics. 3 hrs. lecture/wk.

MATH 181H   HON: Statistics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 191   Math and Physics for Games I* (4 Hours)
Prerequisites: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on math placement test and GAME 121.

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.

MATH 191H   HON: Math and Physics for Games I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 210   Mathematics for Elementary Teachers I* (3 Hours)
Prerequisites: MATH 171 or MATH 173 with a grade of "C" or higher or appropriate score on math placement test.

This is the first of a two-course sequence for prospective teachers of elementary and middle school mathematics. The focus of this course is an in-depth investigation of the mathematical principles and concepts encountered in grades K-8. Topics include set theory, numeration systems, number sense, critical thinking, and problem-solving strategies. The use of appropriate techniques and tools, such as calculators, computers and manipulatives, will be integrated throughout the course in order to enhance the depth of understanding. 3 hrs. lecture/wk.

MATH 212   Math for Elementary Teachers II* (3 Hours)
Prerequisites: MATH 210 with a grade of "C" or higher or department approval.

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.

MATH 214   Introduction to Teaching Math and Science I* (1 Hour)
Prerequisites: MATH 171 with a grade of "C" or higher OR appropriate score on the math placement test OR department approval.

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. 1.25 hrs. lecture/wk.

MATH 215   Introduction to Teaching Math and Science II* (1 Hour)
Prerequisites: ASTR 214 or BIOL 214 or CHEM 214 or GEOS 214 or MATH 214 or PHYS 214 or PSCI 214 with a grade of "C" or higher.

Students learn about the middle school environment and work on math and science inquiry-based lesson analysis, design and assessment. Student partners will plan and teach three inquiry-based lessons in a middle school. The course emphasizes writing 5E lesson plans with a focus on the importance of using appropriate questioning and assessment strategies throughout the lesson, as well as how to analyze and modify a lesson based on personal reflections and observer feedback. By the completion of the course, students should be able to reflect on their personal suitability/interest in teaching secondary math or science, and develop a feasible pathway to a career in teaching. MATH 215, ASTR 215, BIOL 215, CHEM 215, GEOS 215, PHYS 215 and PSCI 215 are the same course; enroll in only one. 1.25 hrs. lecture/wk.

MATH 231   Business and Applied Calculus I* (3 Hours) nbsp;
Prerequisites: MATH 171 or MATH 173 with a grade of "C" or higher or an appropriate score on a placement test.

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. lecture/wk.

MATH 231H   HON: Business and Applied Calculus I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 232   Business and Applied Calculus II* (3 Hours)
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.

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. lecture/wk.

MATH 232H   HON: Business and Applied Calculus II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 241   Calculus I* (5 Hours) nbsp;
Prerequisites: Either (MATH 171 and MATH 172 with a grade of "C" or higher) or MATH 173 with a grade of "C" or higher or an appropriate score on a placement test.

This is the first of a three-semester sequence on calculus designed for engineering, physics and math majors. Rates of change and areas 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. lecture/wk.

MATH 241H   HON: Calculus I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 242   Calculus II* (5 Hours)
Prerequisites: MATH 241 with a grade of "C" or higher.

This is the second course of a three-semester sequence on calculus. Integration is covered with an emphasis on analytical, numerical, and graphical methods. Techniques of integration are used to solve scientific and geometric applications. Infinite series are analyzed for convergence and applied to the representation of functions. 5 hrs. lecture/wk.

MATH 242H   HON: Calculus II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 243   Calculus III* (5 Hours)
Prerequisites: MATH 242 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher.

This is the third course in a three-semester sequence on analytic geometry and calculus. Topics include vector-valued functions, functions of several variables, multiple integration, and vector analysis. 5 hrs. lecture/wk.

MATH 243H   HON: Calculus III* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 246   Elementary Linear Algebra* (3 Hours)
Prerequisites: MATH 242 or an equivalent course with a grade of "C" or higher.

This sophomore-level introduction to linear algebra uses a matrix-oriented approach, with an emphasis on problem solving and applications. The course focus is on matrix arithmetic, systems of linear equations, properties of Euclidean n-space, eigenvalues and eigenvectors, orthogonality and vector spaces. Students are expected to use technology for matrix operations. 3 hrs. lecture/wk.

MATH 246H   HON: Elementary Linear Algebra* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 254   Differential Equations* (4 Hours)
Prerequisites: MATH 243 with a grade of "C" or higher or an equivalent course with a grade of "C" or higher.

This course will cover standard types of equations that involve rates of change. In particular, this is an introductory course in equations that involve ordinary derivatives. Both qualitative and quantitative approaches will be used. Standard types and methods will be covered, including Laplace transforms, infinite series, and numerical methods. Basic linear algebra will be developed to solve systems of differential equations. 4 hrs. lecture/wk.

MATH 254H   HON: Differential Equations* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MATH 285   Statistics for Business* (4 Hours)
Prerequisites: MATH 231 or MATH 241 or an equivalent course with a grade of "C" or higher Note: Students transferring MATH 285 to the University of Kansas must have CIS 201 as a corequisite.

This is a beginning course in calculus-based statistical analysis with an emphasis on applications to business. The skill of making sense of raw data is important, and includes 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, hypothesis testing, linear regression, and an introduction to quality control. Students must have an understanding of calculus concepts in order to successfully complete this course. 4 hrs. lecture/wk. Students transferring MATH 285 to KU must have CIS 201 as a corequisite.

MATH 292   Special Topics:* (1-3 Hour)
Prerequisites: Department approval.

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.

Med Info & Revenue Management (MIRM)

Courses

MIRM 140   Fundamentals of Health Records (2 Hours)
This course introduces students to foundational concepts in the management, storage, retrieval and use of health information in healthcare settings. Instruction focuses on the content and uses of health records, professional roles within the health information profession and accreditation and regulatory requirements in the management of health information. 2 hrs. lecture/wk.

MIRM 141   Computer Systems for Health Information Management Professionals* (3 Hours)
Prerequisites: HCIS 255.

This course introduces students to various information systems and technologies used in non-clinical and clinical areas of healthcare. Students will also explore the emergence of electronic health records and health information exchange activities, as well as the health policy environment influencing the use of technology in healthcare. Simulation using health information systems, electronic health records, administrative information systems and encoder software is embedded in this course to provide insight into health information management operations. The importance of data quality as a foundation to meaningful information within healthcare information systems is emphasized. 3 hrs. lecture/wk.

MIRM 142   Legal and Ethical Issues in Healthcare (3 Hours)
This course introduces the U.S. legal system, laws and ethical issues and how they relate to healthcare. 3 hrs. lecture/wk.

MIRM 143   Coding Classification Systems I* (3 Hours)
Prerequisites: BIOL 144 and HC 130 and MIRM 140.

This course focuses on the International Classification of Diseases 9th revision clinical modification (ICD-9-CM), as well as the 10th revision clinical modification and procedural coding system (ICD-10-CM/PCS) used in medical coding. Students will learn the role of ICD-9-CM and ICD-10-CM/PCS in coding for inpatient healthcare encounters, as well as the use of ICD-9-CM and ICD-10-CM codes for diagnosis coding in ambulatory and physician service settings. Students will examine the evolution from ICD-9-CM to ICD-10-CM/PCS in the United States, as well as compare and contrast between the 9th and 10th revisions of ICD. Instruction focuses on the importance of ethical conduct for coding professionals. 3 hrs. lecture/wk. This course is taught in the fall semester.

MIRM 144   Coding Classification Systems II* (3 Hours)
Prerequisites: MIRM 143.

This course focuses on Current Procedural Terminology (CPT) and Healthcare Common Procedure Coding System (HCPCS) coding classification systems. Students learn the role of CPT and HCPCS in coding for outpatient services and procedures, as well as physician services. Instruction focuses on the importance of ethical conduct for coding professionals. 3 hrs. lecture/wk. This course is taught in the spring semester.

MIRM 145   Reimbursement Methodologies* (3 Hours)
Prerequisites: MIRM 143.

This course examines healthcare reimbursement and financing in the United States. Course content focuses on the role of third-party payers, regulatory and health policy influences and the role of coding and reimbursement professionals in the revenue cycle. Legal and ethical dilemmas related to the reimbursement process are also discussed. 3 hrs. lecture/wk.

MIRM 146   Coding Classification Systems III* (3 Hours)
Prerequisites: MIRM 144.

This course focuses on intermediate-level content related to diagnosis and procedure coding. Students will build upon entry-level knowledge of diagnosis and procedure coding for hospitals, ambulatory healthcare settings and physician services. Students will apply this knowledge to more complex coding topics and exercises. Instruction focuses on the importance of ethical conduct for coding professionals. 3 hrs. lecture/instructional lab/wk. This course is taught in the fall semester.

MIRM 147   Introduction to Pharmacology* (2 Hours)
Prerequisites: BIOL 144 and HC 130.

This course introduces basic concepts of pharmacology and provides an overview of various types of medications. Students will also examine common medical conditions categorized by body system and identify commonly used pharmacologic treatments. An explanation of how assorted medications work within the body will be provided. After successful completion of this course, students will be able to comprehend health record documentation pertaining to medications and their uses in patient care. 2 hrs. lecture/wk.

MIRM 148   Medical Coding Internship* (1 Hour)
Prerequisites or corequisites: MIRM 146 and department approval.

This internship provides students with real-world coding experience in a healthcare facility. Students will shadow professional coders, as well as practice coding for a 40-hour work week. This internship also introduces students to various departments and professionals whose job functions relate to the work of medical coders through tours and interviews in the healthcare facility, with approximately 8 hours spent in this capacity. Students will prepare a daily journal describing their internship experiences. This internship includes 48 hours of internship responsibilities. A background check will be conducted on each student for internship placement purposes. Some healthcare facilities may require TB skin tests and/or drug screens for interns.

Metal Fabrication and Welding (MFAB)

Courses

MFAB 124   Introduction to Welding (3 Hours)
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.

MFAB 128   Basic Machine Tool Technology (3 Hours)
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, 4 hrs. lab/wk.

MFAB 131   Shielded Metal Arc Welding (SMAW) I* (3 Hours)
Prerequisites: MFAB 124.

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.

MFAB 133   Gas Metal Arc Welding (GMAW) I* (3 Hours)
Prerequisites: MFAB 120 or MFAB 124 or MFAB 127.

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.

MFAB 136   Gas Tungsten Arc Welding (GTAW) I* (3 Hours)
Prerequisites: MFAB 124.

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.

MFAB 140   Maintenance Repair Welding* (3 Hours)
Prerequisites: MFAB 131 and MFAB 133 and MFAB 136.

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.

MFAB 152   Manufacturing Materials and Processes (3 Hours)
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 Hours)
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. 2 hrs. lecture/wk.

MFAB 203   Introduction to Ornamental Iron* (3 Hours)
Prerequisites: MFAB 131 and MFAB 133 and MFAB 136.

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.

MFAB 205   Shielded Metal Arc Welding (SMAW) II* (3 Hours)
Prerequisites: MFAB 131.

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.

MFAB 210   Gas Metal Arc Welding (GMAW) II* (3 Hours)
Prerequisites: MFAB 133.

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.

MFAB 215   Fabrication Practices I* (3 Hours)
Prerequisites: MFAB 131 and MFAB 133 and MFAB 136.

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.

MFAB 220   Flux Core Arc Welding (FCAW)* (3 Hours)
Prerequisites: MFAB 133.

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.

MFAB 240   Metallurgy (2 Hours)
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 Hours)
Prerequisites: MFAB 136.

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.

MFAB 250   Fabrication Practices II* (3 Hours)
Prerequisites: MFAB 215.

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.

MFAB 255   Advanced Machine Tool Technology* (3 Hours)
Prerequisites: MFAB 128.

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 are 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. 5 hrs. integrated lecture/lab/wk.

MFAB 259   Shielded Metal Arc Welding (SMAW) III* (3 Hours)
Prerequisites: MFAB 205.

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.

MFAB 271   Metal Fabrication Internship* (3 Hours)
Prerequisites: Department approval.

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual work situation. The internship will provide advanced students with on-the-job experience under the supervision of professionals in the industry. The work will be developed cooperatively with area employers, college staff and each student to provide a variety of actual job experiences directly related to the student's career goals. 1 hrs. lecture, 15 hrs. minimum on-the-job training/wk.

MFAB 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Music (MUS)

Courses

MUS 121   Introduction to Music Listening (3 Hours)
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. lecture/wk.

MUS 123   Introduction to Music Fundamentals (2 Hours)
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. lecture/wk.

MUS 125   Introduction to Jazz Listening (3 Hours)
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. lecture/wk.

MUS 126   Introduction to World Music (3 Hours)
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 Hours)
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 Hours)
Prerequisites: MUS 123 recommended, but not required.

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. lecture/wk.

MUS 132   Sight-Singing and Ear Training II* (2 Hours)
Prerequisites: MUS 131.

This course is a continuation of the class Sight-singing and Ear Training I. The content is designed to complement the Harmony II course though it is not necessary they be taken in the same semester. 2 hrs. lecture/wk. This course is typically taught in the spring semester.

MUS 141   Music Theory: Harmony I* (3 Hours) nbsp;
Prerequisites: MUS 123 recommended, but not required.

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. lecture/wk.

MUS 141H   HON: Music Theory: Harmony I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MUS 142   Music Theory: Harmony II* (3 Hours)
Prerequisites: MUS 141 or passing equivalency test.

Harmony II is a continuation of the study of the harmonic system used in music composed from 1650 to 1900 and still in use in certain areas of music composition. The course covers use of non-harmonic tones, supertonic and dominant sevenths, functions of the submediant and mediant triads, advanced melodic writing and secondary dominant chords. Student will learn to harmonize melodies at the keyboard and play simple chord progressions on the piano. Music of the period will be analyzed. Selected software programs will enhance student skills and understanding. 3 hrs.lecture/wk. This course is typically taught in the spring semester.

MUS 142H   HON: Music Theory: Harmony II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MUS 143   Music Theory: Harmony III* (3 Hours)
Prerequisites: MUS 142 or passing equivalency test.

This is a continuation of the study of the harmonic system used in all music composed from 1650 to 1900 and still in use in many areas of music composition today. Important topics include devices of modulation, binary and ternary, and 12 bar blues musical forms and application of part writing procedures to instrumental music. Particular attention will be paid to the nature and functions of diatonic seventh chords, secondary dominants, borrowed chords and Neopolitan chords. Students will work with keyboard harmony exercises of increasing difficulty. Selected software programs will enhance student skills and understanding. 3 hrs. lecture/wk.

MUS 145   Jazz/Commercial Music Theory I* (3 Hours)
Prerequisites: MUS 141.

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 Hour)
Prerequisites: Audition required.

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs. integrated lecture/lab/wk.

MUS 152   Mixed Vocal Ensemble II* (1 Hour)
Prerequisites: MUS 151 and audition required.

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs. integrated lecture/lab/wk.

MUS 153   Mixed Vocal Ensemble III* (1 Hour)
Prerequisites: MUS 152 and audition required.

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs. integrated lecture/lab/wk.

MUS 154   Mixed Vocal Ensemble IV* (1 Hour)
Prerequisites: MUS 153 and audition required.

Choral ensembles are open to participation by the student body. Choral experience or skill is desired in some ensembles but not in others. The ensemble will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. The literature will be specific to the nature of the group and the skills of the students involved. 3 hrs. integrated lecture/lab/wk.

MUS 155   Introduction to the Recording Studio (2 Hours)
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 Hours)
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 Hours)
Prerequisites: MUS 155 or MUS 156.

Introduction to Digital Audio is designed to further develop skills acquired in MIDI Music Composition I. Students will practice using ProTools digital audio software, combined with a digital audio interface to record, edit and play back music. Students will be introduced to basic concepts of sound, and common audio effects, including reverb, delay and compression. Students will also further develop their compositional skills through demonstration and practice, and create audio recordings of their music. 2 hrs. lecture, 2 hrs. lab/wk.

MUS 158   Recording Studio I* (4 Hours)
Prerequisites: MUS 157.

This course is designed to develop both the creative abilities and technical skills needed to produce music using modern digital recording techniques and equipment. Students will acquire an increased proficiency with the operation of ProTools, the industry standard digital audio software, and the corresponding digital audio hardware. Students will demonstrate knowledge of microphone types and techniques by conducting simple recording sessions, from set-up to final mix. 3 hrs. lecture, 2 hrs. lab/wk.

MUS 159   Recording Studio II* (4 Hours)
Prerequisites: MUS 158.

This course is designed for the student interested in the continued development of the creative abilities and technical skills needed to produce music using modern digital recording techniques and equipment. Students will understand simple copyright types and procedures, and create an itemized budget to establish a digital project studio. Students will demonstrate advanced knowledge of ProTools, and apply final mastering techniques in order to compile a portfolio of original music for personal, academic or professional purposes. 3 lecture, 2 hrs. lab/wk.

MUS 160   Recording Studio Lab* (2 Hours)
Prerequisites: MUS 158.

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.

MUS 161   Chamber Choir I* (1 Hour)
Prerequisites: Audition required.

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs. integrated lecture/lab/wk.

MUS 162   Chamber Choir II* (1 Hour)
Prerequisites: MUS 161 and audition.

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs. integrated lecture/lab/wk.

MUS 162H   HON: Chamber Choir II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

MUS 163   Chamber Choir III* (1 Hour)
Prerequisites: MUS 162 and audition.

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs. integrated lecture/lab/wk.

MUS 164   Chamber Choir IV* (1 Hour)
Prerequisites: MUS 163 and audition.

This auditioned choral ensemble is open to participation by the student body. Prior choral experience or a reasonable level of music reading and vocal technique is necessary. The choir will learn a varied body of choral materials from the choral traditions of both past and present, performing at student and community activities. 3 hrs. integrated lecture/lab/wk.

MUS 165   Music Composition I* (1 Hour)
Prerequisites: MUS 141 or department approval.

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 Hour)
Prerequisites: MUS 165.

This is an intermediate-level course for students seeking instruction in the craft of musical composition. Traditional compositional techniques and concepts will be studied through demonstration and practice. Students will learn to use a computer to notate their compositions, will begin to work with tonal harmony, will write music for a trio and/or quartet, and will have a piece performed during a music department recital. 1 hr. lecture/wk.

MUS 167   Music Composition III* (1 Hour)
Prerequisites: MUS 166.

This class is an intermediate-level course for the student seeking instruction in the craft of musical composition. Traditional compositional techniques and concepts will be studied through demonstration and practice. Students will enhance their ability to use a computer to notate their compositions, will begin to work with nonfunctional tonal harmony, will write music for SATB choir or for vocal soloist, and will have a piece performed during a music department recital. 1 hr. lecture/wk.

MUS 169   Voice Class I (2 Hours)
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 Hours)
Prerequisites: MUS 169.

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 175   Songwriting* (2 Hours)
Prerequisites: Department approval.

Songwriting is intended for students that seek instruction in the craft of writing popular songs. Students will learn through demonstration, practice and group critiques, the basic skills of songwriting. These skills include the study of form, lyrics, melodic lines and harmony, and the preparation of charts. Students must be able to play an instrument and/or sing well enough to demonstrate their work. 1 hr. lecture, 1.5 hr. instructional lab/wk.

MUS 176   Jazz Band I* (1 Hour)
Prerequisites: Audition required.

This is an entry-level course in the jazz band performing format for the student with little or no experience in this course of study. The student will learn, through rehearsal and performance, the basic elements of music and how these are utilized in the jazz band. Topics will include simple rhythms, basic melodic construction and major scale construction. 3 hrs. integrated lecture/lab/wk.

MUS 177   Jazz Band II* (1 Hour)
Prerequisites: MUS 176 or audition required.

This is a beginning-level course for the student with at least one semester of prior jazz band experience. Through rehearsal and performance, the student will learn beginning elements of music as applied to the jazz band performing format. Topics covered will include syncopated rhythm, Dorian minor scales and blues form. 3 hrs. integrated lecture/lab/wk.

MUS 178   Jazz Band III* (1 Hour)
Prerequisites: MUS 177 and audition required.

This is an intermediate-level course for the student with at least two semesters of prior jazz band experience. Through rehearsal and performance, the intermediate levels of jazz band performance will be learned. Topics covered will include Latin style, Mixolydian scales and the 32-bar song form. 3 hrs. integrated lecture/lab/wk.

MUS 179   Jazz Band IV* (1 Hour)
Prerequisites: MUS 178 and audition required.

This is an advanced-level course for the student with at least three semesters of prior jazz band experience. Advanced elements of jazz music will be learned through rehearsal and performance. Topics covered will include Lydian scales and ensemble performance techniques. 3 hrs. integrated lecture/lab/wk.

MUS 185   Live Sound Production I (3 Hours)
This course is designed to teach the basic elements of sound, and the equipment and set-ups required to operate sound at live venues, like churches, live theaters or live musical venues. Students will learn techniques through demonstration, lecture and "hands-on" exercises in a professional facility. 4 hrs. integrated lecture/lab/wk.

MUS 186   Live Sound Production II* (3 Hours)
Prerequisites: MUS 185.

This course is designed to build upon and put into practice concepts learned in Live Sound Production I. Students will study "front of house" methods, monitoring practices, communication systems and troubleshooting. Students will also apply learned concepts to alternate sound systems through "hands-on" practicums. 4 hrs. integrated lecture/lab/wk.

MUS 187   Jazz Improvisation I* (2 Hours)
Prerequisites: Audition.

This is an entry-level course for the student with little or no jazz improvisation experience. Through written work and performance on the instrument of choice, the student will learn the basic elements of jazz improvisation. Topics to be covered will include identification and performance of basic intervals, major scales, Dorian modes, Mixolydian modes, major seventh chords, minor seventh chords, dominant seventh chords and the basic blues form. 2 hrs. integrated lecture/lab/wk.

MUS 188   Jazz Improvisation II* (2 Hours)
Prerequisites: MUS 187 and audition required.

This is an advanced-level course for the student with at least one semester of jazz improvisation. Through performance on the chosen instrument and written studies, the student will learn advanced concepts of jazz improvisation. Topics to be covered include jazz performance style, construction of the improvised solo and 32-bar song form. 2 hrs. integrated lecture/lab/wk.

MUS 191   Concert Band I* (1 Hour)
Prerequisites: Audition required.

This is an entry-level course in the concert band format for the student with little or no concert band experience. Students will learn the basic elements of music as related to the concert band through rehearsal and performance. Topics include counting and subdividing motifs into melodies; and differentiating between major and minor tonalities. 3 hrs. integrated lecture/lab/wk.

MUS 192   Concert Band II* (1 Hour)
Prerequisites: MUS 191 and audition required.

This is a beginning-level course in the concert band format for the student with at least one semester of prior concert band experience. Students will learn the beginning-level elements of music as related to the concert band through rehearsal and performance. Topics to be covered include odd meters, minor scales and homophonic texture. 3 hrs. integrated lecture/lab/wk.

MUS 193   Concert Band III* (1 Hour)
Prerequisites: MUS 192 or audition required.

This is an intermediate course for the student with at least two semesters of prior concert band experience. Through rehearsal and performance, the student will learn intermediate levels of the elements of music in the concert band format. Topics will include parade march style, concert march style and concert overture style. 3 hrs. integrated lecture/lab/wk.

MUS 194   Concert Band IV* (1 Hour)
Prerequisites: MUS 193 or audition required.

This is an advanced course for the student with at least three semesters of prior concert band performing experience. Through rehearsal and performance, the student will learn the advanced concepts of concert band performance. Topics will include polyphonic texture, concert suite style and medley style. 3 hrs. integrated lecture/lab/wk.

MUS 195   Vocal Jazz Ensemble I* (1 Hour)
Prerequisites: Audition required.

This is an entry-level course in the vocal jazz performing format. Through rehearsal and public performance, the student will learn the basic elements of music as applied to vocal jazz. Topics will include 8th note swing, jazz syncopation and 32-bar song form. 3 hrs. integrated lecture/lab/wk.

MUS 196   Vocal Jazz Ensemble II* (1 Hour)
Prerequisites: MUS 195 and audition required.

This is a beginning-level course in the vocal jazz performing format. Through rehearsal and public performance, the student will learn the basic elements of music as applied to vocal jazz. Topics will include Dorian minor scales, Mixolydian scales and 12-bar blues form. 3 hrs. integrated lecture/lab/wk.

MUS 201   Chamber Ensemble I* (1 Hour)
Prerequisites: Audition required.

This is an entry-level course for the student with little or no experience in the chamber ensemble performing format. Through written work and performance on the chosen instrument, the student will learn the basic fundamentals of this performing medium. Topics to be covered will include tone quality, intervals and rhythmic patterns. 2 hrs. integrated lecture/lab/wk.

MUS 202   Chamber Ensemble II* (1 Hour)
Prerequisites: MUS 201 or placement by instructor.

This is a beginning-level course for the student with at least one semester of experience in the chamber ensemble performing format. Through written work and performance on the chosen instrument the student will learn the basic fundamental of this performing medium. Topics to be covered will include minor scales, chord construction and compound rhythms. 2 hrs. integrated lecture/lab/wk.

MUS 203   Chamber Ensemble III* (1 Hour)
Prerequisites: MUS 202 or placement by instructor.

This is an intermediate-level course for the student with at least two semesters of chamber ensemble experience. Through written work and performance on the chosen instrument, the student will learn intermediate-advanced concepts of chamber ensemble performance. Topics to be covered include sight reading, intonation and style. 2 hrs. integrated lecture/lab/wk.

MUS 204   Chamber Ensemble IV* (1 Hour)
Prerequisites: MUS 203 or placement by instructor.

This is an advanced-level course for the student with at least three semesters of prior ensemble experience. Through performance on the chosen instrument, the student will learn the advanced concepts of chamber ensemble performance. Topics to be covered will include balance and cooperative expression. 2 hrs. integrated lecture/lab/wk.

MUS 221   Piano Class I (2 Hours)
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 Hours)
Prerequisites: MUS 221 and department approval required.

This is a beginning-level course that provides a basic knowledge of keyboard instruments. Students will learn and review musical terminology, musical notation and symbols, and specific piano-related terminology. Topics covered will include major and minor key signatures; exercises and repertoire using major and minor scales; exercises and repertoire using major, minor, diminished and augmented triads in root position and inversions; chord progressions; ensemble playing of two to four parts; and use of the damper pedal. This course is the continuation of MUS 221. Completion of this course should precede Applied Piano I. This course is for beginners able to progress at a fast pace, students with minimal previous experience or students who have completed MUS 221. 2 hrs./wk.

MUS 223   Piano Class III* (2 Hours)
Prerequisites: MUS 222 or department approval.

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 226   Applied Guitar I (Class) (1 Hour)
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 Hour)
Prerequisites: MUS 226 or department approval.

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 231   Applied Voice I (Private) (1 Hour)
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 Hour)
Prerequisites: MUS 231.

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 Hour)
Prerequisites: MUS 232.

This course uses private lessons to continue instruction in beginning intermediate vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

MUS 234   Applied Voice IV (Private)* (1 Hour)
Prerequisites: MUS 233.

This course uses private lessons to continue instruction in intermediate vocal technique, vocal vocabulary, performance experience and solo vocal repertoire.

MUS 236   Applied Piano I (Private) (1 Hour)
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 Hour)
Prerequisites: MUS 236.

This is a beginning-level course for the student with at least one semester of prior applied piano study. Students will learn the intermediate-level concepts of piano performance. Topics to be covered will include major scales and the natural and harmonic forms of the minor scales, rhythmic patterns and subdivisions of duple and triple meter and the basic keyboard literature of the intermediate level.

MUS 238   Applied Piano III (Private)* (1 Hour)
Prerequisites: MUS 237.

This is an intermediate-level course for the student with at least two semesters of prior applied piano study. Students will learn the intermediate-level concepts of piano performance. Topics to be covered will include scale, the melodic form of the minor scale, rhythmic patterns and subdivisions of compound meter, and the basic keyboard literature of the intermediate level.

MUS 239   Applied Piano IV (Private)* (1 Hour)
Prerequisites: MUS 238.

This is an advanced-level course for the student with at least two semesters of prior applied piano study. Students will learn the intermediate level concepts of piano performance. Topics to be covered will include Dorian and Mixolydian modes, pentatonic scales and performance of a Chopin etude.

MUS 241   Applied Guitar I (Private) (1 Hour)
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 Hour)
Prerequisites: MUS 241 or department approval.

This is a continuation of private study in basic guitar technique. Emphasis will be upon playing position, posture, tone production and basic music-reading skills. Students will begin with studies and short pieces.

MUS 243   Applied Guitar III (Private)* (1 Hour)
Prerequisites: MUS 242 or department approval.

In this private study in intermediate guitar technique, emphasis will be on playing position, posture, tone production and intermediate music reading skills. Students will progress toward playing literature requiring intermediate skill levels.

MUS 244   Applied Guitar IV (Private)* (1 Hour)
Prerequisites: MUS 243 or department approval.

In this continuation of private study in intermediate guitar technique, emphasis will be on playing position, posture, tone production and intermediate music reading skills. Students will progress toward playing literature requiring intermediate skill levels.

MUS 246   Applied Classical Guitar I (Private) (1 Hour)
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 Hour)
Prerequisites: MUS 246 or department approval.

This continuation of private study in basic classical guitar technique and repertoire will emphasize classical left- and right-hand technique, playing position, posture, tone production and standard classical guitar literature. Students will continue with studies and short pieces, then progress toward longer pieces with the intent of performing these in a recital situation.

MUS 248   Applied Classical Guitar III (Private)* (1 Hour)
Prerequisites: MUS 247 or department approval.

In this private study in intermediate classical guitar technique and repertoire, emphasis will be on classical left- and right-hand technique, playing position, posture, tone production and standard classical guitar literature. Students will progress toward playing and performing more advanced pieces and guitar studies.

MUS 249   Applied Classical Guitar IV (Private)* (1 Hour)
Prerequisites: MUS 248 or department approval.

This continuation of private study in intermediate classical guitar technique and repertoire will emphasize classical left- and right-hand technique, playing position, posture, tone production and standard classical guitar literature. Students will progress toward playing and performing more advanced pieces and guitar studies.

MUS 251   Applied Brass I (Private) (1 Hour)
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 Hour)
Prerequisites: MUS 251 or placement by instructor.

This is a beginning-level course for the student with at least one semester of prior brass instrument study. Through written exercises and performance on the instrument of choice, the student will learn the beginning concepts of brass performance. Topics to be covered include embouchure development, minor scales and duple and triple rhythmic patterns.

MUS 256   Applied Percussion I (Private) (1 Hour)
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 Hour)
Prerequisites: MUS 256 or placement by instructor.

This is a beginning-level course for the student with at least one semester of prior instruction in percussion instruments. The student will learn beginning concepts of percussion performance. Topics to be covered include compound rhythm, snare drum rudiments and basic timpani skills.

MUS 258   Applied Percussion III (Private)* (1 Hour)
Prerequisites: MUS 257 or placement by instructor.

This is an intermediate-level course for the student with at least two semesters of prior instruction in percussion instruments. The student will learn beginning concepts of percussion performance. Topics to be covered include snare drum rudiments, basic mallet percussion skills and suspended cymbal skills.

MUS 259   Applied Percussion IV (Private)* (1 Hour)
Prerequisites: MUS 258 or placement by instructor.

This is an advanced-level course for the student with at least three semesters of prior instruction in percussion instruments. The student will learn advanced concepts of percussion performance. Topics to be covered include snare drum rudiments, crash cymbal techniques and drum set skills.

MUS 261   Applied Woodwind I (Private) (1 Hour)
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 Hour)
Prerequisites: MUS 261 or placement by instructor.

This is a beginning-level course for the student with at least one semester of prior woodwind study. The student will learn beginning concepts of woodwind performance on the chosen instrument through written exercises and performance. Topics to be covered include embouchure development, minor scales and duple and triple meters.

MUS 263   Applied Woodwind III (Private)* (1 Hour)
Prerequisites: MUS 262 or placement by instructor.

This is an intermediate-level course for the student with at least two semesters of prior woodwind study. The student will learn the intermediate concepts of woodwind performance through written exercises and performance. Topics to be covered include chromatic scale, quadruple rhythmic patterns and chord construction.

MUS 264   Applied Woodwind IV (Private)* (1 Hour)
Prerequisites: MUS 263 or placement by instructor.

This is an advanced-level course for the student with at least three semesters of prior woodwind study. Through written exercises and performance, the student will learn the advanced concepts of woodwind performance. Topics to be covered include pentatonic scale, whole tone scale and melodic contour.

MUS 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Neurodiagnostic Technology (NDT)

Courses

NDT 125   Introduction to Neurodiagnostic Technology* (4 Hours)
Prerequisites: Admission to the Neurodiagnostic Program.

Corequisites: EMS 121 and NDT 130 and NDT 135.

This course provides an introduction to Neurodiagnostic Technology (NDT) including history, concepts, techniques, and instruments used in recording brain activity. Students will engage in a variety of learning activities to explore the Neurodiagnostic career field and establish foundational concepts used in later courses. In the lab, students will receive hands- on experience using the internationally recognized method to describe the location of scalp electrodes (International 10-20 System). Emphasis will be placed on ensuring electrical safety, electrode application, patient interaction, developing an accurate patient history, careful handling of the patient, reviewing normal electroencephalographic (EEG) activity, identifying normal variants and artifacts. The course will use a blended approach that ties the classroom concepts to performing an EEG in the lab. 3 hrs. lecture/wk. and 2 hrs. lab/wk.

NDT 130   Foundations of Neurodiagnostic Technology* (3 Hours)
Prerequisites: Admission to the Neurodiagnostic Program.

Corequisites: NDT 125 and NDT 135.

Prerequisites or corequisites: EMS 121.

Students will engage in a variety of learning activities to build on neurodiagnostic technology knowledge to perform diagnostic procedures and react to patient responses in the clinical setting. This course is designed to build on learned concepts of anatomy and physiology. Emphasis will be on neurobiological processes and patient responses to medication and diseases. Students will explore medications that affect the cellular function of the nervous system and how chemical interactions alter the electroencephalogram (EEG). Students will also study how medications treat or alleviate symptoms of neurological disorders. 3 hrs. lecture/wk.

NDT 135   Pediatric Neurodiagnostic Technology I* (5 Hours)
Prerequisites: Admission to the Neurodiagnostic Program.

Corequisites: EMS 121 and NDT 125 and NDT 130.

This course will discuss pediatric terminology as it relates to the Neurodiagnostic Technology (NDT) field. Students will study the development of the brain from premature infants to older children and its correlations on the electroencephalogram (EEG). Students will learn to assess pediatric electrographic activity in a variety of ranges including pediatric EEG variants, normal and abnormal categories, as well as seizure patterns. In the lab students will develop the skills necessary for accurate electrode placement and application on pediatric patients. A variety of learning activities will allow students to perform an EEG in the lab prior to performing an EEG in the clinical setting. Course instruction will occur using a blended approach that focuses on active engagement of the student in the classroom and simulated lab setting. 3 hrs. lecture/wk. and 4 hrs. lab/wk.

NDT 140   Adult Neurodiagnostic Technology I* (4 Hours)
Prerequisites: EMS 121 and NDT 125 and NDT 130 and NDT 135 (All courses must be completed with a grade of "C" or higher.)

Corequisites: NDT 145 and NDT 150 and NDT 155.

This course will expand on adult terminology as it relates to the Neurodiagnostic Technology (NDT) field. Students will learn the maturation of the brain from adolescent through the geriatric patient, normal and abnormal activity, and electroencephalographic (EEG) variants and seizure disorders will be discussed. In the lab, students will apply concepts of electrode placement to the adult patient. A variety of learning activities will allow students to perform an EEG in the lab prior to performing an EEG in the clinical setting. Course instruction will occur using a blended approach that focuses on active engagement of the student in the classroom and simulated lab setting. 3 hrs. lecture/wk. and 2 hrs lab/wk.

NDT 145   Pediatric Neurodiagnostic Technology II* (4 Hours)
Prerequisites: EMS 121 and NDT 125 and NDT 130 and NDT 135 (All courses must to be completed with a grade of "C" or higher.)

Corequisites: NDT 140 and NDT 150 and NDT 155.

This course will expand on the concepts presented in Pediatric Neurodiagnostic Technology I and begins to correlate electroencephalographic (EEG) patterns with varying disease processes including infectious, toxic, and metabolic disorders. Students will also examine the effect of trauma, cerebral vascular accidents, genetic disorders, and differential diagnosis with the use of EEG. In the lab, the students will continue to perfect their skills in applying the electrodes in an efficient manner while addressing specific patient needs and mental capacity. Course instruction will use a blended approach that focuses on active engagement of the student in the classroom, lab, and in the simulation center. 3 hrs. lecture/wk. and 2 hrs. lab/wk.

NDT 150   Neurodiagnostic Clinical Correlates* (2 Hours)
Prerequisites: EMS 121 and NDT 125 and NDT 130 and NDT 135 (All courses must be completed with a grade of "C" or higher.)

Corequisites: NDT 140 and NDT 145 and NDT 155.

This course explores the process of comparing and contrasting patient's diagnostic tests, age, past medical history, physical health, and symptoms to assist the physician in the development of a differential diagnosis. Students will have the opportunity to compare case studies to normal and abnormal electroencephalogram (EEG) patterns to construct clinical correlations. Students will engage in a variety of activities to explore EEG specific activation procedures, artifacts on the EEG, and identify activity that requires physician intervention. 2 hrs. lecture/wk.

NDT 155   Neurodiagnostic Clinical I* (4 Hours)
Prerequisites: EMS 121 and NDT 125 and NDT 130 and NDT 135 (All courses must be completed with a grade of "C" or higher.)

Corequisites: NDT 140 and NDT 145 and NDT 150.

This course provides opportunities for entry-level Neurodiagnostic Technology (NDT) students to apply concepts, skills, and techniques of performing electroencephalograms (EEG's) in the clinical setting. Students will work with patients under supervision to further develop their skill and understanding of basic NDT procedures. 240 hrs. clinical/total.

NDT 225   Polysomnography* (5 Hours)
Prerequisites: NDT 140 and NDT 145 and NDT 150 and NDT 155 (All courses must be completed with a grade of "C" or higher.)

Corequisites: NDT 230 and NDT 240.

This course will provide a comprehensive study of Polysomnography (PSG) including: the history of sleep medicine, neurophysiologic mechanisms of normal sleep, cardiopulmonary anatomy and physiology as it relates to sleep medicine, electrocardiogram (ECG) interpretation, sleep study equipment, disease processes and conditions which adversely affect sleep, patient and equipment preparation, PSG monitoring and documentation, sleep study scoring, and therapeutic interventions associated with PSG procedures. 7 hrs. integrated/lecture/lab/wk.

NDT 230   Adult Neurodiagnostic Technology II* (3 Hours)
Prerequisites: NDT 140 and NDT 145 and NDT 150 and NDT 155 (All courses must be completed with a grade of "C" or higher.)

Corequisites: NDT 225 and NDT 240.

This course will expand on concepts acquired in Adult Neurodiagnostic Technology I and include discussion of the effects of trauma and cerebral vascular accidents as well as the use of EEG in differential diagnosis. Students will correlate electroencephalographic (EEG) patterns with clinical conditions. This course reinforces the role of the neurodiagnostic technologist in aiding the physician with differential diagnosis of patients. Students will have the opportunity to refine knowledge and skills related to equipment and modifications of the neurodiagnostic procedures based on current patient information in the co-requisite clinical course. 3 hrs. lecture/wk.

NDT 240   Neurodiagnostic Clinical II* (4 Hours)
Prerequisites: NDT 140 and NDT 145 and NDT 150 and NDT 155 (All courses must be completed with a grade of "C" or higher.)

Corequisites: NDT 225 and NDT 230.

This course is the second in a series of three clinical courses in the Neurodiagnostic Technologist (NDT) program. Students will build on fundamental neurodiagnostic knowledge and skills acquired in the first NDT course to provide a safe recording environment while performing neurodiagnostic recordings. Students will have the opportunity to work with patients under supervision to develop their skills and understanding of NDT procedures. 240 hrs. clinical/total.

NDT 245   Neurodiagnostic Related Modalities* (3 Hours)
Prerequisites: NDT 225 and NDT 230 and NDT 240 (All courses must be completed with a grade of "C" or higher.)

Corequisites: NDT 250 and NDT 255.

This course explores neurodiagnostic modalities and their use of basic electroencephalographic (EEG) principles. Students will build on fundamental neurodiagnostic concepts to compare and contrast instrumentation, recording parameters, and applications for evoked potential, nerve conduction, and electrocorticography studies. The content will differentiate among continuous, long-term and intraoperative monitoring, and discuss the role of the neurodiagnostic technologist while performing neurodiagnostic related modalities. Learning will occur in the classroom setting. 3 hrs. lecture/wk.

NDT 250   Neurodiagnostic Program Capstone* (3 Hours)
Prerequisites: NDT 225 and NDT 230 and NDT 240 (All courses must be completed with a grade of "C" or higher.)

Corequisites: NDT 245 and NDT 255.

This course is designed as a capstone experience for the neurodiagnostic program. Students will prepare for the American Board of Registration of Electroencephalographic and Evoked Potential (ABRET) part II exam and the Board of Registered Polysomnographic Technologists (BRPT) examinations. Exploration of career options and challenges will also occur. Upon successful completion students will demonstrate knowledge, skills and abilities expected of an entry level Neurodiagnostic Technologist(NDT.) A completed group project will document experiences and the knowledge base needed to assume the role of an NDT. 3 hrs. integrated lecture/lab/wk.

NDT 255   Polysomnography Clinical* (6 Hours)
Prerequisites: NDT 225 and NDT 230 and NDT 240 (All courses must be completed with a grade of "C" or higher.)

Corequisites: NDT 245 and NDT 250.

This course is the clinical application of sleep related diagnosis and treatment. Students will have the opportunity to work with patients under close supervision to develop their skill and understanding of polysomnographic (PSG) procedures. 360 hrs. clinic/total.

Nursing (NURS)

Courses

NURS 100   Concepts of Nursing Care: Foundations* (8 Hours)
Prerequisites: Admission to the Nursing Program.

Prerequisites or corequisites: BIOL 227 Corequisite: NURS 125.

Students will engage in a variety of learning activities to build nursing knowledge and skills necessary to care for patients who present with diverse characteristics across the healthcare continuum. The course establishes a foundation of concepts that students will use and expand upon in subsequent courses. These concepts will serve as a foundation for building the necessary skills to meet program outcomes including clinical judgment, facilitator of learning, advocacy, caring practices, collaboration, systems thinking, response to diversity, and clinical inquiry. Students will apply theoretical content and therapeutic interventions to patients with common health alterations in the clinical component of the course, which will focus on patients with low complexity diseases (i.e. stable, predictable illnesses). Course instruction will occur using a blended approach that focuses on active engagement of the student in the classroom, online, and in the Health Resource Center, the Simulation Center and a variety of healthcare agencies.

NURS 100H   HON: Concepts of Nursing Care: Foundations* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

NURS 125   Health Assessment in Nursing* (3 Hours)
Prerequisites: Admission to Nursing Program.

Corequisites: NURS 100.

Health Assessment in Nursing is a three credit course designed to provide students with a basic understanding and working knowledge of health assessment in the adult. The course is divided into modules that correlate with the bodily systems, including content preparation for subsequent courses including pediatric and older adult. Learning environments will include both classroom and simulated lab setting.

NURS 125H   HON: Health Assessment in Nursing* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

NURS 150   Concepts of Nursing Care: Childbearing Family and Children* (8 Hours)
Prerequisites: Admission to the Nursing Program. NURS 100 and NURS 125.

Prerequisites or corequisites: PSYC 218.

Students will engage in a variety of learning activities to build nursing knowledge and skills necessary to care for gynecological, obstetric and pediatric patient populations presenting with diverse and developmental characteristics across the healthcare continuum. This course reinforces foundational concepts and will introduce normal processes and common alterations unique to the childbearing family, child and adolescent. Course concepts as they apply to the childbearing family and children will continue to build necessary skills to meet program outcomes including clinical judgment, facilitator of learning, advocacy, caring practices, collaboration, systems thinking, response to diversity, and clinical inquiry. Students will acquire nursing knowledge and the skills necessary to care for the childbearing family, child and adolescent in wellness and moderately complex alterations. Students will apply theoretical content and therapeutic interventions to patients with various health alterations in the clinical component of the course, which will focus on the childbearing family, child and adolescent populations. Course instruction will occur using a blended approach that focuses on active engagement of the student in the classroom, online, and in the Health Resource Center, the Simulation Center and a variety of healthcare agencies.

NURS 150H   HON: Concepts of Nursing Care: Childbearing Family and Children* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

NURS 175   Concepts of Nursing Care: PN to RN Transition* (6 Hours)
Prerequisites: Admission to the Nursing Program. BIOL 144 and ENGL 121 and MATH 171 and PSYC 218.

Prerequisites or corequisites: BIOL 230 and BIOL 231 Corequisite: NURS 125.

This course is an introduction to the second year of the associate degree nurse (ADN) program for graduates of licensed practical nurse (LPN) programs. This course will combine foundational and childbearing family and child concepts of clinical judgment, facilitator of learning, advocacy, caring practices, collaboration, systems thinking, response to diversity and clinical inquiry. Populations examined will include the adult as well as the childbearing family, child and adolescent. 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 using a blended approach that focuses on active engagement of the student in the classroom, online, in the Health Resource Center, the Simulation Center and in other learning environments.

NURS 175H   HON: Concepts of Nursing Care: PN to RN Transition* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

NURS 200   Concepts of Nursing Care: Adult Health Alterations* (10 Hours)
Prerequisites: Admission to the Nursing Program. NURS 150 and PSYC 218.

Students will engage in a variety of learning activities to build nursing knowledge and skills necessary to care for adult and mental health patients who present with varying physiological and psychosocial health alterations. This course will focus on the adult lifespan with an emphasis on the older adult population. Course concepts will increase in complexity, as they apply to adults, to meet the program outcomes: clinical judgment, facilitator of learning, advocacy, caring practices, collaboration, systems thinking, response to diversity and clinical inquiry. Students will apply theoretical content and therapeutic interventions in the clinical component of the course, which will focus on the increasingly vulnerable patient with more complex disease processes. Course instruction will occur using a blended approach that focuses on active engagement of the student in the classroom, online, and in the Health Resource Center, the Simulation Center and a variety of healthcare agencies.

NURS 200H   HON: Concepts of Nursing Care: Adult Health Alterations* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

NURS 225   Concepts of Nursing Care: Complex Patient Care Management* (10 Hours)
Prerequisites: Admission to the Nursing Program. NURS 200.

The course will enable students to care for adult patients experiencing complex multisystem health alterations. Students will apply critical thinking and organizational skills to appropriately manage a group of patients in a healthcare setting. This course integrates the knowledge and skills acquired in the previous four nursing courses that facilitate student transition to professional nursing practice. Students will become increasingly confident and proficient in achieving the following program outcomes: clinical judgment, facilitator of learning, advocacy, caring practices, collaboration, systems thinking, response to diversity and clinical inquiry. Students will apply theoretical content and therapeutic interventions to patients in the clinical component of the course, which will include fragile and highly vulnerable patients and families. Course instruction will occur using a blended approach that focuses on active engagement of the student in the classroom, online, and in the Health Resource Center, the Simulation Center and a variety of healthcare agencies.

NURS 225H   HON: Concepts of Nursing Care: Complex Patient Care Management* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

NURS 234   Registered Nurse Refresher* (9 Hours)
Prerequisites: Current or previously licensed as a registered nurse. Current CPR certification for healthcare providers, health and dental records up-to-date, iincluding current immunizations; personal health insurance.

The course will prepare the Registered Nurse (RN) to re-enter the acute healthcare setting for employment after an absence from the patient care arena. The course has a general med-surg focus, and will review adult anatomy and physiology, pathophysiology, pharmacology, lab values and key issues related to patient care. The course includes classroom, lab, simulation, clinical and preceptorship experiences.

NURS 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Philosophy (PHIL)

Courses

PHIL 121   Introduction to Philosophy (3 Hours) nbsp;
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. lecture/wk.

PHIL 121H   HON: Introduction to Philosophy* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PHIL 124   Logic and Critical Thinking (3 Hours) nbsp;
This course examines the basic elements of formal and informal reasoning. Topics include the elements of argumentative discourse, informal fallacies, inductive and deductive arguments, and propositional logic. The class also focuses on the analysis and evaluation of argumentative discourse in a variety of everyday and academic contexts. 3 hrs. lecture/wk.

PHIL 124H   HON: Logic and Critical Thinking* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PHIL 128   Environmental Ethics (3 Hours)
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. 3 hrs. lecture/wk.

PHIL 138   Business Ethics (1 Hour)
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. lecture/wk.

PHIL 140   Business Ethics (3 Hours)
Business Ethics is a branch of applied ethics that attempts to understand, evaluate and critique business practices in the light of moral principles and values. This course introduces students to important elements of moral theory as well as main topics in Business Ethics, including the fiduciary duty of managers, outsourcing, corporate responsibility, whistleblowing, income smoothing, insider trading, sole-source procurements and kickbacks, conflicts of interest, legitimate vs. illegitimate write-offs, deception in advertising and marketing, responsibility to the environment, pay for corporate personnel, and interpersonal relationships in the workplace, among others. 3 hrs. lecture/wk.

PHIL 142   History of Asian Philosophy (3 Hours)
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. lecture/wk.

PHIL 143   Ethics (3 Hours) nbsp;
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. lecture/wk.

PHIL 143H   HON: Ethics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PHIL 154   History of Ancient Philosophy (3 Hours)
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. lecture/wk.

PHIL 155   Bioethics* (3 Hours)
Prerequisites: BIOL 121 or high school biology with department approval.

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.

PHIL 155H   HON: Bioethics* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PHIL 176   Philosophy of Religion (3 Hours)
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. lecture/wk.

PHIL 210   History of Modern Philosophy* (3 Hours)
Prerequisites: PHIL 121 or PHIL 143 or HIST 125 or HIST 126.

This course takes a historical approach to the development of modern philosophy and covers the period from the Renaissance to the 20th-century. The course will cover the epistemological, metaphysical and relevant axiological issues of the major philosophers and philosophical movements of this period. The course will also examine the influence of modern philosophy on contemporary thought. 3 hrs. lecture/wk.

PHIL 210H   HON: History of Modern Philosophy* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PHIL 292   Special Topics:* (3 Hours)
Prerequisites: The student must be currently enrolled in, or have successfully completed with a grade of 'C' or higher, any of the following core PHIL courses: PHIL 121, or PHIL 143.

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)

Courses

PHOT 121   Fundamentals of Photography (3 Hours)
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. integrated lecture/lab/wk.

PHOT 122   Advanced Photography* (3 Hours)
Prerequisites: PHOT 121.

This course provides an introduction to advanced techniques, tools, procedures and concepts of photographic imaging, with an emphasis on black-and-white photography as a fine art. Students will use Zone System tests and procedures to produce prints of maximum quality. Students will use advanced techniques, such as split-developers for contrast control, multiple-imaging and archival processing, and print presentation. Several "alternative" printing processes will be discussed and demonstrated. This course also includes a basic introduction to medium format (2 1/4) and large format (4 x 5) camera equipment and technique. Students will apply the above to make images for a series of conceptually advanced, project/series-oriented assignments to stimulate the student's creative capacities for personal expression, communication and self-understanding. 6 hrs. integrated lecture/lab/wk.

PHOT 122H   HON: Advanced Photography* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PHOT 123   Studio Photography* (3 Hours)
Prerequisites: PHOT 121.

This course provides an introduction to advanced techniques, tools, procedures and concepts of studio and commercial photography. Students will use professional camera and studio equipment, including studio electronic flash and hand-held light/flash meters. This course also includes an introduction to professional medium format (2 1/4) and large format (4"x5") equipment and advanced camera techniques for total image control. Students will use studio lighting for various portraiture styles and for small-product, table-top photography. Applications of digital photography as they apply to studio photographic processes will be introduced. Students will apply the above to make images for a series of advanced studio assignments. 6 hrs. integrated lecture/lab/wk.

PHOT 128   Digital Photography (3 Hours)
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.

PHOT 129   Advanced Digital Photography* (3 Hours)
Prerequisites: PHOT 128.

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.

PHOT 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

PHOT 292   Special Topics: (1-3 Hour)
This course periodically offers specialized or advanced discipline-specific content related to the study of photography, not usually taught in the curriculum. Due to the breadth and depth of the discipline, this course may expand upon a topic introduced in a current course, synthesize topics that cross-cut existing courses, or explore a topic not addressed currently in the Photography curriculum. Students may repeat Special Topics in Photography for credit but only on different topics.

Physical Ed, Health & Rec (HPER)

Courses

HPER 100   Basketball (Beginning) (1 Hour)
Students will have an opportunity to learn fundamental basketball skills through demonstration and discussion of strategies for team play. Emphasis is on individual participation. 2 hrs./wk.

HPER 101   Basketball (Intermediate)* (1 Hour)
Prerequisites: HPER 100.

Students will have an opportunity to learn intermediate basketball skills through demonstration and discussion of strategies for team play. This course will advance the skills of the student who successfully completed the beginning basketball course. Emphasis is on individual participation and competition team play. 2 hrs./wk.

HPER 104   Yoga (1 Hour)
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 toward all students, both beginners as well as those who have previous training. 2 hrs./wk.

HPER 115   Soccer (1 Hour)
The fundamentals of soccer will be introduced as well as strategies necessary for team play. 2 hrs./wk.

HPER 117   Power Volleyball (Beginning) (1 Hour)
The basic skills of volleyball taught in this class include the forearm pass, overhead set, serve, block and spike (attacking). Elementary offense and defense along with volleyball rules, scoring and officiating will be covered. 2 hrs./wk.

HPER 118   Power Volleyball (Intermediate)* (1 Hour)
Prerequisites: HPER 117.

Students will have the opportunity to build upon the basic fundamentals of the Power Volleyball (Beginning) class. Intermediate skills, strategies, offensive and defensive systems and rules will be covered for six-player, four-player, three-player, and two-player volleyball. 2 hrs./wk.

HPER 124   Tai Chi I (1 Hour)
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./wk.

HPER 130   Running Awareness and Exercise (1 Hour)
The course will introduce the student to aerobic fitness through the activity of running. The training principles for running and competitive racing will be covered, and the individual will complete a personal running and/or racing training program. 2 hrs./wk.

HPER 134   Weight Training (Beginning) (1 Hour)
In this class, muscular strength and endurance will be developed through weight training activity. A workout program will be implemented for each student. The muscular system, basic terminology of weight training and weight training theory will be discussed. 2 hrs./wk.

HPER 135   Weight Training (Intermediate)* (1 Hour)
Prerequisites: HPER 134.

In this class, muscular strength and endurance will be developed. A self-designed and directed resistance workout program will be implemented. The proper use of a training log and personal fitness evaluation techniques will be discussed. 2 hrs./wk.

HPER 137   Tennis (Beginning) (1 Hour)
Students will get individualized instruction in this course on the rules, terminology and history of tennis. The student will receive instruction on the basic strokes of tennis, as well as the strategies of singles and doubles play. 2 hrs./wk.

HPER 138   Tennis (Intermediate)* (1 Hour)
Prerequisites: HPER 137.

Students will review the rules, terminology and history of tennis. The student will receive instruction on the strokes of tennis, as well as the strategies of singles and doubles play in a competitive format. Emphasis will be on the mental and physical conditioning of the game. 2 hrs./wk.

HPER 139   Pickleball (1 Hour)
Students will review the rules, terminology and history of pickleball. The student will receive instruction on the strokes of pickleball, 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.

HPER 140   Modern Dance (Beginning) (1 Hour)
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 improvisational movement will be explored. 2 hrs./wk.

HPER 150   Aerobics (Beginning) (1 Hour)
Motor skills, jogging and dance steps are combined in this exercise program to improve muscle tone and cardiovascular fitness. 2 hrs./wk.

HPER 155   Ballet (Beginning) (1 Hour)
This progressive ballet system is designed to produce muscular strength and flexibility and a working knowledge of anatomy, plus the aesthetic satisfaction of expressing yourself through a classical art form. Offered to students of all ages and experience, both beginners as well as those who have had some training. 2 hrs./wk.

HPER 158   Jazz Dance (Beginning) (1 Hour)
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.

HPER 172   Track and Field (Beginning) (1 Hour)
This course will introduce the student to the sport of track and field. Through activity and discussion the student will improve his or her motor ability to perform track and field events. 2 hrs./wk.

HPER 174   Coaching and Officiating of Track and Field (2 Hours)
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. lecture/wk.

HPER 175   Fencing (1 Hour)
Beginning foil fencing will provide the student with the fundamental rules and techniques of foil fencing. The student will utilize these skills in a fencing bout. The student will also be instructed in the rules and procedures of officiating foil fencing. 2 hrs./wk.

HPER 176   Self Defense I (1 Hour)
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./wk.

HPER 185   Archery (1 Hour)
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 192   Wellness for Life (1 Hour)
This course introduces students to the theory and principles upon which the concepts of lifetime fitness and wellness are based. Students will examine the relationship that exists between wellness and lifestyle behaviors. Individual self-assessments will be used to establish current health and fitness levels. 1 hr. lecture/wk.

HPER 195   Introduction to Sports Medicine (3 Hours)
The purpose of this class is to introduce the basic concepts of sports medicine, specifically Athletic Training. It will address the fundamentals of the human musculoskeletal system, sports-related injuries, injury treatment and other sports medicine-related topics. This class is designed for beginning athletic training students and other students interested in the subject. 3 hrs. lecture/wk.

HPER 200   First Aid and CPR (2 Hours) nbsp;
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. lecture/wk.

HPER 202   Personal Community Health (3 Hours) nbsp;
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. lecture/wk.

HPER 204   Care and Prevention of Athletic Injury (3 Hours)
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. lecture/wk.

HPER 208   Introduction to Exercise Physiology (3 Hours)
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. lecture/wk.

HPER 220   Sports Officiating (3 Hours)
The rules and practical application of officiating will be covered for the following sports: volleyball, football, basketball, baseball and softball. 3 hrs. lecture/wk.

HPER 224   Outdoor Recreation (3 Hours)
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 and compass, outdoor safety, and how to dress and pack for outdoor adventures. 3 hrs. lecture/wk.

HPER 240   Lifetime Fitness I (1 Hour)
Lifetime Fitness introduces the student to basic fitness principles, physical activity and the relationship to a healthy lifestyle. This class is designed to provide a variety of physical activity experiences. Students will gain an understanding of the necessary skills needed to develop and implement personal lifestyle improvements related to cardiovascular fitness, muscular strength, muscular endurance, flexibility and body composition. Physical activity tracking will be utilized in this course.

HPER 241   Lifetime Fitness II* (1 Hour)
Prerequisites: HPER 240.

This course is a continuation and expansion of Lifetime Fitness I. 2 hrs./wk.

HPER 242   Lifetime Fitness III* (1 Hour)
Prerequisites: HPER 241.

This course is a continuation and expansion of Lifetime Fitness II. 2 hrs./wk.

HPER 243   Lifetime Fitness IV* (1 Hour)
Prerequisites: HPER 242.

This course is a continuation and expansion of Lifetime Fitness III. 2 hrs./wk.

HPER 245   Elementary Physical Education (3 Hours)
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.lecture/wk.

HPER 255   Introduction to Physical Education (3 Hours)
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. lecture/wk.

HPER 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Physical Science (PSCI)

Courses

PSCI 120   Physical Science (4 Hours) nbsp;
This course is an introduction to the fundamental concepts and principles of physics, chemistry, astronomy and the earth sciences. Topics include forces, energy, electricity, magnetism, modern physics, and chemical bonding. It is counted toward laboratory science requirements and is intended for non-science majors. The course 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. 6 hrs. integrated lecture/lab/wk.

PSCI 214   Introduction to Teaching Math and Science I* (1 Hour)
Prerequisites: MATH 171 with a grade of "C" or higher OR appropriate score on the math placement test OR department approval.

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. 1.25 hrs. lecture/wk.

PSCI 215   Introduction to Teaching Math and Science II* (1 Hour)
Prerequisites: ASTR 214 or BIOL 214 or CHEM 214 or GEOS 214 or MATH 214 or PHYS 214 or PSCI 214 with a grade of "C" or higher.

Students learn about the middle school environment and work on math and science inquiry-based lesson analysis, design and assessment. Student partners will plan and teach three inquiry-based lessons in a middle school. The course emphasizes writing 5E lesson plans with a focus on the importance of using appropriate questioning and assessment strategies throughout the lesson, as well as how to analyze and modify a lesson based on personal reflections and observer feedback. By the completion of the course, students should be able to reflect on their personal suitability/interest in teaching secondary math or science, and develop a feasible pathway to a career in teaching. MATH 215, ASTR 215, BIOL 215, CHEM 215, GEOS 215, PHYS 215 and PSCI 215 are the same course; enroll in only one. 1.25 hrs. lecture/wk.

Physics (PHYS)

Courses

PHYS 130   College Physics I* (5 Hours) nbsp;
Prerequisites: MATH 171 or placement scores.

In this introductory course for pre-professional and general education, students will learn the fundamentals of selected areas of classical physics. Using the tools of algebra and trigonometry, the course develops the topics of kinematics, mechanics, fluid mechanics, thermal energy 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.

PHYS 130H   HON: College Physics I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PHYS 131   College Physics II* (5 Hours) nbsp;
Prerequisites: PHYS 130.

In this introductory course for pre-professional and general education, students will learn the fundamentals of selected areas of classical physics. Using the tools of algebra and trigonometry, the course develops the topics of electricity and magnetism, waves, 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 Hours)
Prerequisites: MATH 130 or higher passed with a grade of 'C' or higher in the past three years.

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 Hours)
Prerequisites: MATH 171 or MATH 173 with grade of "C" or higher or appropriate score on math assessment test and GAME 121.

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.

PHYS 191H   HON: Math and Physics for Games I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PHYS 214   Introduction to Teaching Math and Science I* (1 Hour)
Prerequisites: MATH 171 with a grade of "C" or higher OR appropriate score on the math placement test OR department approval.

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. 1.25 hrs. lecture/wk.

PHYS 215   Introduction to Teaching Math and Science II* (1 Hour)
Prerequisites: ASTR 214 or BIOL 214 or CHEM 214 or GEOS 214 or MATH 214 or PHYS 214 or PSCI 214 with a grade of "C" or higher.

Students learn about the middle school environment and work on math and science inquiry-based lesson analysis, design, and assessment. Student partners will plan and teach three inquiry-based lessons in a middle school. The course emphasizes writing 5E lesson plans with a focus on the importance of using appropriate questioning and assessment strategies throughout the lesson, as well as how to analyze and modify a lesson based on personal reflections and observer feedback. By the completion of the course, students should be able to reflect on their personal suitability/interest in teaching secondary math or science, and develop a feasible pathway to a career in teaching. MATH 215, ASTR 215, BIOL 215, CHEM 215, GEOS 215, PHYS 215 and PSCI 215 are the same course; enroll in only one. 1.25 hrs. lecture/wk.

PHYS 220   Engineering Physics I* (5 Hours) nbsp;
Prerequisites or corequisites: MATH 242.

This is an introduction to physics for engineering and science students. Included will be mathematical approaches to the study of mechanics, wave motion and thermodynamics. 4 hrs. lecture, 3 hrs. lab/wk.

PHYS 220H   HON: Engineering Physics I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PHYS 221   Engineering Physics II* (5 Hours) nbsp;
Prerequisites: PHYS 220 and MATH 242.

This is an introduction to physics for engineering and science students. Included are mathematical approaches to the study of electricity, magnetism, sound, optics and modern physics. 4 hrs. lecture, 3 hrs. lab/wk.

Political Science (POLS)

Courses

POLS 122   Political Science (3 Hours) nbsp;
This course provides students the opportunity to explore the discipline of political science and to discover how political scientists study politics in the contemporary world. 3 hrs. lecture/wk. and online.

POLS 122H   HON: Political Science* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

POLS 124   American National Government (3 Hours) nbsp;
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.

POLS 126   State and Local Government (3 Hours)
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. lecture/wk.

POLS 126H   HON: State and Local Government* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

POLS 132   Introduction to Comparative Government (3 Hours)
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. lecture/wk.

POLS 132H   HON: Introduction to Comparative Government* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

POLS 135   International Relations (3 Hours) nbsp;
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. lecture/wk.

POLS 135H   HON: International Relations* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

POLS 175   Environmental Policy and Law (3 Hours)
This is a survey course in environmental regulation and will provide an overview of key environmental laws and policies 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.

POLS 192   Political Theory (3 Hours)
This course examines the relationship between citizens and government, and competing justifications for political authority. We will focus on the Western political tradition, in particular Plato, Locke, Mill and Marx. Most of class work consists of participation in historical simulations involving Ancient Athens and Revolutionary America, with some attention to other periods. 3 hrs. lecture/wk.

POLS 200   Model United Nations (3 Hours)
This course is designed for students who are interested in learning and understanding international organizations and participating in competitive intercollegiate Model United Nations. This course orients students with the history, structure and function of the United Nations and those facets of an assigned country. This orientation will assist students in their preparation for the Model United Nations (MUN) conference during the spring semester. 3 hrs lecture/wk.

POLS 200H   HON: Model United Nations* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

POLS 245   Introduction to Public Administration (3 Hours)
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 Hours)
Prerequisites or corequisites: By permission of the political science internship coordinator, completion of 6 credit hours in political science courses at JCCC or another college within the last two years, earning a minimum of a 3.0 on a 4.0 scale in those political science courses, and a written recommendation from your political science classroom instructor. Students must complete all necessary arrangements for this program the semester prior to the internship.

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.

POLS 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Practical Nursing (PN)

Courses

PN 125   KSPN Foundations of Nursing* (4 Hours)
Prerequisites: Admission to the Practical Nursing Program.

Corequisites: PN 126.

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 Hours)
Prerequisites: Admission to the Practical Nursing Program.

Corequisites: PN 125.

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. 90 clinical hrs./semester.

PN 130   KSPN Medical Surgical Nursing I* (4 Hours)
Prerequisites: Admission to the Practical Nursing Program.

Corequisites: PN 131.

Prerequisites or corequisites: PN 125 with a grade of "C" or higher and PN 126 with a passing grade.

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 Hours)
Prerequisites or corequisites: PN 125 with a grade of.

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. 135 clinical hrs./semester.

PN 135   KSPN Pharmacology* (3 Hours)
Prerequisites: Admission to the Practical Nursing Program.

Prerequisites or corequisites: PN 125 with a grade of "C" or higher and PN 126 with a passing grade.

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 Hours)
Prerequisites: Admission to the Practical Nursing Program. PN 130 with a grade of "C" or higher and PN 131 with a passing grade and PN 135 with a grade of "C" or higher.

Corequisites: PN 141.

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 Hour)
Prerequisites: Admission to the Practical Nursing Program. PN 130 with a grade of "C" or higher and PN 131 with a passing grade and PN 135 with a grade of "C" or higher.

Corequisites: PN 140.

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. 45 clinical hrs./semester.

PN 145   KSPN Mental Health Nursing* (2 Hours)
Prerequisites: Admission to the Practical Nursing Program. PN 130 with a grade of "C" or higher and PN 131 with a passing grade and PN 135 with a grade of "C" or higher.

Corequisites: PN 146.

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 Hour)
Prerequisites: Admission to the Practical Nursing Program. PN 130 with a grade of "C" or higher and PN 131 with a passing grade and PN 135 with a grade of "C" or higher.

Corequisites: PN 145.

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. 45 hrs. clinical/semester.

PN 150   KSPN Medical Surgical Nursing II* (4 Hours)
Prerequisites: Admission to the Practical Nursing Program. PN 130 with a grade of "C" or higher and PN 135 with a grade of "C" or higher.

This course focuses on the effect of disorders of selected systems throughout the life span 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 Hours)
Prerequisites: Admission to the Practical Nursing Program. PN 130 with a grade of "C" or higher and PN 131 with a passing grade and PN 135 with a grade of "C" or higher rerequisite or.

Corequisites: PN 150 with a grade of "C" or higher.

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. 135 hrs. clinical/semester.

PN 155   KSPN Gerontology Nursing* (2 Hours)
Prerequisites: Admission to Practical Nursing Program.

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 170   Physical Assessment for the Practical Nurse* (3 Hours)
Prerequisites: Admission to the Practical Nursing Program and American Heart Association Basic Life Support for Healthcare Providers (BLS).

Physical Assessment for the Practical Nurse is a three credit course designed to provide practical nursing students with a basic understanding and working knowledge of physical assessment in the adult. The course is divided into units that correlate with the body systems. Learning environments will include classroom, skills lab and simulation lab.

Psychology (PSYC)

Courses

PSYC 121   Applied Psychology (3 Hours)
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. lecture/wk.

PSYC 130   Introduction to Psychology (3 Hours) nbsp;
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. lecture/wk.

PSYC 130H   HON: Introduction to Psychology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PSYC 205   Human Sexuality* (3 Hours)
Prerequisites: PSYC 130.

PSYC 205, Human Sexuality, is a balanced and thoughtful account of what is known about sexuality from various perspectives. A broad and representative survey of research is presented in a number of topical areas. Psychobiology, sexual development during childhood and adolescence, sexual interactions, love relationships and behavior, gender issues, sexual orientation, health issues and diseases, and sexual problems and solutions will be studied. Primary emphasis will be placed on the individual and the couple as a unit of analysis. Class discussions of issues relating to human sexuality will be encouraged. 3 hrs. lecture/wk.

PSYC 205H   HON: Human Sexuality* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PSYC 209   Statistics in Psychological Research* (3 Hours)
Prerequisites: PSYC 130 and MATH 171.

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 Hours)
Prerequisites: PSYC 130 and MATH 171.

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. lecture/wk.

PSYC 215   Child Development* (3 Hours) nbsp;
Prerequisites: PSYC 130.

This course is a comprehensive account of human development from conception through adolescence. The course integrates genetic, biological, physical and anthropological influences with psychological processes and explores determinants of behavior from a genetic and environmental perspective. 3 hrs. lecture/wk.

PSYC 215H   HON: Child Development* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PSYC 218   Human Development* (3 Hours) nbsp;
Prerequisites: PSYC 130.

This course is a comprehensive account of human psychological and physical development from conception through infancy, childhood, adolescence, adulthood and death. The course integrates genetic, biological, physiological and anthropological influences with the psychological process, and explores determinants of development from both hereditary and environmental perspectives. 3 hrs. lecture/wk.

PSYC 218H   HON: Human Development* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PSYC 220   Social Psychology* (3 Hours)
Prerequisites: PSYC 130.

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. lecture/wk.

PSYC 220H   HON: Social Psychology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PSYC 221   Environmental Psychology* (3 Hours)
Prerequisites: PSYC 130 or ITMD 121 or BIOL 130.

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 Hours)
Prerequisites: PSYC 130.

This course addresses issues that apply theories of psychology to the educational environment. Topics included in the study of educational psychology include research methodology, theories of human development, principles of learning, the psychology of motivation, theories of intelligence, testing and assessment techniques, and career development. 3 hrs. lecture/wk.

PSYC 250   Health Psychology* (3 Hours)
Prerequisites: PSYC 130.

This course covers content, methods and theory regarding the interplay between psychological and biological determinants of health and illness and examines how these factors relate to health status. The course focus is on the application of psychological methods, principles of maintenance of health, prevention of disease, treatment of illness, and rehabilitation and recovery from impaired health. It follows an interdisciplinary approach to content and instruction. 3 hrs. lecture/wk.

PSYC 250H   HON: Health Psychology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

PSYC 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

PSYC 292   Special Topics:* (3 Hours)
Prerequisites: ENGL 121 or RDG 126 or College Reading Readiness.

This course periodically offers specialized or advanced discipline-specific content related to the study of Psychology, not usually taught in the curriculum. This course may expand upon a topic introduced in a current course, synthesize topics that cut across existing courses, or explore a topic not currently addressed in the Psychology curriculum. Students may repeat Special Topics in Psychology for credit but only on different topics.

Railroad Conductor (RRTC)

Courses

RRTC 123   Introduction to Conductor Service* (4 Hours)
Prerequisites: Admission to the JCCC railroad JCCC NARS Director approval operations program conductor option, or.

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. 4 hrs. lecture, demonstration/wk.

RRTC 175   Conductor Mechanical Operation* (2 Hours)
Prerequisites: Admission to the JCCC railroad operations program, conductor option, or JCCC NARS Director approval.

This course covers mechanical operations that relate to conductor service. 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.

RRTC 261   Conductor Service* (2 Hours)
Prerequisites: Admission to the JCCC railroad operations program, conductor option, or JCCC NARS Director approval.

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 Hours)
Prerequisites: Admission to the JCCC railroad operations program, conductor option, and JCCC NARS Director approval.

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. 4 hrs. lecture/wk. Selective admission program - see a counselor about special requirements.

RRTC 267   Conductor Field Application* (4 Hours)
Prerequisites: Admission to the JCCC railroad operations program, conductor option or National Academy of Railroad Sciences (NARS) Director Approval.

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.

Railroad Electronics (RREL)

Courses

RREL 110   Introduction to Railroad Signal Systems* (4 Hours)
Prerequisites: Approval of the railroad training administrator and the JCCC department approval.

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 Hours)
Prerequisites: Successful completion of RREL 110 and approval of the railroad training administrator and the JCCC department approval.

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 Hours)
Prerequisites: RREL 112 and approval of the railroad training administrator and the JCCC department approval.

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 Hours)
Prerequisites: RREL 114 and approval of the railroad training administrator and the JCCC department approval.

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 180   Introduction to Railroad Electronics* (1 Hour)
Prerequisites: Approval of the railroad training administrator and the JCCC department approval.

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 Hours)
Prerequisites: RREL 180 and the approval of the railroad training administrator and the JCCC department approval.

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 Hours)
Prerequisites: RREL 181 and the approval of the railroad training administrator and the JCCC department approval.

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 Hours)
Prerequisites: RREL 182 and approval of the railroad training administrator and the JCCC department approval.

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 Hours)
Prerequisites: RREL 183 and approval of the railroad training director and the JCCC department approval.

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 Hours)
Prerequisites: RREL 183 and approval of the railroad training director and the JCCC department approval.

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 Hours)
Prerequisites: RREL 285 and approval of the railroad training director and the JCCC department approval.

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)

Courses

RRIT 124   Fast Track Elements and Basic Welding (3 Hours)
Upon successful completion of this course, the student should be able to properly use oxy-fuel cutting (OFC) and shielded metal arc welding (SMAW). The OFC will cover straight line cutting, beveling and piercing. The SMAW portion of the course will concentrate on 1G and 2F welds with bend tests being performed on selected weldments. Student should be able to discuss electrical safety in shielded metal arc welding, handle welding cables properly, understand eye hazards, list safe clothing requirements and discuss environmental safety. Achieving the specified score on the unit test will evidence this knowledge. 2 hrs. lecture, 3 hrs. lab/wk.

RRIT 132   Thermite Welding* (3 Hours)
Prerequisites: Approval of the BNSF manager of engineering and maintenance training and the JCCC department approval.

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 Hours)
Prerequisites: RRIT 124 and BNSF manager of engineering and maintenance training approval and JCCC department approval.

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 in a classroom and laboratory setting. 1 hr. lecture, 4 hrs. lab/wk.

RRIT 137   Structural Welding SMAW* (3 Hours)
Prerequisites: RRIT 124 and BNSF manager of engineering and maintenance training approval and JCCC department approval.

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 Hours)
Prerequisites: RRIT 137 and approval of the BNSF manager of engineering and maintenance training and the JCCC department approval.

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 142   Structural Pile Welding* (3 Hours)
Prerequisites: RRIT 137 and RRIT 138 and approval of the BNSF manager of engineering and maintenance training and the JCCC department approval.

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 145   Frog Welding* (3 Hours)
Prerequisites: RRIT 124 and BNSF manager of engineering and maintenance training approval and JCCC department approval.

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 160   Mechanical Basic Welding* (3 Hours)
Prerequisites: Approval of Burlington Northern Santa Fe (BNSF) Training Director.

Upon successful completion of this course, the student should be able to properly use oxyfuel cutting (OFC), plasma arc cutting (PAC), plasma arc gouging, air carbon arc cutting (CAC-A), and shielded metal arc welding (SMAW) equipment. The SMAW portion of the course will concentrate on flat groove welds (1G) and horizontal fillet welds (1F). The student is required to pass a welding test in accordance with the Railroad Welding Specification for Cars and Locomotives (AWS D15.1). 1 hour lecture 4 hours lab per week.

RRIT 162   Mechanical Welding Structural Stick* (3 Hours)
Prerequisites: Approval of Burlington Northern Santa Fe (BNSF) Training Director.

Upon successful completion of this course, the student should be able to properly use the shielded metal arc welding (SMAW) process on multi-pass groove welds in the horizontal (2G), vertical up (3G), and overhead (4G) positions. The student is required to pass welding tests in accordance with the Railroad Welding Specification for Cars and Locomotives (AWS D15.1). 1 hour lecture 4 hours lab per week.

RRIT 164   Mechanical Welding Structural Wire* (3 Hours)
Prerequisites: Approval of Burlington Northern Santa Fe (BNSF) Training Director.

Upon successful completion of this course, the student should be able to properly use the flux core arc welding (FCAW) process on multi-pass groove welds in the horizontal (2G), vertical up (3G), and overhead (4G) positions. The student is required to pass welding tests in accordance with the Railroad Welding Specification for Cars and Locomotives (AWS D15.1). 1 hour lecture 4 hours lab per week.

RRIT 166   Mechanical Welding Air Brake Pipe* (3 Hours)
Prerequisites: Approval of Burlington Northern Santa Fe (BNSF) Training Director.

Upon successful completion of this course, the student should be able to properly use the shielded metal arc welding (SMAW) and flux cored arc welding (FCAW) processes on pipe welds. The student is required to pass welding tests in accordance with the Railroad Welding Specification for Cars and Locomotives (AWS D15.1). 1hour lecture 4 hours lab per week.

RRIT 168   Mechanical Welding Sheet Metal* (3 Hours)
Prerequisites: Approval of Burlington Northern Santa Fe (BNSF) Training Director.

Upon successful completion of this course, the student should be able to properly use the gas metal arc welding (GMAW) and gas tungsten arc welding (GTAW) processes on sheet metal. The student is required to pass welding tests in accordance with the Railroad Welding Specification for Cars and Locomotives (AWS D15.1). 1 hour lecture 4hours lab per week.

Railroad Operations (RRT)

Courses

RRT 120   History of Railroading (3 Hours)
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 Hours)
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 Hours)
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 Hours)
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.

RRT 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

Railroad Operations-Mechanical (RRTM)

Courses

RRTM 130   Freight Car Yard Inspection* (3 Hours)
Prerequisites: Approval of the railroad training administrator and the JCCC department approval.

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 Hours)
Prerequisites: RRTM 130 and approval of the railroad training administrator and JCCC department approval.

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 152   Freight Car Air Brakes, Basic* (2 Hours)
Prerequisites: Approval of the railroad training administrator and the JCCC department approval.

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.

Reading (RDG)

Courses

RDG 126   Academic Reading* (3 Hours)
Prerequisites: Appropriate test score; or either RDG 125 with a grade of "C" or higher; or EAP 111 and EAP 115 and EAP 122.

This is the mandatory reading course based on JCCC assessment scores, and successful completion of this course is required to exit the assessment mandate. It is designed for students who need to improve their understanding of written expression. The focus of this course is higher-level comprehension and vocabulary skills. Students use written 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. lecture/wk.

RDG 127   College Reading Skills* (3 Hours)
Prerequisites: RDG 126 or appropriate assessment score.

In this advanced course, designed for students who wish to further improve their reading, students will develop critical reading skills, expand background knowledge through reading, increase vocabulary, develop flexible reading techniques, and improve study and writing skills. Students use selected periodicals to apply and practice skills learned in the class and to provide a background for written assignments and class discussions. 3 hrs. lecture/wk.

Religion (REL)

Courses

REL 120   Exploring World Religions (3 Hours) nbsp;
This course is a comparative study of the world's major religious traditions. The basic beliefs of Hinduism, Buddhism, Confucianism, Daoism, Judaism, Christianity and Islam will be explored. A comparative framework for religious studies will be provided, and essential differences between Eastern and Western religions will be noted. Literary texts and iconographic images will be studied as appropriate. 3 hrs. lecture/wk.

REL 120H   HON: Exploring World Religions* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

REL 125   Religions of the East (3 Hours)
Religions of the East is a detailed examination of the rich and diverse religious traditions of India, Tibet, China and Japan. Students will explore the histories, mutual influences, beliefs, and practices of Hinduism, Buddhism, the Jain religion, the Sikh religion, Confucianism, Daoism, the Tibetan religions, and Shinto, stressing the characteristics they share, as well as those that differentiate them from each other and from Western religions. Primary and secondary texts, as well as the iconographic and artistic traditions of these religions, will be examined as appropriate. 3 hrs. lecture/wk.

REL 125H   HON: Religions of the East* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

REL 126   Religions of the West (3 Hours)
Religions of the West is a detailed examination of the rich and diverse religious traditions that originated in the ancient Near East (Judaism, Christianity, Islam), examples of indigenous traditions of Africa and North America, and examples of "alternative religions" of modern/contemporary Western culture. The student will explore the histories, cultural influences, beliefs and practices of these religions, stressing the characteristics that they share and those that differentiate them, both from one another and from the religious traditions of South and East Asian cultures. The primary texts, as well as the iconographic and artistic traditions of these religions, will be examined as appropriate. 3 hrs. lecture/wk.

REL 126H   HON: Religions of the West* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

REL 150   Islam: Religion Civilization (3 Hours)
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 150H   HON: Islam: Religion and Civilization* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

REL 292   Special Topics:* (3 Hours)
Prerequisites or corequisites: The student must be currently enrolled in, or successfully completed with a grade of 'C' or higher, any of the following core REL courses: REL120, REL 125 or REL 126.

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)

Courses

RC 120   Respiratory Structure and Function* (2 Hours)
Prerequisites: Admission to the Respiratory Care Program. BIOL 144 and CHEM 122 and ENGL 121.

Prerequisites or corequisites: BIOL 230 (All courses must be completed with a "C" or higher.) Corequisites: RC 124 and RC 131.

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. lecture/wk.

RC 124   Fundamentals of Respiratory Care* (6 Hours)
Prerequisites: Admission to the Respiratory Care Program. BIOL 144 and CHEM 122 and ENGL 121.

Prerequisites or corequisites: BIOL 230 (All courses must be completed with a grade of "C" or higher.) Corequisites: RC 120 and RC 131.

This course covers therapeutic modalities and equipment used in respiratory care. Medical gas production and storage is also addressed. Emphasis is on patient assessment, clinical application of therapies, therapy evaluation and communication techniques. The course also examines the roles of respiratory care in the healthcare system and basic respiratory care services scope. The role the respiratory care practitioner assumes in an organization and the operation of a respiratory care department are also introduced. 4 hrs. lecture and 4 hrs. lab/wk.

RC 131   Cardiopulmonary Diagnostics* (3 Hours)
Prerequisites: Admission to the Respiratory Care Program. BIOL 144 and CHEM 122 and ENGL 121.

Prerequisites or corequisites: BIOL 230 (All courses must be completed with a "C" or higher.) Corequisites: RC 120 and RC 124.

This course is a detailed review of the procedures, equipment, interpretation and analysis used in the diagnosis of cardiopulmonary disease. Diagnostic procedures will include: non-invasive oxygen and carbon dioxide measurements, arterial blood gas analysis, pulmonary function testing, thoracic imaging studies, clinical laboratory data, the electrocardiogram, bronchoscopy, thoracentesis, cardiopulmonary exercise studies and sleep studies. 2 hrs. lecture and 1.25 hrs. lab/wk.

RC 136   Cardiopulmonary Diseases* (3 Hours)
Prerequisites: Admission to the Respiratory Care Program. RC 120 and RC 124 and RC 131 (All courses must be completed with a grade of "C" or higher.)

Corequisites: RC 140 and RC 145 and RC 146.

This course provides a detailed review of pulmonary disorders with disease pathology and management. The information provided allows students to integrate assessment and treatment of cardiopulmonary disease states as well as the physiological response to cardiopulmonary diseases. The role of a respiratory care practitioner in disease management is defined. 3 hrs. lecture/wk.

RC 140   Respiratory Care Pharmacology* (2 Hours)
Prerequisites: Admission to the Respiratory Care Program. RC 120 and RC 124 and RC 131 (All courses must be completed with a grade of "C" or higher.)

Corequisites: RC 136 and RC 145 and RC 146.

This course acquaints the student with general principles of pharmacology. It provides a comprehensive review of all drugs and drug groups that are administered by respiratory care practitioners or play an integral part in the management of patients they encounter. Emphasis is on the respiratory care clinical application of pharmacological agents, their therapeutic effects, mechanism of action and adverse effects rather than the biochemistry involved. 2 hrs. lecture/wk.

RC 145   Cardiopulmonary Critical Care I* (5 Hours)
Prerequisites: Admission to the Respiratory Care Program. RC 120 and RC 124 and RC 131 (All courses must be completed with a grade of "C" or higher.)

Corequisites: RC 136 and RC 140 and RC 146.

The student will develop knowledge and skills in the area of hospital critical care. Topics will include respiratory failure, airway management, mechanical ventilation and hemodynamic monitoring. Emphasis will be placed on the concepts and techniques related to mechanical ventilation, ventilator modes, the physiological effects of mechanical ventilation, adjustment of ventilator parameters, nonconventional ventilation techniques and troubleshooting. 3 hrs. lecture and 2.5 hrs. lab/wk.

RC 146   Pediatric/Neonatal Respiratory Care* (2 Hours)
Prerequisites: Admission to the Respiratory Care Program. RC 120 and RC 124 and RC 131 (All courses must be completed with a grade of "C" or higher.)

Corequisites: RC 136 and RC 140 and RC 145.

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 and laboratory assessments, and associated patient management in the acute, critical, emergency care, transport and home care settings. 2 hrs. lecture/wk.

RC 255   Cardiopulmonary Critical Care II* (5 Hours)
Prerequisites: Admission to the Respiratory Care Program. RC 136 and RC 140 and RC 145 and RC 146 (All courses must be completed with a grade of "C" or higher.)

Corequisites: RC 271.

The student will refine knowledge and skills in the critical care setting. 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 physiological effects and management. 3 hrs. lecture and 2.5 hrs. lab/wk.

RC 265   Respiratory Care Program Capstone* (3 Hours)
Prerequisites: Admission to the Respiratory Care Program. RC 255 and RC 271 (All courses must be completed with a grade of "C" or higher.)

Corequisites: RC 272.

This course is designed as a cumulative experience to prepare students for employment and the National Board of Respiratory Care (NBRC) examinations for the Registered Respiratory Therapist credential. Students will demonstrate knowledge and skill competency attainment expected of a skilled Respiratory Therapist. Exploration of career options include home care, pulmonary rehabilitation and management. Students will be required to pass a comprehensive exam based on the current NBRC matrix for current board testing. Completed projects will document experiences and the knowledge base needed to assume the role of a Registered Respiratory Therapist (RRT). 3 hrs. integrated lecture/lab/ wk.

RC 271   Respiratory Care Clinical Experience I* (6 Hours)
Prerequisites: Admission to the Respiratory Care Program. RC 136 and RC 140 and RC 145 and RC 146 (All courses must be completed with a grade of "C" or higher.)

Corequisites: RC 255.

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 advance throughout the semester to involve the students in all aspects of basic respiratory care for the acute care patient. As their comfort level and exposures progress, students are allowed to work with more critically ill patients. 16-24 hrs. /wk.

RC 272   Respiratory Care Clinical Experience II* (6 Hours)
Prerequisites: Admission to the Respiratory Care Program. RC 255 and RC 271 (All courses must be completed with a grade of "C" or higher.)

Corequisites: RC 265.

This course is the clinical application of respiratory care therapeutic and diagnostic procedures. Students will have the opportunity to work under close supervision to further develop their skill and understanding of critical care respiratory procedures for adults, pediatric, and neonatal patients. Students will also be involved in specialty activities to include physician rounds, pulmonary rehabilitation, respiratory related home care, and pulmonary function testing. 16-24 hrs./wk.

Science (SCI)

Courses

SCI 292   Special Topics:* (3 Hours)
Prerequisites: Department approval.

This course periodically offers specialized or advanced discipline-specific content related to diverse areas of science, not offered in the normal curriculum, to interested and qualified students within the program. Topics will not be repeated within a 24 month period.

Sociology (SOC)

Courses

SOC 122   Introduction to Sociology (3 Hours) nbsp;
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 describes the basic concepts and theories sociologists use to explain the social world. 3 hrs. lecture/wk.

SOC 122H   HON: Introduction to Sociology* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

SOC 125   Social Problems (3 Hours) nbsp;
Selected social problems will be analyzed. Problems associated with race, gender, class, deviance, crime and ecology will be examined as perennial issues in contemporary society. In addition, other topics will be analyzed as they arise or as the instructor and students determine them to be significant. The history and development of each problem, as well as possible solutions, will be examined from a variety of perspectives. 3 hrs. lecture/wk.

SOC 125H   HON: Social Problems* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

SOC 127   Criminology (3 Hours)
This class will identify the major criminology theories. Various explanations for criminal conduct will be explored and society's responses to crime will 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 Hours)
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.lecture/wk.

SOC 131H   HON: Sociology of Families* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

SOC 146   Introduction to Social Work and Social Welfare (3 Hours) nbsp;
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. lecture/wk.

SOC 147   Social Work and Social Justice (3 Hours)
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. lecture/wk.

SOC 152   Perspectives on Aging (3 Hours)
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. lecture/wk.

SOC 165   Contemporary Chinese Society (3 Hours)
A survey of major issues and changes in Chinese society since 1949, this course focuses on social change while analyzing both continuity and change in social forces and historical processes. Social movements, political and economic change, social conflict and globalization are examined and analyzed through competing narratives. 3 hrs. lecture/wk. This course is typically offered in the spring semester.

SOC 180   Inequality and Diversity in The United States (3 Hours)
In modern American society, the issue of diversity is increasingly and vigorously debated. Topics like race, gender, class, sexuality are ever-present in the media and in public discourse. But what does the word "diversity" actually mean, and why does it matter? In this course, students will explore issues of inequality and diversity with attention to how power structures shape and reproduce existing systems of stratification. The course will critically examine the historical and social developments in cultural diversity and the challenges of multiculturalism. By understanding the tensions created by the social dynamics of inequality and diversity, students can begin to identify the resulting implications for capitalism and democracy. 3 hrs. lecture/wk.

SOC 205   Sociology of Food (3 Hours)
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 240   Sociology of Community (3 Hours)
In a world of instantaneous and mobile communication, many social observers and scholars suggest that community is being lost, and increasing numbers of Americans report feeling increasingly alienated from the people with whom bonds were traditionally the strongest. Taking this apparent paradox as its starting point, this course will examine the impact of macro-social forces such as economic transition, globalization, and technological advance on American communities, focusing especially on the post-Great Depression era. Students will explore the various bases on which communities are formed, as well as assessing threats to community solidarity. In its final analysis, this course will ask: Is community truly being lost, or is it simply changing form? 3hrs. lecture/wk.

SOC 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

SOC 292   Special Topics:* (3 Hours)
Prerequisites: Department approval.

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)

Courses

SPD 120   Interpersonal Communication (3 Hours) nbsp;
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. lecture/wk.

SPD 120H   HON: Interpersonal Communication* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

SPD 121   Public Speaking (3 Hours) nbsp;
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. lecture/wk.

SPD 121H   HON: Public Speaking* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

SPD 125   Personal Communication (3 Hours)
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.lecture/wk.

SPD 125H   HON: Personal Communication* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

SPD 130   Elementary Debate (3 Hours)
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. lecture/wk.

SPD 132   Intermediate Debate I* (3 Hours)
Prerequisites: SPD 130 or the equivalent.

This course is designed for those students interested in participating in competitive intercollegiate debate. Through the course, students will learn debate theory, debate skills and techniques, and methods of becoming successful intercollegiate competitors. Students are expected to travel to tournaments in order to develop skills in research, argument construction, debate format, intercollegiate debate speaking style and refutation. Students enrolling in this course will be required to participate as members of the intercollegiate debate team and will attend an appropriate number of weekend intercollegiate debate tournaments a semester. 3 hrs. lecture/wk.

SPD 180   Intercultural Communication (3 Hours)
The Intercultural Communication course is concerned with communication theory as it relates to cross-cultural 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. lecture/wk.

SPD 180H   HON: Intercultural Communication* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

SPD 230   Intermediate Debate II* (3 Hours)
Prerequisites: SPD 132 or equivalent course.

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. lecture/wk.

SPD 235   Advanced Debate* (3 Hours)
Prerequisites: SPD 230 or equivalent course.

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. lecture/wk.

SPD 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

SPD 292   Special Topics:* (3 Hours)
Prerequisites: Department approval.

This course periodically offers specialized or advanced discipline-specific content related to the study of communication not usually taught in the curriculum. This course may expand upon a topic introduced in a current course, synthesize topics that span across existing courses, or explore a topic not currently addressed in the Speech & Debate curriculum. Students may repeat Special Topics in Communication Studies for credit, but only on different topics.

Sustainable Agriculture (SAG)

Courses

SAG 245   Principles of Sustainable Market Farming (3 Hours)
This course is designed to familiarize Market Farmers with sustainable methods of production of crops grown in the Market Farming industry. The course will prepare students in the basic principles of soils; pest and weed management; varieties of plants to grow; establishment, growth, harvesting and post-harvesting of crops; marketing methods; and business management. Students will become familiar with principles of sustainability and the importance of good record keeping. 3 hrs. lecture/wk.

SAG 272   Sustainable Agriculture Fall Practicum (2 Hours)
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.

SAG 274   Sustainable Agriculture Spring Practicum (2 Hours)
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.

SAG 276   Sustainable Agriculture Summer Practicum (2 Hours)
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.

Theater (THEA)

Courses

THEA 120   Introduction to Theater (3 Hours) nbsp;
Students will be introduced to a variety of theatrical experiences, which includes reading plays and analyzing live theatre performances. This course also offers opportunities to experience theatre through set construction, design, stage and costume crew, or acting if the student desires. 3 hrs. lecture/wk.

THEA 120H   HON: Introduction to Theater* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

THEA 121   Fundamentals of Acting (3 Hours)
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 three in-class performances. 3 hrs. lecture/wk.

THEA 121H   HON: Fundamentals of Acting* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

THEA 123   Improvisation for the Theater* (2 Hours)
Prerequisites: THEA 130.

The student will be introduced to theater improvisation, which will emphasize creative stage activities not requiring a written script. Participation in activities of this course will release and enhance the work of serious acting students and show the students how to approach characterization viscerally rather than intellectually, spontaneously rather than intentionally. 2 hrs. lecture/wk.

THEA 130   Acting I* (3 Hours) nbsp;
Prerequisites: THEA 121 (with a grade of "C" or higher) or department approval.

Acting I will expand on the skills learned in Fundamentals of Acting and will concentrate on developing scene work. Emphasis will be on expanding creative potential through exercises in self-awareness, posture, movement, voice and personality projection. Students will complete a minimum of four in-class performances. 3 hrs./wk. plus rehearsals and performances.

THEA 130H   HON: Acting I* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

THEA 131   Voice and Speech (3 Hours)
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 Hour) nbsp;
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 Hour)
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 Hours)
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.

THEA 136   Costume Construction (3 Hours)
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 Hours)
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 140   Basic Stagecraft (3 Hours) nbsp;
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 Hours)
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.

THEA 209   Script Analysis (3 Hours)
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 Hours)
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. lecture/wk. plus rehearsals. This course is typically taught in the spring semester.

THEA 230   Acting II* (3 Hours) nbsp;
Prerequisites: THEA 130 (with a grade of "C" or higher).

This continuation of Acting I will focus on more in-depth character analysis and development, emphasizing the actor's responsibility in creating the character. Students will complete a minimum of five in-class performances. 3 hrs./wk. plus rehearsals and performances.

THEA 230H   HON: Acting II* (1 Hour)
Prerequisites: Honors department approval.

One-credit hour honors contract is available to qualified students who have an interest in a more thorough investigation of a topic related to this subject. An honors contract may incorporate research, a paper, or project and includes individual meetings with a faculty mentor. Student must be currently enrolled in the regular section of the courses or have completed it the previous semester. Contact the Honors Program Office, COM 201, for more information.

THEA 232   Play Reading and Production* (3 Hours)
Prerequisites: THEA 120.

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 Hour) nbsp;
Prerequisites: THEA 133.

Students gain practical experience in technical theater in this course. The student completes the course objectives by working on the theatre department's productions and/or working in the scene/costume shop during the semester. 4 hrs.lab/wk.

THEA 235   Technical Practicum III* (2 Hours)
Prerequisites: Permission of instructor.

Students will gain professional technical theater experience in this course by working as an apprentice for the theater department and an outside professional performing arts agency. While on campus and/or on location, students will build and install a stage and/or scenery as they work alongside theater professionals to execute theatrical productions. 4 hrs. lab/wk. This course is offered in summer only; permission from instructor is required to enroll.

THEA 250   Introduction to Costume Design (3 Hours)
This course is designed to instruct students on the concepts and realities of costume design. The course will provide hands-on design exercises that will include researching historical time periods, script reading and production analysis, costume rendering techniques, and presenting designs in a production meeting. This course is typically taught in the spring semester. 2 hrs. lecture and 2 hrs. lab/wk.

THEA 291   Independent Study* (1-7 Hour)
Prerequisites: 2.0 GPA minimum and department approval.

Independent study is a directed, structured learning experience offered as an extension of the regular curriculum. It is intended to allow individual students to broaden their comprehension of the principles of and competencies associated with the discipline or program. Its purpose is to supplement existing courses with individualized, in-depth learning experiences. Such learning experiences may be undertaken independent of the traditional classroom setting, but will be appropriately directed and supervised by regular instructional staff. Total contact hours vary based on the learning experience.

THEA 292   Special Topics:* (3 Hours)
Prerequisites: Instructor approval.

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.

Web Development and Digital Media (WEB)

Courses

WEB 110   HTML and CSS (3 Hours)
This course will cover the essential skills needed to create responsive websites, using HyperText Markup Language (HTML) and Cascading Style Sheets (CSS). Students will be introduced to the concepts, foundations, syntax and structure of HTML and CSS. Additional topics include the use of File Transfer Protocol (FTP) to publish websites and validation to web standards established by the World Wide Web Consortium (W3C) and other organizations. 3 hrs. lecture/wk.

WEB 112   Professional Skills for the Digital Developer (3 Hours)
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.

WEB 114   Web Scripting: JavaScript I* (2 Hours)
Prerequisites or corequisites: WEB 110.

Students will study the purpose for and principles of client-side scripting using JavaScript. Topics include JavaScript variables, operators, expressions, functions, control structures, arrays and event listeners. Students will use professional techniques to write and debug code. JavaScript security issues will be explored. 2 hrs. lecture/wk.

WEB 116   Digital Media Concepts* (2 Hours)
Prerequisites or corequisites: ENGL 121.

This course examines the digital media creation process and the impact of emerging technology on that process. Emphasis is placed on the need to understand target audiences, as well as the impact of content on those audiences. Creative culture is examined so students may begin to understand the relationship between ideas and the structure and management of the organizations and intellectual property systems used to express those ideas. 2 hrs. lecture/wk.

WEB 120   Web Analytics* (3 Hours)
Prerequisites: WEB 110.

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.

WEB 121   Digital Media Assets* (4 Hours)
Prerequisites or corequisites: WEB 116.

This course focuses on technologies and workflows in managing digital image, digital video and audio assets throughout an asset's life cycle. Through the study of digital and interactive media and its application in information technology, students will analyze and assess current and emerging technologies. Students will design and create multimedia projects that address customer needs and solve real world problems. Students implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. The knowledge and skills acquired and practiced will enable students to successfully perform and interact in a technology-driven society. 3 hrs. lecture/wk. 2 hrs. open lab/wk.

WEB 122   CSS Techniques Projects* (3 Hours)
Prerequisites: WEB 110.

Students will apply Cascading Style Sheet (CSS) techniques through the use of professional, advanced website 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.

WEB 123   Content Management Systems Strategies* (1 Hour)
Prerequisites: WEB 110.

This course will cover the basics of installing and configuring a Web Content Management System (CMS) to build blogs and websites. Students will use the CMS to perform many functions including installing plug-ins and assigning user permissions. 1 hr. lecture/wk.

WEB 124   Web Scripting: JavaScript II* (2 Hours)
Prerequisites: WEB 114.

Students will apply JavaScript to interact with the Document Object Model (DOM) and the Browser Object Model (BOM), and to manage state information, cookies and security. Students will also use JavaScript to enhance and validate form data and to manipulate data in strings and arrays, and will use existing JavaScript classes and objects to build upon their object-oriented programming skills. Students will study and apply coding techniques to address JavaScript security issues. 2 hr. lecture/wk.

WEB 125   Digital Video Tools (1 Hour)
This introductory video production technology course will cover basic desktop computer operating systems and the technologies used to bring photographic (film, video, still) images and audio into the digital domain. Students will learn to prepare audio and video media from pre-production to post-production techniques for digital delivery systems and the Internet. 1hr. lecture/wk.

WEB 126   Technical Interface Skills* (3 Hours)
Prerequisites: WEB 110.

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 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.

WEB 128   Server Scripting: PHP with MySQL* (2 Hours)
Prerequisites: WEB 110.

This course covers the commands and techniques available to add functionality to Web pages using Hypertext Preprocessor (PHP). 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. Students also 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. 2 hr. lecture/wk.

WEB 134   Web Scripting: JavaScript III* (2 Hours)
Prerequisites: WEB 124.

Students will write JavaScript to interact with touch and gesture events. They will also explore technologies that extend JavaScript's functionality, including popular Application Program Interfaces (APIs), libraries and frameworks. Ajax, JavaScript Object Notation (JSON), jQuery and other technologies will be introduced. Students will code secure web applications, often called web apps. 2 hr. lecture/wk.

WEB 150   Essential Web Concepts and Techniques I* (1 Hour)
Prerequisites or corequisites: CPCA 105 or CPCA 106 or CPCA 128 or appropriate score on an assesment test.

This current-events course introduces students to essential Web concepts and techniques. Students will explore a range of topics, from fundamental existing technologies to new trends. Real-world applications of the Web will be the primary focus of this course. Hands-on, practical projects will be performed to reinforce the concepts. 1 hr. lecture/wk.

WEB 152   Web Pages: Expression Web I* (1 Hour)
Prerequisites or corequisites: WEB 150.

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 website, identifying the purpose of HyperText Markup Language (HTML) 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 website. 1 hr. lecture/wk.

WEB 154   Web Pages: Dreamweaver I* (1 Hour)
Prerequisites or corequisites: WEB 150.

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 HyperText Markup Language (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.

WEB 156   JavaScript I* (1 Hour)
Prerequisites or corequisites: WEB 110.

This course provides a foundation to client-side scripting using the JavaScript language. Students will write, validate and debug JavaScript code to enhance the functionality of Web pages. Topics to be covered include common applications such as responding to user actions, creating pop-up dialog boxes and controlling the Web browser. 1 hr. lecture/wk.

WEB 158   Adobe Flash I* (1 Hour)
Prerequisites: WEB 110.

This course will cover the commands and techniques available to add Flash content to Web pages. 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.

WEB 160   Essential Web Concepts and Techniques II* (1 Hour)
Prerequisites or corequisites: WEB 150.

This course is a continuation of Essential Web Concepts and Techniques I, and will cover intermediate commands and techniques required to use various Web based tools and programs. Students will explore a wide range of topics, from existing technologies to new trends. Real-world applications of the Web will be the primary focus of this course. Hands-on, practical projects will be performed to reinforce the concepts. 1 hr. lecture/wk.

WEB 162   Web Pages: Expression Web II* (1 Hour)
Prerequisites or corequisites: WEB 152.

This course is a continuation of Web Pages: Expression Web I, and will cover intermediate-level commands and techniques required to create and enhance websites 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.

WEB 164   Web Pages: Dreamweaver II* (1 Hour)
Prerequisites or corequisites: WEB 154.

This course builds upon the concepts and design techniques presented in Dreamweaver I. The course includes a range of intermediate Dreamweaver techniques required to work efficiently and create manageable web site designs using Dreamweaver forms, templates and libraries, as well as covering managing your web site and checking files. 1 hr. lecture/wk.

WEB 166   JavaScript II* (1 Hour)
Prerequisites or corequisites: WEB 156.

This course builds on the skills learned in JavaScript I. Students will apply JavaScript to manipulate and validate Web form elements and data. Students will learn to use JavaScript in their Web pages to build menus and navigational structures. Students will expand their debugging skills. 1 hr. lecture/wk.

WEB 168   Adobe Flash II* (1 Hour)
Prerequisites or corequisites: WEB 158.

This course will build on the fundamental skills learned in Adobe Flash I. Topics will include complex animation techniques, interactivity with simple frame actions, and interactivity using objects such as buttons, hotspots and movie clips. 1 hr. lecture/wk.

WEB 170   Podcasting (3 Hours)
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 then 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.

WEB 172   WordPress I* (1 Hour)
Prerequisites or corequisites: CPCA 105 or CPCA 106 or CPCA 128 or an appropriate score on an assessment test.

This course will cover the commands and techniques required to create and revise blogs and websites using WordPress. Topics to be covered will include basic blogging techniques, working with digital images, hosting, spam and security issues, plugins and themes. Real-world applications of WordPress will be the primary focus of this course. Hands-on, practical projects will be performed to reinforce the concepts. 1 hr. lecture/wk.

WEB 178   Adobe Flash III* (1 Hour)
Prerequisites or corequisites: WEB 168.

This course will build on the skills learned in Adobe Flash II. 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.

WEB 188   ActionScript for Flash* (1 Hour)
Prerequisites: WEB 178.

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. Students will gain a strong foundation in the latest version of ActionScript and many more general object-oriented programming principles. 1 hr. lecture/wk.

WEB 190   E-Commerce I* (1 Hour)
Prerequisites or corequisites: WEB 150.

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 sitewide navigation links and publish a store. 1 hr. lecture/wk.

WEB 192   E-Commerce II* (1 Hour)
Prerequisites or corequisites: WEB 190.

Students will examine e-commerce security issues including privacy, copyright and transaction integrity. Students will study electronic payment systems and international, legal and taxation issues. 1 hr. lecture/wk.

WEB 230   Asynchronous JavaScript and XML* (1 Hour)
Prerequisites: WEB 114.

This course will introduce and explain the use of AJAX (Asynchronous JavaScript and eXtensible Markup Language). AJAX is not a technology itself but is a combination of HTML (HyperText Markup Language), CSS (Cascading Style Sheets) and JavaScript's use of the DOM (Document Object Model). Students will use AJAX to dynamically load data into a Web page. Topics include auto complete functionality and other interactive features to a Web page. 1 hr. lecture/wk.

WEB 231   Experience Design* (4 Hours)
Prerequisites: WEB 126.

This course will serve as a broad survey of the user experience design process for interactive products and services. Students will learn the building blocks of the user experience including interaction design, design research, information architecture and design principles. In addition to understanding how to discover needs and fulfill them with design, it will also provide knowledge of how to evaluate the concepts using common methods such as heuristic evaluation, prototyping or usability studies. Through readings, critiques, exercises and discussions, students will explore what makes the experience of an interactive media application successful. 3 hrs. lecture, 2 hrs. open lab/wk.

WEB 232   Introduction to eXtensible Markup Language* (3 Hours)
Prerequisites or corequisites: WEB 124.

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.

WEB 233   Visual Storytelling* (3 Hours)
Storytelling is how people share ideas and meaning. It's how we communicate, reach each other and connect. This course provides an introduction to the methods and tools of visual storytelling. Students will explore the impact of visual storytelling and how to communicate visually. Students will use storytelling techniques enabling them to create, design and produce stories using digital media. This course will explore the key elements to tell realistic and compelling visual stories. Students will write scripts, design storyboards, create still and moving images using music and narration to tell their stories. 6 hrs. integrated lecture/lab/wk.

WEB 234   Web Apps I* (3 Hours)
Prerequisites: WEB 124.

Mobile devices outnumber desktop and laptop computers three to one worldwide. This course will cover practical guidelines, standards, techniques and best practices for building Web applications using Client-Side programming including Hypertext Markup Language (HTML), Cascading Style Sheet (CSS) and JavaScript, including basic design and development principles for all mobile devices and platforms. Students will have strong knowledge about the methods and tools used in developing Web applications. 3 hrs. lecture/wk.

WEB 235   Digital Communications Technologies* (3 Hours)
Prerequisites: WEB 116.

This course is intended as an introduction to emerging digital communications technologies. While the primary focus will be on digital and mobile technologies and practices (contemporary new media), the course will also consider a range of older media when they were new including print culture, cinema, television, recorded sound, photography and the telephone. Students will focus on social technologies, such as blogs, wikis and spaces like YouTube, Facebook and Twitter to explore how people find information and how organizations communicate. 3 hrs. lecture/wk.

WEB 236   Content Management Systems Development* (3 Hours)
Prerequisites: WEB 128.

Content Management Systems (CMS) have gained in popularity as the number of robust and complex websites continues to grow. Students will cover the life cycle of websites, including their creation, management, distribution and publishing of content. This hands-on course will cover open source CMS applications such as Joomla, Drupal, WordPress and other technologies and the resources available to designers and developers. Students will explore the fundamentals of planning dynamic websites, CMS database management, developing Cascading Style Sheet (CSS)-controlled site templates, and creating database-driven websites through the planning and creation of their own topic-based sites. Student exercises include how to interact, engage and contribute to online communities and projects. 3 hrs. lecture/wk.

WEB 238   Interactive Scripting: JQuery* (4 Hours)
Prerequisites: WEB 122 and WEB 124.

Designers and developers can use jQuery to have complete access to all Cascading Style Sheets (CSS) styles of any element on a Web page, effortless Web page content manipulation via filters and patterns, detection or creation of events (mouse movement or click), moving, hiding and fading elements and other features. Students will be exposed to how to write efficient jQuery selectors to round up sets of Document Object Model (DOM) elements, how to use the framework's many methods to manipulate DOM elements, how to use the jQuery event application programming interface (API) to set up event listeners and event delegation, how to manage Ajax requests with jQuery and how to extend jQuery with custom filters and methods. 3 hrs. lecture/wk. and 2 hrs. open lab/wk.

WEB 240   HTML and CSS II* (3 Hours)
Prerequisites: WEB 124.

This course focuses on the latest generation of browser-based technologies for front-end design and development. Topics in the course include Cascading Style Sheets (CSS), HyperText Markup Language (HTML) elements, HTML Application Programming Interface (API), forms, audio and video, offline applications, Canvas drawing and animation, communication APIs, Web Sockets and Web Workers, Geolocation, local and session storage, Web Structured Query language (SQL) Database, and advanced topics such as mobile Web applications, performance analysis, browser issues and developer tools. 3 hrs. lecture/wk.

WEB 241   Digital Management Methods* (4 Hours)
Prerequisites: WEB 110.

The course covers systems development methodologies and the phases of development process from an idea to a product. Students will learn methods and tools that are used in the process of developing web-based and digital media applications. The course will introduce the students to systems development life cycle and the basic skills needed in systems analysis, design and development. Students will deliver an integrated, strategic campaign that demonstrates innovative digital media mastery. Out-of-class collaboration is required to complete the final project. 3 hrs. lecture, 2 hrs. open lab/wk.

WEB 243   Search Engine Optimization* (1 Hour)
Prerequisites: WEB 110.

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 website designs and strategies for search engine optimization. 1 hr. lecture/wk.

WEB 244   Web Apps II* (3 Hours)
Prerequisites: WEB 234.

This course examines the theory, concepts and techniques for designing, producing and evaluating Web applications to meet specific information needs. Students will engage with concepts, techniques and system issues in advanced Web application design and development using advanced programming tools and techniques. Students will look beyond the current status of development and design techniques and conjecture what is possible in the future. 3 hrs. lecture/wk.

WEB 245   Motion Graphics Tools* (1 Hour)
Prerequisites or corequisites: WEB 125.

This course is designed to introduce students to motion graphics and special effects. All basic applications of the program will be touched upon including credits, transitions, filters, masks and mattes. Students will experience the complete motion graphics workflow, beginning by capturing their own still images and videos and concluding by rendering and exporting an original composition. 1hr. lecture/wk.

WEB 290   Web Development and Digital Media Capstone* (3 Hours)
Prerequisites: Department approval.

This course is the culmination of the course work that makes up the Web Development and Digital Media AAS degree. It incorporates elements from each of the core program courses to allow students to walk through the entire Web design process, including design/project documentation, wire framing, creating mock-ups, revisions, pages and final deliverables. Upon completion of course, students will have a professional website that can serve as part of their professional portfolio. 3 hrs. lecture/wk.

WEB 292   Special Topics:* (1-3 Hour)
Prerequisites: Department approval.

This course periodically presents specialized topics in Web Development and Digital 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.

WEB 294   Web Development and Digital Media Internship* (1 Hour)
Prerequisites: Department approval.

Web Development and Digital Media Internship provides students with the opportunity to gain experience in the workplace and translate classroom learning into practice. An internship experience provides the student with an opportunity to explore career interests while applying knowledge and skills learned in the classroom in a work setting. The experience also helps students gain a clearer sense of what they still need to learn and provides an opportunity to build professional networks. 180 hours minimum requirement of on-the-job training.

Women and Gender Studies (WGS)

Courses

WGS 201   Global Women's Studies (3 Hours) nbsp;
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 Hours)
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.

Degree Requirements

JCCC offers four general education degrees. Each type has specific courses required to fulfill the requirements for earning the degree.

- Associate of Arts (p. 239)
- Associate of Science (p. 249)
- Associate of Applied Science (p. 236)
- Associate of General Studies (p. 244)

Students in all degree and certificate programs must also meet the standard JCCC Graduation Requirements (http://www.jccc.edu/student-resources/graduation/requirements.html). For information on how to participate in the JCCC graduation ceremony, please see Commencement (http://www.jccc.edu/student-resources/graduation/commencement.html).

Associate of Applied Science

The associate of applied science degree from JCCC

- is designed with an emphasis in a specific career program.
- requires completion of a minimum of 63 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 15 credits of general education requirements plus the courses listed for the specific career program. At a minimum, the distribution must include:

General Education Area		Credit Hours
Communications Associate of Applied Science		3
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		
ENGL 121	Composition I*	3
If your specific degree program requires a communications elective, choose three hours from the following:		
ENGL 122	Composition II*	3
ENGL 123	Technical Writing I*	3
ENGL 140	Writing for Interactive Media*	3
BUS 150	Business Communications*	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		3
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		
ENGL 130	Introduction to Literature*	3
ENGL 215	U.S. Latino and Latina Literature*	3
ENGL 217	Literature by Women*	3
ENGL 227	Introduction to Poetry*	3
ENGL 230	Introduction to Fiction*	3
ENGL 235	Drama as Literature*	3
ENGL 246	American Literature I*	3
ENGL 247	American Literature II*	3
ENGL 250	World Masterpieces*	3
ENGL 254	Masterpieces of the Cinema*	3

THEA 120	Introduction to Theater	3
B. Foreign Language		
FL 178	Intermediate Russian I*	3
FL 179	Intermediate Russian II*	3
FL 182	Intermediate Japanese I*	5
FL 192	Intermediate Chinese I*	3
FL 193	Intermediate Chinese II*	3
FL 195	Intermediate Arabic I*	3
FL 220	Intermediate German I*	3
FL 221	Intermediate German II*	3
FL 230	Intermediate Spanish I*	3
FL 231	Intermediate Spanish II*	3
FL 240	Intermediate French I*	3
FL 241	Intermediate French II*	3
C. History		
HIST 125	Western Civilization: Ancient World to the Renaissance	3
HIST 126	Western Civilization: Scientific Revolution to the Modern Age	3
HIST 128	Medieval History	3
HIST 129	Early Modern Europe 1500-1789	3
HIST 130	European History Since 1789	3
HIST 135	Eastern Civilization	3
HIST 137	African American Studies	3
HIST 140	U.S. History to 1877	3
HIST 141	U.S. History Since 1877	3
HIST 151	World History I: Traditional World	3
HIST 152	World History II: Modern World	3
HIST 160	Modern Russian History	3
HIST 162	Modern Latin America	3
D. Humanities		
ARTH 180	Art History: Ancient to Renaissance	3
ARTH 182	Art History: Renaissance to Modern	3
ARTH 184	Art History: Twentieth Century	3
ARTH 188	History of Photography	3
HUM 122	Introduction to Humanities	3
HUM 145	Introduction to World Humanities I	3
HUM 146	Introduction to World Humanities II	3
HUM 155	Classical Mythology	3
HUM 156	Contemporary Approaches to World Mythology	3
HUM 165	Introduction to Chinese Culture	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
MUS 128	History of Rock and Roll Music	3
REL 120	Exploring World Religions	3
REL 125	Religions of the East	3
REL 126	Religions of the West	3
E. Philosophy		
PHIL 121	Introduction to Philosophy	3
PHIL 124	Logic and Critical Thinking	3
PHIL 128	Environmental Ethics	3

PHIL 143	Ethics	3
PHIL 154	History of Ancient Philosophy	3
PHIL 176	Philosophy of Religion	3
Total Program Hours		3

Social Science/Economics Associate of Applied Science		3

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

ANTH 125	Cultural Anthropology	3
ANTH 126	Physical Anthropology	3
ANTH 130	World Cultures	3
ANTH 142	World Prehistory	3
ANTH 165	Linguistic Anthropology	3

B. Economics

ECON 132	Survey of Economics	3
ECON 230	Principles of Macroeconomics	3
ECON 231	Principles of Microeconomics	3

C. Political Science

POLS 122	Political Science	3
POLS 124	American National Government	3
POLS 126	State and Local Government	3
POLS 132	Introduction to Comparative Government	3
POLS 135	International Relations	3
POLS 175	Environmental Policy and Law	3
POLS 192	Political Theory	3

D. Psychology

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

E. Sociology

SOC 122	Introduction to Sociology	3
SOC 125	Social Problems	3
SOC 131	Sociology of Families	3

F. Gender and Ethnic Studies

| WGS 201 | Global Women's Studies | 3 |
| **Total Program Hours** | | 3 |

Science and/or Mathematics Associate of Applied Science		3

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

MATH 116	Intermediate Algebra*	3
MATH 118	Geometry*	3
MATH 120	Business Mathematics*	3
MATH 130	Technical Mathematics I*	3
MATH 131	Technical Mathematics II*	3
MATH 165	Finite Mathematics*	3
MATH 171	College Algebra*	3
MATH 172	Trigonometry*	3
MATH 173	Precalculus*	5
MATH 175	Discrete Mathematics and its Applications*	3
MATH 181	Statistics*	3

MATH 231	Business and Applied Calculus I*	3
MATH 232	Business and Applied Calculus II*	3
MATH 241	Calculus I*	5
MATH 242	Calculus II*	5
MATH 243	Calculus III*	5
MATH 254	Differential Equations*	4
B. 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
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
BIOL 225	Human Physiology*	4
BIOL 230	Microbiology*	3
BIOL 231	Microbiology Lab*	2
C. 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
CHEM 125	General Chemistry I Lab*	1
CHEM 131	General Chemistry II Lecture*	4
CHEM 132	General Chemistry II Lab*	1
CHEM 140	Principles of Organic Biological Chemistry*	5
GEOS 130	General Geology	5
GEOS 140	Physical Geography	3
GEOS 141	Physical Geography Lab*	2
GEOS 145	World Regional Geography	3
PHYS 130	College Physics I*	5
PHYS 131	College Physics II*	5
PHYS 220	Engineering Physics I*	5
PHYS 221	Engineering Physics II*	5
PSCI 120	Physical Science	4
Total Program Hours		3

3 additional credit hours to be selected from one of the above categories	3
Total Hours:	15

*Course has prerequisites

Associate of Arts

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 a minimum of 63 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 30 credits of general education requirements plus a minimum of 33 additional hours of electives:

General Education Area		Credit Hours
Communications Requirements for Associate of Arts		9

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

ENGL 121	Composition I*	3
ENGL 122	Composition II*	3

B. Oral Communication

Select one of the following:		3
SPD 120	Interpersonal Communication	
SPD 121	Public Speaking	
SPD 125	Personal Communication	
SPD 180	Intercultural Communication (Also meets Cultural Diversity Requirement)	

Total Hours		9

Humanities Associate of Arts		6

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. History is included in the Humanities category

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

A. Literature/Theatre

ENGL 130	Introduction to Literature*	3
ENGL 215	U.S. Latino and Latina Literature* (Also meets Cultural Diversity Requirement)	3
ENGL 217	Literature by Women* (Also meets Cultural Diversity Requirement)	3
ENGL 227	Introduction to Poetry*	3
ENGL 230	Introduction to Fiction*	3
ENGL 235	Drama as Literature*	3
ENGL 246	American Literature I*	3
ENGL 247	American Literature II*	3
ENGL 250	World Masterpieces*	3
ENGL 254	Masterpieces of the Cinema*	3
THEA 120	Introduction to Theater	3

B. Foreign Language

FL 178	Intermediate Russian I*	3
FL 179	Intermediate Russian II*	3
FL 182	Intermediate Japanese I*	5
FL 192	Intermediate Chinese I*	3
FL 193	Intermediate Chinese II*	3
FL 195	Intermediate Arabic I*	3
FL 220	Intermediate German I*	3
FL 221	Intermediate German II*	3
FL 230	Intermediate Spanish I*	3
FL 231	Intermediate Spanish II*	3
FL 240	Intermediate French I*	3
FL 241	Intermediate French II*	3

C. History

HIST 125	Western Civilization: Ancient World to the Renaissance	3
HIST 126	Western Civilization: Scientific Revolution to the Modern Age	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

ARTH 180	Art History: Ancient to Renaissance (Also meets Cultural Diversity Requirement)	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 ((Also meets Cultural Diversity Requirement))	3
HUM 165	Introduction to Chinese Culture	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
MUS 128	History of Rock and Roll 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

PHIL 121	Introduction to Philosophy	3
PHIL 124	Logic and Critical Thinking	3
PHIL 128	Environmental Ethics	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   6

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

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
ANTH 165	Linguistic Anthropology (Also meets Cultural Diversity Requirement)	3

B. Economics

ECON 132	Survey of Economics	3
ECON 230	Principles of Macroeconomics	3
ECON 231	Principles of Microeconomics	3

C. Political Science

POLS 122	Political Science	3
POLS 124	American National Government	3
POLS 126	State and Local Government	3
POLS 132	Introduction to Comparative Government (Also meets Cultural Diversity Requirement)	3
POLS 135	International Relations (Also meets Cultural Diversity Requirement)	3
POLS 175	Environmental Policy and Law	3
POLS 192	Political Theory (Also meets Cultural Diversity Requirement)	3
D. Psychology		
PSYC 121	Applied Psychology	3
PSYC 130	Introduction to Psychology	3
E. Sociology		
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		
WGS 201	Global Women's Studies (Also meets Cultural Diversity Requirement)	3
Total Program Hours		6

Science and Mathematics Associate of Arts	9

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

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
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
BIOL 225	Human Physiology*	4
BIOL 230	Microbiology*	3
BIOL 231	Microbiology Lab*	2
B. Physical Science		
ASTR 120	Fundamentals of Astronomy	3
ASTR 122	Astronomy	4
CHEM 120	Chemistry in Society*	4
CHEM 122	Principles of Chemistry*	5
CHEM 124	General Chemistry I Lecture*	4
CHEM 125	General Chemistry I Lab*	1
CHEM 131	General Chemistry II Lecture*	4
CHEM 132	General Chemistry II Lab*	1
CHEM 140	Principles of Organic Biological Chemistry*	5
GEOS 130	General Geology	5
GEOS 140	Physical Geography	3
GEOS 141	Physical Geography Lab*	2
GEOS 145	World Regional Geography (Also meets Cultural Diversity Requirement)	3
PHYS 130	College Physics I*	5

PHYS 131	College Physics II*	5
PHYS 220	Engineering Physics I*	5
PHYS 221	Engineering Physics II*	5
PSCI 120	Physical Science	4
C. Mathematics		
MATH 165	Finite Mathematics*	3
MATH 171	College Algebra*	3
MATH 172	Trigonometry*	3
MATH 173	Precalculus*	5
MATH 175	Discrete Mathematics and its Applications*	3
MATH 181	Statistics*	3
MATH 231	Business and Applied Calculus I*	3
MATH 232	Business and Applied Calculus II*	3
MATH 241	Calculus I*	5
MATH 242	Calculus II*	5
MATH 243	Calculus III*	5
MATH 254	Differential Equations*	4
Total Program Hours		9

Cultural Diversity Courses Associate of Arts   1 course

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

ADMJ 223	The World of Crime*	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
ANTH 153	The Anthropology of the Paranormal Supernatural	3
ANTH 165	Linguistic Anthropology (Also meets a General Education Requirement)	3
ARTH 180	Art History: Ancient to Renaissance (Also meets General Education Requirement)	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* (Also meets General Education Requirement)	3
ENGL 217	Literature by Women* (Also meets General Education Requirement)	3
ENGL 244	Literature of American Popular Music*	3
FL 145	Field Study in Russian Language Culture	2
FMS 100	Intro to Film	3
FMS 200	Intro to Filmmaking and Media Aesthetics	3
GEOS 145	World Regional Geography (Also meets General Education Requirement)	3
GIST 101	Study Abroad Reflections*	1-3
GIST 250	Introduction to Globalization	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 General Education Requirement)	3
HIST 150	Islam: Religion and Civilization	3
HIST 151	World History I: Traditional World (Also meets General Education Requirement)	3
HIST 152	World History II: Modern World (Also meets General Education Requirement)	3
HIST 160	Modern Russian History (Also meets General Education Requirement)	3
HIST 162	Modern Latin America (Also meets General Education Requirement)	3

HIST 167	Introduction to History: Japan	3
HIST 180	North American Indian History	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 General Education Requirement)	3
HUM 146	Introduction to World Humanities II (Also meets General Education Requirement)	3
HUM 150	Islam: Religion Civilization	3
HUM 156	Contemporary Approaches to World Mythology (Also meets General Education Requirement)	3
HUM 167	Introduction to Japanese Culture (Also meets General Education Requirement)	3
INTR 145	Introduction to the Deaf Community*	3
JOUR 220	International Media	3
MUS 126	Introduction to World Music (Also meets General Education Requirement)	3
MUS 128	History of Rock and Roll Music	3
PHIL 142	History of Asian Philosophy	3
POLS 132	Introduction to Comparative Government (Also meets a General Education Requirement)	3
POLS 135	International Relations (Also meets General Education Requirement)	3
POLS 192	Political Theory (Also meets General Education Requirement)	3
POLS 200	Model United Nations	3
PSYC 205	Human Sexuality*	3
PSYC 220	Social Psychology*	3
REL 120	Exploring World Religions (Also meets General Education Requirement)	3
REL 125	Religions of the East (Also meets General Education Requirement)	3
REL 126	Religions of the West (Also meets General Education Requirement)	3
REL 150	Islam: Religion Civilization	3
SOC 122	Introduction to Sociology (Also meets General Education Requirement)	3
SOC 125	Social Problems (Also meets General Education Requirement)	3
SOC 146	Introduction to Social Work and Social Welfare	3
SOC 165	Contemporary Chinese Society	3
SOC 240	Sociology of Community	3
SPD 180	Intercultural Communication (Also meets General Education Requirement)	3
WGS 201	Global Women's Studies (Also meets General Education Requirement)	3
WGS 220	The Many Women of Islam	3

Total Hours: 30

*Course has prerequisites

Note: The associate of arts is designed as a transfer degree. Students should refer to the transfer information (http://www.jccc.edu/student-resources/counseling/transfer) available in the Student Success Center when selecting electives. Students interested in a specific major should talk with a JCCC counselor (http://www.jccc.edu/student-resources/counseling/academic/staff.html).

Associate of General Studies

The associate of general studies degree from JCCC

- is designed for students who wish to receive a degree for completion of a more general program of study.
- requires completion of 63 college-level credit hours within specified course categories with a 2.0 or higher GPA.
- 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 30 credit of general education requirements. At a minimum, the distribution must include the following:

General Education Area	Credit Hours
The Arts Associate of General Studies	3

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

ARTH 180	Art History: Ancient to Renaissance	3
ARTH 182	Art History: Renaissance to Modern	3
ARTH 184	Art History: Twentieth Century	3
ARTH 188	History of Photography	3
FL 178	Intermediate Russian I*	3
FL 179	Intermediate Russian II*	3
FL 192	Intermediate Chinese I*	3
FL 193	Intermediate Chinese II*	3
FL 220	Intermediate German I*	3
FL 221	Intermediate German II*	3
FL 230	Intermediate Spanish I*	3
FL 231	Intermediate Spanish II*	3
FL 240	Intermediate French I*	3
FL 241	Intermediate French II*	3
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
MUS 121	Introduction to Music Listening	3
MUS 125	Introduction to Jazz Listening	3
MUS 126	Introduction to World Music	3
MUS 128	History of Rock and Roll Music	3
THEA 120	Introduction to Theater	3
Total Program Hours		3

Communication Skills Requirements for Associate of General Studies	6

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

ENGL 121	Composition I*	3

Speaking

SPD 120	Interpersonal Communication	3
SPD 121	Public Speaking	3
SPD 125	Personal Communication	3
SPD 180	Intercultural Communication	3
Total Program Hours		3

Culture and Ethics Associate of General Studies	6

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

ENGL 130	Introduction to Literature*	3
ENGL 230	Introduction to Fiction*	3
ENGL 235	Drama as Literature*	3
ENGL 250	World Masterpieces*	3
GEOS 130	General Geology	5
GEOS 140	Physical Geography	3
GEOS 141	Physical Geography Lab*	2
HIST 125	Western Civilization: Ancient World to the Renaissance	3
HIST 126	Western Civilization: Scientific Revolution to the Modern Age	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
Cultural Perspective		
ANTH 125	Cultural Anthropology	3
ANTH 130	World Cultures	3
ENGL 130	Introduction to Literature*	3
ENGL 235	Drama as Literature*	3
ENGL 246	American Literature I*	3
ENGL 247	American Literature II*	3
ENGL 250	World Masterpieces*	3
ENGL 254	Masterpieces of the Cinema*	3
FL 178	Intermediate Russian I*	3
FL 179	Intermediate Russian II*	3
FL 182	Intermediate Japanese I*	5
FL 192	Intermediate Chinese I*	3
FL 193	Intermediate Chinese II*	3
FL 195	Intermediate Arabic I*	3
FL 220	Intermediate German I*	3
FL 221	Intermediate German II*	3
FL 230	Intermediate Spanish I*	3
FL 231	Intermediate Spanish II*	3
FL 240	Intermediate French I*	3
FL 241	Intermediate French II*	3
GEOS 145	World Regional Geography	3
HUM 156	Contemporary Approaches to World Mythology	3
HUM 165	Introduction to Chinese Culture	3
HUM 167	Introduction to Japanese Culture	3
JOUR 120	Mass Media and Society	3
PHIL 121	Introduction to Philosophy	3
PHIL 128	Environmental Ethics	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
POLS 175	Environmental Policy and Law	3
POLS 192	Political Theory	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 Program Hours		6

Mathematics Associate of General Studies		3

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

MATH 120	Business Mathematics*	3
MATH 130	Technical Mathematics I*	3
MATH 131	Technical Mathematics II*	3
MATH 165	Finite Mathematics*	3
MATH 171	College Algebra*	3
MATH 172	Trigonometry*	3
MATH 173	Precalculus*	5
MATH 175	Discrete Mathematics and its Applications*	3
MATH 181	Statistics*	3
MATH 231	Business and Applied Calculus I*	3
MATH 232	Business and Applied Calculus II*	3
MATH 241	Calculus I*	5
MATH 242	Calculus II*	5
MATH 243	Calculus III*	5
MATH 254	Differential Equations*	4
PHYS 220	Engineering Physics I*	5
PHYS 221	Engineering Physics II*	5
Total Program Hours		3

Modes of Inquiry Associate of General Studies		6

One course from each of the following categories counts toward the six required hours.

Scientific

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*	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*	5
BIOL 225	Human Physiology*	4
BIOL 230	Microbiology*	3
BIOL 231	Microbiology Lab*	2
CHEM 120	Chemistry in Society*	4
CHEM 122	Principles of Chemistry*	5
CHEM 124	General Chemistry I Lecture*	4
CHEM 125	General Chemistry I Lab*	1
CHEM 131	General Chemistry II Lecture*	4
CHEM 132	General Chemistry II Lab*	1
CHEM 140	Principles of Organic Biological Chemistry*	5
GEOS 130	General Geology	5

GEOS 140	Physical Geography	3
GEOS 141	Physical Geography Lab*	2
PHIL 124	Logic and Critical Thinking	3
PHYS 130	College Physics I*	5
PHYS 131	College Physics II*	5
PHYS 220	Engineering Physics I*	5
PHYS 221	Engineering Physics II*	5
PSCI 120	Physical Science	4
PSYC 130	Introduction to Psychology	3
Social		
ECON 132	Survey of Economics	3
ECON 230	Principles of Macroeconomics	3
ECON 231	Principles of Microeconomics	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 Program Hours		6

Computer Skills Associate of General Studies		3

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		
CIS 124	Introduction to Computer Concepts and Applications	3
OR		
Three hours from the following courses:		3
any CPCA course		
any WEB course		
any CDTP course		
LIBR 125	Introduction to Library Research	1
or MATH 181	Statistics*	
Total Program Hours		3

Global Issues/Diversity Associate of General Studies		3

These courses fulfill the global issues/diversity requirements for the Associate of General Studies (AGS) degree. Please refer to the AGS page (p. 326) for a list of all requirements.

Global Issues/Diversity

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
BUS 235	Introduction to International Business	3
ENGL 217	Literature by Women*	3
FL 116	Elementary Latin I	3
FL 117	Elementary Latin II*	3
FL 120	Elementary German I	5

FL 121	Elementary German II*	5
FL 130	Elementary Spanish I	5
FL 131	Elementary Spanish II*	5
FL 140	Elementary French I	5
FL 141	Elementary French II*	5
FL 150	Elementary Russian I	5
FL 151	Elementary Russian II*	5
FL 160	Elementary Italian I	5
FL 165	Elementary Chinese I	5
FL 166	Elementary Chinese II*	5
FL 170	Elementary Japanese I	5
FL 171	Elementary Japanese II*	5
FL 175	Elementary Brazilian Portuguese I	5
FL 223	Conversational German*	2
FL 234	Conversational Spanish*	2
FL 243	Conversational French*	2
GIST 250	Introduction to Globalization	3
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
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
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	Contemporary Chinese Society	3
SPD 180	Intercultural Communication	3
Total Program Hours		3

Total Hours:	30

*Course has prerequisites

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

Associate of Science

The associate of science degree from JCCC

- is designed as a professional-oriented degree for transfer to another college or university to support progress toward earning a bachelors degree.

- requires a minimum of 63 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:

General Education Area		Credit Hours
Communications Associate of Science		9

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

ENGL 121	Composition I*	3

B. Communications Elective

Select two of the following:		6
ENGL 122	Composition II*	
ENGL 123	Technical Writing I*	
ENGL 140	Writing for Interactive Media*	
BUS 150	Business Communications*	
SPD 120	Interpersonal Communication	
SPD 121	Public Speaking	
SPD 125	Personal Communication	
SPD 180	Intercultural Communication (Also meets Cultural Diversity Requirement)	
Total Hours		9

Humanities Associate of Science		6

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

ENGL 130	Introduction to Literature*	3
ENGL 215	U.S. Latino and Latina Literature* (Also meets Cultural Diversity Requirement)	3
ENGL 217	Literature by Women* (Also meets Cultural Diversity Requirement)	3
ENGL 227	Introduction to Poetry*	3
ENGL 230	Introduction to Fiction*	3
ENGL 235	Drama as Literature*	3
ENGL 246	American Literature I*	3
ENGL 247	American Literature II*	3
ENGL 250	World Masterpieces*	3
ENGL 254	Masterpieces of the Cinema*	3
THEA 120	Introduction to Theater	3

B. Foreign Language

FL 178	Intermediate Russian I*	3
FL 179	Intermediate Russian II*	3
FL 182	Intermediate Japanese I*	5
FL 192	Intermediate Chinese I*	3
FL 193	Intermediate Chinese II*	3
FL 195	Intermediate Arabic I*	3
FL 220	Intermediate German I*	3
FL 221	Intermediate German II*	3
FL 230	Intermediate Spanish I*	3
FL 231	Intermediate Spanish II*	3
FL 240	Intermediate French I*	3
FL 241	Intermediate French II*	3

C. History

HIST 125	Western Civilization: Ancient World to the Renaissance	3
HIST 126	Western Civilization: Scientific Revolution to the Modern Age	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

ARTH 180	Art History: Ancient to Renaissance (Also meets Cultural Diversity Requirement)	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 165	Introduction to Chinese Culture	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
MUS 128	History of Rock and Roll 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

PHIL 121	Introduction to Philosophy	3
PHIL 124	Logic and Critical Thinking	3
PHIL 128	Environmental Ethics	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   6

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

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
ANTH 165	Linguistic Anthropology (Also meets Cultural Diversity Requirement)	3

B. Economics

ECON 132	Survey of Economics	3
ECON 230	Principles of Macroeconomics	3
ECON 231	Principles of Microeconomics	3

C. Political Science

POLS 122	Political Science	3
POLS 124	American National Government	3
POLS 126	State and Local Government	3
POLS 132	Introduction to Comparative Government (Also meets Cultural Diversity Requirement)	3
POLS 135	International Relations (Also meets Cultural Diversity Requirement)	3
POLS 175	Environmental Policy and Law	3
POLS 192	Political Theory (Also meets Cultural Diversity Requirement)	3

D. Psychology

PSYC 121	Applied Psychology	3
PSYC 130	Introduction to Psychology	3

E. Sociology

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

WGS 201	Global Women's Studies (Also meets Cultural Diversity Requirement)	3
Total Program Hours		**6**

Science and Mathematics Associate of Science	12

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

MATH 171	College Algebra*	3
MATH 172	Trigonometry*	3
MATH 173	Precalculus*	5
MATH 175	Discrete Mathematics and its Applications*	3
MATH 181	Statistics*	3
MATH 231	Business and Applied Calculus I*	3
MATH 232	Business and Applied Calculus II*	3
MATH 241	Calculus I*	5
MATH 242	Calculus II*	5
MATH 243	Calculus III*	5
MATH 254	Differential Equations*	4

A. Science

(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
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
BIOL 225	Human Physiology*	4

BIOL 230	Microbiology*	3
BIOL 231	Microbiology Lab*	2
(Physical Science)		
ASTR 120	Fundamentals of Astronomy	3
ASTR 122	Astronomy	4
CHEM 120	Chemistry in Society*	4
CHEM 122	Principles of Chemistry*	5
CHEM 124	General Chemistry I Lecture*	4
CHEM 125	General Chemistry I Lab*	1
CHEM 131	General Chemistry II Lecture*	4
CHEM 132	General Chemistry II Lab*	1
CHEM 140	Principles of Organic Biological Chemistry*	5
GEOS 130	General Geology	5
GEOS 140	Physical Geography	3
GEOS 141	Physical Geography Lab*	2
GEOS 145	World Regional Geography (Also meets Cultural Diversity Requirement)	3
PHYS 130	College Physics I*	5
PHYS 131	College Physics II*	5
PHYS 220	Engineering Physics I*	5
PHYS 221	Engineering Physics II*	5
PSCI 120	Physical Science	4
Total Program Hours		12

Cultural Diversity Courses Associate of Science   1 course

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

ADMJ 223	The World of Crime*	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
ANTH 153	The Anthropology of the Paranormal Supernatural	3
ANTH 165	Linguistic Anthropology (Also meets a General Education Requirement)	3
ARTH 180	Art History: Ancient to Renaissance	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* (Also meets a General Education requirement)	3
ENGL 217	Literature by Women* (Also meets a General Education requirement)	3
ENGL 244	Literature of American Popular Music*	3
FL 145	Field Study in Russian Language Culture	2
FMS 100	Intro to Film	3
FMS 200	Intro to Filmmaking and Media Aesthetics	3
GEOS 145	World Regional Geography	3
GIST 101	Study Abroad Reflections*	1-3
GIST 250	Introduction to Globalization	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 and 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 180	North American Indian History	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 Mythology	3
HUM 167	Introduction to Japanese Culture (Also meets a General Education requirement)	3
JOUR 220	International Media	3
INTR 145	Introduction to the Deaf Community*	3
MUS 126	Introduction to World Music (Also meets a General Education requirement)	3
MUS 128	History of Rock and Roll Music	3
PHIL 142	History of Asian Philosophy	3
POLS 132	Introduction to Comparative Government (Also meets a General Education Requirement)	3
POLS 135	International Relations (Also meets a General Education requirement)	3
POLS 192	Political Theory (Also meets a General Education requirement)	3
POLS 200	Model United Nations	3
PSYC 205	Human Sexuality*	3
PSYC 220	Social Psychology*	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	Contemporary Chinese Society	3
SOC 240	Sociology of Community	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

Total Hours: 33

*Course has prerequisites

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.

Degrees and Certificates

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 (http://www.jccc.edu/student-resources/records/files/change-major-form.pdf) to the Student Success Center.

Accounting

Accounting, AAS (p. 260)

Administration of Justice/Law Enforcement

Associate of Arts with Emphasis in Administration of Justice (p. 262)

Police Academy Certificate (p. 263)

Animation

Animation-Entertainment and Game Art Design, AAS (p. 264)

Automation Engineer Technology

Automation Engineer Technology, AAS (p. 266)

Automotive Technology

Automotive Technology, AAS (p. 268)

Automotive Technology Certificate (p. 269)

Biotechnology

Biotechnology, AAS (p. 270)

Biotechnology, AS (p. 271)

Biotechnology Certificate (p. 270)

Business Administration

Business Administration, AAS (p. 274)

Supervision Management Certificate (p. 275)

Business Office Technology

Administrative Assistant, AAS (p. 278)

Administrative Assistant with Legal Emphasis, AAS (p. 276)

Administrative Assistant with Medical Emphasis, AAS (p. 277)

Administrative Support Specialist Certificate (p. 279)

Legal Administrative Assistant Certificate (p. 280)

Medical Office Assistant Certificate (p. 281)

Office Careers Certificate (p. 282)

Computer Information Systems

Associate of Science with Emphasis in Information Systems Technology (p. 283)

Computer Information Systems, AAS (p. 284)

Computer Information Systems - Software Developer Certificate (p. 286)

Construction Management

Cosmetology

Dental Hygiene

Drafting Technology

Early Childhood Education

Electrical Technology

Electronics Technology

Emergency Medical Science (EMS)

Entrepreneurship

Fashion Merchandising and Design

Fire Services Administration

Game

General Sciences

General Studies

Graphic Design

Health Care Interpreting

Health Information Systems

Health Occupations

Heating, Ventilation and Air Conditioning Technology

Horticulture

Hospitality Management

Information Technology

Interior Design

Interpreter Training

Legal Interpreting

Legal Studies

Liberal Arts

Marketing and Management

Medical Information and Revenue Management

Metal Fabrication/Welding

Neurodiagnostic Technology

Nursing

Railroad Electronics

Railroad Industrial Technology

Railroad Operations

Recording Arts

Respiratory Care

Sustainable Agriculture

Web Technologies

Accounting

Accounting, AAS

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 accounting positions. The internship course gives the graduate on-the-job experience working in an approved business. Two-year graduates may find positions as general bookkeepers, accounting clerks and accounts receivable or payable specialists.

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 (lmcole@jccc.edu) or a JCCC counselor.

(Major Code 2400; State CIP Code 52.0302)

- Accounting (http://www.jccc.edu/academics/business/accounting)

Associate of Applied Science Degree

First Semester

ACCT 121	Accounting I	3
ACCT 131	Federal Income Taxes I	3
CPCA 128	PC Applications: MS Office	3
ENGL 121	Composition I*	3
MATH 171	College Algebra* (or higher)	3
or MATH 120	Business Mathematics*	
Total Hours		15

Second Semester

Business Electives		3
NOTE: Business electives are any courses with the BUS, ENTR, ECON or MKT prefix.		
ACCT 122	Accounting II*	3
ACCT 136	Computerized Accounting Applications*	2
BUS 150	Business Communications*	3
BUS 225	Human Relations	3
CPCA 111	Spreadsheets II: MS Excel*	1
PHIL 140	Business Ethics	3
Total Hours		18

Third Semester

ACCT Electives (see below)		3
ACCT 141	Computerized Accounting Problems*	2
ACCT 222	Managerial Accounting*	3
ACCT 231	Intermediate Accounting I*	3
Humanities Elective^		3
Total Hours		14

^   See all AAS general education electives (p. 236)

Fourth Semester

Business Electives		6
NOTE: Business electives are any courses with the BUS, ENTR, ECON or MKT prefix.		
ACCT 278	Accounting Internship*	1
ACCT 285	Accounting Capstone*	3
BUS 261	Business Law I*	3
Social Science and/or Economics Elective ^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

ACCT Electives

ACCT 132	Federal Income Taxes II*	3
ACCT 215	Accounting for Nonprofit Organizations*	3
ACCT 232	Intermediate Accounting II*	3
ACCT 240	Fraud Examination*	3
ACCT 292	Special Topics:*	1-3

Total Program Hours: 63

Administration of Justice/Law Enforcement

Associate of Arts with Emphasis in Administration of Justice

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. A list of approved **cultural diversity** courses can be found in the list of AA general education electives (p. 239).

(Major Code 2120; State CIP Code 43.0107)

- Administration of Justice (http://www.jccc.edu/academics/law/administration-justice)

Associates of Arts Degree

First Semester

ENGL 121	Composition I*	3
ADMJ 121	Introduction to Administration of Justice	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.		
ADMJ 124	Criminal Justice and Corrections	3
ADMJ 127	Criminology	3
Humanities Elective (cannot be a philosophy course) ^		3
Total Hours		15

^   See all AA general education electives (p. 239)

Second Semester

ENGL 122	Composition II*	3
MATH 171	College Algebra* (or higher)	3
SPD 120	Interpersonal Communication	3
or SPD 121	Public Speaking	
or SPD 125	Personal Communication	
ADMJ 141	Criminal Law*	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.		
ADMJ 235	Community Based Corrections	3
Total Hours		15

Third Semester

ADMJ Program Elective (see below)		3
PHIL 124	Logic and Critical Thinking	3
PSYC 130	Introduction to Psychology	3
ADMJ 228	Criminal Justice Communications*	2
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.		
Science and/or Math Elective ^		3
Total Hours		17

^   See all AA general education electives (p. 239)

Fourth Semester

ADMJ Program Elective (see below)		6
ADMJ 255	Ethics and Criminal Justice	3
Science course with Lab ^		4
Social Science Elective (cannot be a psychology course) ^		3
Total Hours		16

^   See all AA general education electives (p. 239)

ADMJ Program Electives

ADMJ 122	Police Operations*	3
ADMJ 130	Crime Prevention	3
ADMJ 133	Juvenile Delinquency	3
ADMJ 143	Crime Analysis	3
ADMJ 145	Fundamentals Private Security	3
ADMJ 148	Physical and Sexual Violence within the Family	3
ADMJ 154	Fundamentals of Criminal Investigation	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.		
ADMJ 170	Drugs and Crime	3
ADMJ 180	Correctional Casework*	3
ADMJ 201	Police Interrogation	3
ADMJ 215	Understanding Terrorism	3
ADMJ 221	Forensic Science and Crime Scene Investigation	3
ADMJ 223	The World of Crime*	3
ADMJ 230	Criminal Behavior*	3
ADMJ 275	Police Management*	3
ADMJ 285	Administration of Justice Internship*	3

Total Program Hours: 63

Police Academy Certificate

This course consists of 60 clock hours of law enforcement training provided in addition to the 540 hours required by the Kansas Minimum Standards Training Act for recruits attending the Police Academy. While the required 600-hour curriculum is provided without fee, enrollment in advanced training is required of all those attending the academy. The curriculum covers law, criminal investigations, patrol procedures, defensive tactics, report writing and specialized training required by local law enforcement agencies.

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

(Major Code 4880; State CIP Code 43.0103)

Johnson County Regional Police Academy (http://www.jccc.edu/academics/public-safety/police-academy)

Required Course

ADMJ 265	Advanced Police Training*	12
Total Hours		12

Total Program Hours: 12

Animation

Animation-Entertainment and Game Art Design, AAS

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. Courses 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

First Semester

CDTP 135	Desktop Photo Manipulation I: Photoshop	1
ANI 122	Digital Rendering for Animation*	3
ANI 125	Introduction to 2D Animation*	3
ANI 150	Introduction to 3D Modeling and Game Art*	3
ART 130	Drawing I	3
ENGL 121	Composition I*	3
Total Hours		16

Second Semester

ANI 220	CG Environments and Animation	3
ANI 245	Character Animation*	3
ANI 258	Game Level Design*	3
ART 231	Life Drawing I*	3
Humanities Elective ^		3
Communications Elective ^		3
Note: ENGL 122 is recommended		
Total Hours		18

^   See all AAS general education electives (p. 236)

Third Semester

ANI 255	Advanced Animation and Effects*	3
ANI 270	Visual Effects and Compositing*	3
ANI 130	Motion Graphics and Effects*	3
ANI 235	Character Modeling and Rigging*	3
BUS 121	Introduction to Business	3
Total Hours		15

Fourth Semester

ANI 260	Animation Capstone*	3
ANI 210	Digital Sculpting*	3-4
or CIS 142	Beginning Programming using Python	
ANI 275	Animation Career Preparation*	3
Science and/or Math Elective^ ^		3
Social Science and/or Economics Elective ^		3
Total Hours		15-16

^   See all AAS general education electives (p. 236)

Total Program Hours: 64-65

Automation Engineer Technology

Automation Engineer Technology, AAS

The Automation Engineer Technology program prepares individuals to develop, install and maintain automated systems used in an industrial setting. Topics of study include electrical systems, instrumentation and process control, programmable logic controllers (PLCs), fluid power systems, industrial robotics and preventative maintenance. At the end of the program, students will sit for the International Society of Automation (ISA) Control Systems Technician (CST) Associate examination.

(Major Code 2050; State CIP Code 15.0406)

Associate of Applied Science Degree

Fall Semester

Full Semester Courses

ENGL 121	Composition I*	3
First Eight Week Session		
ELTE 110	AC/DC Circuits*	4
ELTE 115	Print Reading*	2
INDT 155	Workplace Skills	1
Second Eight Week Session		
AET 110	Industrial Maintenance*	3
ELTE 122	National Electrical Code I*	4
Total Hours		17

Spring Semester

Full Semester Courses

Technical Electives		3
NOTE: Technical electives are any courses with the AUTO, CET, DRAF, ELEC, ELTE, HVAC, INDT, MFAB prefix.		
Social Science and/or Economics Elective^		3
First Eight Week Session		
ELTE 200	Commercial Wiring*	4
INDT 125	Industrial Safety/OSHA 30	3
Second Eight Week Session		
AET 120	Industrial Fluid Power*	3
Total Hours		16

^   See all AAS general education electives (p. 236)

Fall Semester

AET 140	Actuator and Sensor Systems*	3
AET 160	Programmable Logic Controllers I*	3
ELTE 225	Industrial Wiring I*	3
MATH 130	Technical Mathematics I* (or higher)	3
HPER 200	First Aid and CPR	2
Humanities/Art Elective^		3
Total Hours		17

^   See all AAS general education electives (p. 236)

Spring Semester

AET 240	Industrial Robotics*	3
AET 260	Programmable Logic Controllers II*	3

ELTE 175	Low Voltage Wiring*	3
ELTE 250	Industrial Wiring II*	3
MATH 131	Technical Mathematics II* (or higher)	3
Total Hours		15

Total Program Hours: 65

Automotive Technology

Automotive Technology, AAS

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 accredited by the National Automotive Technicians Education Foundation (NATEF), 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 in their field as an automotive technician.

(Major Code 2420; State CIP Code 47.0604)

- Automotive (http://www.jccc.edu/academics/transportation/automotive)

Associate of Applied Science Degree

First Semester

AUTO 125	Introduction to Automotive Shop Practices	3
AUTO 129	Brakes I*	3
AUTO 131	Brakes II*	1
AUTO 156	Electrical I*	3
AUTO 165	Automotive Engine Repair*	4
ENGL 121	Composition I*	3
Total Hours		17

Second Semester

INDT 125	Industrial Safety/OSHA 30	3
AUTO 166	Electrical II*	2
AUTO 161	Engine Performance I*	3
AUTO 150	Steering and Suspension I*	3
AUTO 151	Alignment Practicum*	1
INDT 155	Workplace Skills	1
Humanities Elective ^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

Third Semester

AUTO 208	Electrical III*	3
AUTO 205	Engine Performance II*	3
AUTO 209	Manual Drive Train and Axles*	4
ENGL 123	Technical Writing I*	3
MATH 120	Business Mathematics* (or higher)	3
Total Hours		16

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

Fourth Semester

Technical/Related Electives (see below)		3
AUTO 250	Automatic Transmissions and Transaxles*	4
AUTO 215	Engine Performance III*	3
AUTO 221	Heating and Air Conditioning*	4
AUTO 201	ASE Certification Review*	1

Social Science and/or Economics Elective ^		3
Total Hours		18

^ See all AAS general education electives (p. 236)

Technical/Related Electives

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 130	Diesel Fundamentals*	2
AUTO 210	Advanced Engine Repair*	3
AUTO 235	Hybrid Alternative Fuels Vehicles Repair Maintenance*	3
AUTO 271	Automotive Technology Internship*	3
AUTO 291	Independent Study*	1-7
ENTR 142	Fast Trac Business Plan	3

Total Program Hours: 67

Automotive Technology Certificate

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.

This certificate is specifically designed for students learning to become technicians who perform maintenance and light repair services in the automotive industry. These technicians perform about 70% of the work being done in repair shops across the nation. Classes included will increase an individual's technical knowledge of bumper-to-bumper maintenance and light repairs in the critical areas of engine systems, automatic transmission/transaxle, manual drive train and axles, suspension & steering, brakes, electrical, and heating & air conditioning.

(Major Code 6790; State CIP Code 47.0604)

Automotive Technology (http://www.jccc.edu/academics/transportation/automotive/tab-credit.html)

First Semester

AUTO 125	Introduction to Automotive Shop Practices	3
AUTO 129	Brakes I*	3
AUTO 131	Brakes II*	1
AUTO 156	Electrical I*	3
INDT 125	Industrial Safety/OSHA 30	3
Total Hours		13

Second Semester

AUTO 150	Steering and Suspension I*	3
AUTO 151	Alignment Practicum*	1
AUTO 161	Engine Performance I*	3
AUTO 165	Automotive Engine Repair*	4
AUTO 166	Electrical II*	2
Total Hours		13

Total Program Hours: 26

Biotechnology

Biotechnology Certificate

Greater Kansas City and specifically Johnson County have numerous biological-, pharmaceutical- and chemical-related formulating, manufacturing, research and testing companies. Many of these facilities employ scientific technicians to support the endeavors of their professional scientists and engineers.

JCCC's science technology program is designed to develop scientific support personnel for the metropolitan area.

This program offers specific knowledge and training designed to provide you with entry-level skills for employment as a technician. It also provides the breadth of background sufficient to encourage change and flexibility.

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

(Major Code 6150; State CIP Code 41.0101)

- Gainful Employment - Biotechnology (http://www.jccc.edu/academics/health/biotechnology/gainful-employment-biotech/Gedt.html) (link opens in a new window)
- Biotechnology (http://www.jccc.edu/academics/health/biotechnology)

First Semester

CHEM 122	Principles of Chemistry*	5
Total Hours		5

Second Semester

BIOL 135	Principles of Cell and Molecular Biology	4
BIOT 160	Introduction to Biotechnology*	2
MATH 130	Technical Mathematics I*	3
PHYS 133	Applied Physics*	5
Total Hours		14

Third Semester

BIOT 165	Laboratory Safety*	1
BIOT 230	Microbiology for Biotechnology*	5
BIOT 260	Biotechnology Methods*	5
CHEM 140	Principles of Organic Biological Chemistry*	5
Total Hours		16

Fourth Semester (optional)

BIOT 265	Biotechnology Internship*	4
Total Hours		4

Total Program Hours: 35-39

Biotechnology, AAS

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 64 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.

(Major Code 2110; State CIP Code 41.0101)

- Biotechnology (http://www.jccc.edu/academics/health/biotechnology)

Associate of Applied Science Degree

First Semester

ENGL 121	Composition I*	3
MATH 130	Technical Mathematics I* (or higher)	3
BIOL 135	Principles of Cell and Molecular Biology	4
CHEM 122	Principles of Chemistry*	5
Total Hours		15

Second Semester

BIOT 160	Introduction to Biotechnology*	2
BIOT 165	Laboratory Safety*	1
BIOL 144	Human Anatomy and Physiology*	5
PHYS 133	Applied Physics*	5
ENGL 123	Technical Writing I*	3
Total Hours		16

Third Semester

BIOT 230	Microbiology for Biotechnology*	5
BIOL 145	Human Anatomy and Physiology Dissection*	1
BIOL 205	General Genetics*	4
CHEM 140	Principles of Organic Biological Chemistry*	5
Social Science/Economics Elective ^		3
Total Hours		18

^   See all AAS general education electives (p. 236)

Fourth Semester

BIOT 260	Biotechnology Methods*	5
CIS 124	Introduction to Computer Concepts and Applications	3
BIOT 265	Biotechnology Internship*	4
Humanities Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Total Program Hours: 64

Biotechnology, AS

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 63-65-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.

Important: Students graduating with an associate of science 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. A list of **approved cultural diversity courses** can be found in the list of AS general education electives (p. 249).

(Major Code 2130; State CIP Code 41.0101)

- Biotechnology (http://www.jccc.edu/academics/health/biotechnology)

Associate of Science Degree

First Semester

MATH 181	Statistics*	3
BIOL 135	Principles of Cell and Molecular Biology	4
CHEM 124	General Chemistry I Lecture*	4
CHEM 125	General Chemistry I Lab*	1
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.		
ENGL 121	Composition I*	3
Total Hours		15

Second Semester

BIOT 160	Introduction to Biotechnology*	2
BIOT 165	Laboratory Safety*	1
CHEM 131	General Chemistry II Lecture*	4
CHEM 132	General Chemistry II Lab*	1
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
Humanities Elective ^		3
Social Science/Economics Elective ^		3
Total Hours		17

^   See all AS general education electives (p. 249)

Third Semester

BIOT 230	Microbiology for Biotechnology*	5
SPD 121	Public Speaking	3
BIOL 205	General Genetics*	4-5
or BIOL 150	Biology of Organisms*	
Humanities Elective ^		3
Total Hours		15-16

^   See all AS general education electives (p. 249)

Fourth Semester

BIOT 260	Biotechnology Methods*	5
PHYS 130	College Physics I*	5
BIOL 124	Oceanus: Essentials of Oceanography	3-4

or BIOL 134	Principles of Sustainability	
or BIOL 155	Bioethics*	
or BIOT 265	Biotechnology Internship*	
Social Science/Economic Elective		3
Total Hours		16-17

^   See all AS general education electives (p. 249)

Total Program Hours: 63-65

Business Administration

Business Administration, AAS

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 (http://www.jccc.edu/academics/business/business-administration)

Associate of Applied Science Degree

First Semester

ENGL 121	Composition I*	3
MATH 120	Business Mathematics* (or higher)	3
BUS 121	Introduction to Business	3
BUS 225	Human Relations	3
CIS/CS/CPCA/CDTP Electives (not including CPCA 105 or CPCA 106)		4
Note: CPCA 121 is recommended		
Total Hours		16

Second Semester

ACCT 121	Accounting I	3
BUS 141	Principles of Management	3
or BUS 145	Small Business Management	
BUS 150	Business Communications*	3
ECON 230	Principles of Macroeconomics	3
Humanities Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Third Semester

Business Electives		3
Note: Business electives are any courses with the ACCT, BUS, ECON, ENTR or MKT prefix.		
ACCT 122	Accounting II*	3
PHIL 138	Business Ethics	1
ECON 231	Principles of Microeconomics	3
MKT 230	Marketing	3
BUS 261	Business Law I*	3
Total Hours		16

Fourth Semester

ACCT 222	Managerial Accounting*	3
BUS 123	Personal Finance	3
or BUS 215	Savings and Investments	
BUS 263	Business Law II*	3

BUS 243	Human Resource Management	3
or BUS 235	Introduction to International Business	
BIOL 130	Environmental Science	3
Elective		1
Note: BIOL 131 or BUS 270 or BUS 292 recommended		
Total Hours		16

Total Program Hours: 63

Supervision Management Certificate

The supervision management certificate is a 28-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 (http://www.jccc.edu/academics/business/business-administration)
- Gainful Employment Data (http://www.jccc.edu/academics/business/business-administration/gainful-employment/Gedt.html)

First Semester

ENGL 121	Composition I*	3
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	
Total Hours		15

Second Semester

MKT 230	Marketing	3
BUS 150	Business Communications*	3
MKT 202	Consumer Behavior	3
MKT 234	Services Marketing*	3
MKT 284	Marketing Management Internship I	1
Total Hours		13

Total Program Hours: 28

Business Office Technology

Administrative Assistant with Legal Emphasis, AAS

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 (http://www.jccc.edu/academics/business/business-office-technology)

Associate of Applied Science Degree

Prerequisite for Required Courses

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

BOT 105	Keyboarding and Formatting I	3

First Semester

BOT 103	Business English	3
BOT 106	Intro to Business Computer Applications*	3
BOT 115	Electronic Calculators	1
BOT 130	Office Systems Concepts	3
LAW 121	Introduction to Law	3
ENGL 121	Composition I*	3
Total Hours		16

Second Semester

BOT 155	Word Processing Application I*	2
BOT 110	Skillbuilding I*	1
BOT 150	Records Management*	3
MATH 120	Business Mathematics*	3
BUS 150	Business Communications*	3
ACCT 111	Small Business Accounting	3
or ACCT 121	Accounting I	
BOT 180	Business Spreadsheet Applications*	1
Total Hours		16

Third Semester

BOT Electives (see below)		3
LAW 201	Advanced Legal Technology*	3
BOT 160	Legal Transcription*	3
BUS 225	Human Relations	3
BOT 255	Word Processing Applications II*	2
BOT 125	Document Formatting*	1
Total Hours		15

Fourth Semester

Electives		3
ECON 132	Survey of Economics	3
or ECON 230	Principles of Macroeconomics	
BOT 265	Computerized Office Applications*	3

BOT 275	Office Internship I*	1
BUS 140	Principles of Supervision	3
or BUS 141	Principles of Management	
Humanities Electives ^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

BOT Electives

BOT 118	Skillbuilding II*	1
BOT 180	Business Spreadsheet Applications*	1
BOT 185	Business Database Applications*	1
BOT 205	Professional Image Development	1
BOT 280	Office Internship II*	1

Total Program Hours: 63

Administrative Assistant with Medical Emphasis, AAS

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

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

BOT 105	Keyboarding and Formatting I	3

First Semester

BOT 103	Business English	3
BOT 106	Intro to Business Computer Applications*	3
BOT 130	Office Systems Concepts	3
HC 130	Medical Terminology for Healthcare Professions	3
ENGL 121	Composition I*	3
Total Hours		15

Second Semester

BOT 155	Word Processing Application I*	2
BOT 141	Electronic Health Records*	3
BOT 150	Records Management*	3
BOT 115	Electronic Calculators	1
MATH 120	Business Mathematics*	3
BUS 225	Human Relations	3
BOT 180	Business Spreadsheet Applications*	1
or BOT 185	Business Database Applications*	
Total Hours		16

Third Semester

Humanities Electives ^		3

BOT 122	Medical Keyboarding*	1
BOT 142	Legal and Ethical Issues in Healthcare	3
BOT 125	Document Formatting*	1
ACCT 111	Small Business Accounting	3
or ACCT 121	Accounting I	
BOT 255	Word Processing Applications II*	2
BUS 150	Business Communications*	3
Total Hours		16

^   See all AAS general education electives (p. 236)

Fourth Semester

BOT Electives (see below)		2
ECON 132	Survey of Economics	3
or ECON 230	Principles of Macroeconomics	
BOT 170	Medical Coding and Billing*	3
BOT 205	Professional Image Development	1
BOT 265	Computerized Office Applications*	3
BOT 275	Office Internship I*	1
BUS 140	Principles of Supervision	3
or BUS 141	Principles of Management	
Total Hours		16

BOT Electives

BOT 110	Skillbuilding I*	1
BOT 118	Skillbuilding II*	1
BOT 180	Business Spreadsheet Applications*	1
BOT 185	Business Database Applications*	1
BOT 280	Office Internship II*	1

Total program hours: 63

Administrative Assistant, AAS

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 (http://www.jccc.edu/academics/business/business-office-technology)

Associate of Applied Science Degree

Prerequisite for Required Courses

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

BOT 105	Keyboarding and Formatting I	3

First Semester

BOT 103	Business English	3
BOT 106	Intro to Business Computer Applications*	3
BOT 110	Skillbuilding I*	1
BOT 130	Office Systems Concepts	3
MATH 120	Business Mathematics*	3

ENGL 121	Composition I*	3
Total Hours		16

Second Semester

BOT 155	Word Processing Application I*	2
BUS 225	Human Relations	3
ACCT 121	Accounting I	3
BUS 121	Introduction to Business	3
BOT 150	Records Management*	3
BOT 180	Business Spreadsheet Applications*	1
or BOT 185	Business Database Applications*	
Total Hours		15

Third Semester

LAW 121	Introduction to Law	3
BOT 125	Document Formatting*	1
BUS 140	Principles of Supervision	3
or BUS 141	Principles of Management	
BOT 255	Word Processing Applications II*	2
BUS 150	Business Communications*	3
Humanities Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Fourth Semester

BOT Electives (see below)		4
ECON 132	Survey of Economics	3
or ECON 230	Principles of Macroeconomics	
BOT 275	Office Internship I*	1
BUS 243	Human Resource Management	3
BOT 265	Computerized Office Applications*	3
BOT 260	Desktop Publishing for the Office*	3
Total Hours		17

BOT Electives

BOT 115	Electronic Calculators	1
BOT 118	Skillbuilding II*	1
BOT 180	Business Spreadsheet Applications*	1
BOT 185	Business Database Applications*	1
BOT 205	Professional Image Development	1
BOT 280	Office Internship II*	1

Total program hours: 63

Administrative Support Specialist Certificate

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

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 Data (http://www.jccc.edu/academics/business/business-office-technology/gainful-employment-admin-support/Gedt.html)
- Business Office Technology

First Semester

BOT 103	Business English	3
BOT 105	Keyboarding and Formatting I	3
BOT 106	Intro to Business Computer Applications*	3
BOT 130	Office Systems Concepts	3
Total Hours		12

Second Semester

BOT 110	Skillbuilding I*	1
BOT 115	Electronic Calculators	1
BOT 150	Records Management*	3
BOT 155	Word Processing Application I*	2
BOT 125	Document Formatting*	1
BOT 180	Business Spreadsheet Applications*	1
or BOT 185	Business Database Applications*	
BUS 225	Human Relations	3
Total Hours		12

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

Third Semester

BOT 255	Word Processing Applications II*	2
BOT 260	Desktop Publishing for the Office*	3
Total Hours		5

Fourth Semester

BOT 265	Computerized Office Applications*	3
BOT 275	Office Internship I*	1
Total Hours		4

Total Program Hours: 33

Legal Administrative Assistant Certificate

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
- Gainful Employment Data

First Semester

BOT 103	Business English	3
BOT 105	Keyboarding and Formatting I	3
BOT 106	Intro to Business Computer Applications*	3

BOT 130	Office Systems Concepts	3
Total Hours		12

Second Semester

BOT 110	Skillbuilding I*	1
BOT 150	Records Management*	3
BOT 155	Word Processing Application I*	2
LAW 121	Introduction to Law	3
Total Hours		9

Third Semester

BOT 125	Document Formatting*	1
BOT 160	Legal Transcription*	3
BOT 255	Word Processing Applications II*	2
LAW 201	Advanced Legal Technology*	3
Total Hours		9

Fourth Semester

BOT 265	Computerized Office Applications*	3
BOT 275	Office Internship I*	1
Total Hours		4

Total Program Hours: 34

Medical Office Assistant Certificate

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

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

BOT 103	Business English	3
BOT 105	Keyboarding and Formatting I	3
BOT 106	Intro to Business Computer Applications*	3
HC 130	Medical Terminology for Healthcare Professions	3
Total Hours		12

Second Semester

BOT 110	Skillbuilding I*	1
BOT 155	Word Processing Application I*	2
BOT 122	Medical Keyboarding*	1
BOT 125	Document Formatting*	1
BOT 130	Office Systems Concepts	3
BOT 141	Electronic Health Records*	3
BOT 170	Medical Coding and Billing*	3
Total Hours		14

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

Total Program Hours: 26

Office Careers Certificate

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

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 - Office Careers
- Business Office Technology

First Semester

BOT 103	Business English	3
BOT 105	Keyboarding and Formatting I	3
BOT 106	Intro to Business Computer Applications*	3
BOT 130	Office Systems Concepts	3
Total Hours		12

Second Semester

BOT 110	Skillbuilding I*	1
BOT 115	Electronic Calculators	1
BOT 155	Word Processing Application I*	2
BOT 180	Business Spreadsheet Applications*	1
or BOT 185	Business Database Applications*	
BOT 125	Document Formatting*	1
Total 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

Computer Information Systems

Associate of Science with Emphasis in Information Systems Technology

The national and regional job outlook and earnings for careers in information technology continue to be strong. Employees in this sector may possess a diverse or concentrated background in areas such as software and hardware development, mobile computing, data storage and analysis, information security, system administration and integration, computer networking, mathematics and science.

Students completing the Associate of Science (AS) emphasis in Information Systems Technology will be prepared with a diverse set of skills that include the fundamentals of software development. They can then transfer credits seamlessly to the University of Kansas, Edwards campus, to complete a Bachelor of Science in Information Technology in two additional years. Completion of the AS degree may help students obtain internships or entry-level jobs as they complete their bachelor's degree.

Important: Students graduating with an associate of science 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. A list of **approved cultural diversity courses** can be found in the list of AS general education electives (p. 249).

- Programming (http://www.jccc.edu/academics/computers/programming)

(Major Code 2940; State CIP Code 24.0101)

Associate of Science

First Semester

CS 134	Programming Fundamentals	4
ENGL 121	Composition I*	3
MATH 171	College Algebra*	3
PSYC 130	Introduction to Psychology	3
SPD 121	Public Speaking	3
Total Hours		16

Second Semester

CS 200	Concepts of Programming Algorithms Using C++*	4
CIS 204	UNIX Scripting and Utilities*	3
BIOL 135	Principles of Cell and Molecular Biology	4-5
or CHEM 124	General Chemistry I Lecture*	
& CHEM 125	and General Chemistry I Lab*	
NOTE: If a science course of less than five credit hours is taken, a one hour elective is required.		
ENGL 122	Composition II*	3
Total Hours		14-15

^   See all AS general education electives (p. 249)

Third Semester

CS 235	Object-Oriented Programming Using C++*	4
CS 210	Discrete Structures I*	3
CIS 260	Database Management*	4
ECON 132	Survey of Economics	3
Humanities Elective ^		3
Note: Ethics is recommended as one of the two humanities electives. Humanities electives chosen must transfer to KU, and one of the humanities electives must satisfy the JCCC cultural diversity requirement.		
Total Hours		17

^   See all AS general education electives (p. 249)

Fourth Semester

Elective		1
NOTE: If a science course of less than five credit hours is taken, a one hour elective is required.		
CS 250	Basic Data Structures using C++*	4
CS 211	Discrete Structures II*	3
PHYS 130	College Physics I*	5
Humanities Elective ^		3
Note: Ethics recommended as one of the two humanities electives. Humanities electives chosen must transfer to KU, and one of the humanities electives must satisfy the JCCC cultural diversity requirement.		
Total Hours		16

^   See all AS general education electives (p. 249)

Total Program Hours: 63

Computer Information Systems, AAS

Employment opportunities for programmer analysts and related positions continue to be strong and growing. Key areas include object-oriented programming, database management, client-server applications, security and mobile development.

JCCC's associate of applied science in computer information systems focuses on skills needed for entry-level software development and related positions. The program is designed to prepare professionals with skills that are applicable to different computing systems. With its emphasis on practical experience and on currency in 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.

(Major Code 2930; State CIP Code 11.0201)

• Programming (http://www.jccc.edu/academics/computers/programming)

Associate of Applied Science Degree

First Semester

CS 134	Programming Fundamentals	4
or CIS 142	Beginning Programming using Python	
ENGL 121	Composition I*	3
MATH 171	College Algebra*	3
OR		
Any Precalculus/Calculus Course		
WEB 110	HTML and CSS	3
Social Science and/or Economics Elective		3
Note: An Economics course is recommended. Transfer students should take a social science/economics course that transfers to their chosen school.		
Total Hours		16

^   See all AAS general education electives (p. 236)

Second Semester

CIS 204	UNIX Scripting and Utilities*	3
CS 200	Concepts of Programming Algorithms Using C++*	4
or CS 201	Concepts of Programming Algorithms using C#*	
or CS 205	Concepts of Programming Algorithms using Java*	
Note: Transfer students should take the language that transfers to their chosen school. Java or C# is recommended for most career students. C++ is recommended for embedded systems and Java for mobile development.		
IT 140	Networking Fundamentals	4
SPD 120	Interpersonal Communication	3
or SPD 121	Public Speaking	
or SPD 125	Personal Communication	

or ENGL 123	Technical Writing I*	
Humanities Elective		3
Note: PHIL 124 or PHIL 143 is recommended. Transfer students should take a humanities course that transfers to their chosen school.		
Total Hours		17

^   See all AAS general education electives (p. 236)

Third Semester

Full Semester Courses:		
CIS Elective (see below)		3
CIS 242	Introduction to System Design and Analysis*	3
CIS 260	Database Management*	4
CS 235	Object-Oriented Programming Using C++*	4
or CS 236	Object-Oriented Programming Using C#*	
or CIS 240	Advanced Topics in Java*	
First or Second Five Week Session:		
WEB 156	JavaScript I*	1
Total Hours		15

Fourth Semester

CIS Elective (see below)		3
CIS 264	Application Development and Programming*	4
CIS 275	Web-Enabled Database Programming*	4
CS 250	Basic Data Structures using C++*	4
or CS 255	Basic Data Structures Using Java*	
Total Hours		15

CIS Electives

ACCT 121	Accounting I	3
CIS 162	Database Programming*	4
CIS 201	Introduction to Information Systems*	3
CIS 208	Mobile Application Development*	4
CIS 240	Advanced Topics in Java*	4
CIS 270	Information Systems Internship*	3
CIS 291	Independent Study*	1-7
CIS 292	Special Topics:*	1-4
CS 210	Discrete Structures I*	3
CS 211	Discrete Structures II*	3
CS 235	Object-Oriented Programming Using C++*	4
CS 236	Object-Oriented Programming Using C#*	4
CS 250	Basic Data Structures using C++*	4
CS 255	Basic Data Structures Using Java*	4
DS 210	Introduction to Data Science	3
DS 220	Data Visualization	3
DS 230	SQL for Data Analysis	3
DS 240	Introduction to Statistical Programming	3
DS 250	Data Analysis	3
DS 260	Data Mining	3
DS 270	Introduction to Machine Learning	3
DS 280	Big Data Architecture	3
WEB 126	Technical Interface Skills*	3
WEB 128	Server Scripting: PHP with MySQL*	2

| WEB 166 | JavaScript II* | 1 |

Total Program Hours: 63

Computer Information Systems-Software Developer Certificate

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

Suggested/Sample Course Sequence

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

(Major Code 5180; State CIP Code 11.0201)

- Software Development (http://www.jccc.edu/academics/computers/software-development)
- Gainful Employment Data (http://www.jccc.edu/academics/computers/software-development/gainful-employment/Gedt.html)

First Semester

CS 134	Programming Fundamentals	4
or CIS 142	Beginning Programming using Python	
WEB 110	HTML and CSS	3
Total Hours		7

Second Semester

CIS 162	Database Programming*	4
CIS 204	UNIX Scripting and Utilities*	3
CS 200	Concepts of Programming Algorithms Using C++*	4
or CS 201	Concepts of Programming Algorithms using C#*	
or CS 205	Concepts of Programming Algorithms using Java*	
Note: Transfer students should take the language that transfers to their chosen school. Java or C# is recommended for most career students. C++ is recommended for embedded systems and Java for mobile development.		
Total Hours		11

Third Semester

CIS 242	Introduction to System Design and Analysis*	3
CIS 260	Database Management*	4
CIS 275	Web-Enabled Database Programming*	4
CS 235	Object-Oriented Programming Using C++*	4
or CS 236	Object-Oriented Programming Using C#*	
or CIS 240	Advanced Topics in Java*	
Total Hours		15

Total Program Hours: 33

Computer Support Specialist A+ Certificate

The Computer Support Specialist A+ 16 to 17-credit hour certificate is an industry-respected starting point for individuals to pursue a career in Information Systems. The certificate provides valuable technical and communication skills required across the Information Systems industry. Students develop essential skills in hardware, software, networking, written communication, verbal communication and problem solving. Upon completion of the certificate, students are prepared to take the CompTIA A+ certification exam, enter the workforce in an entry-level computer support position or continue their studies.

(Major Code 6610; State CIP Code 11.1006)

Required Courses

CPCA 105	Introduction to Personal Computers: Windows	0-1
CPCA 120	Computer User Support Skills*	3
CPCA 128	PC Applications: MS Office	3
or CPCA 108	Word Processing I: MS Word*	
& CPCA 110	and Spreadsheets I: MS Excel*	
& CPCA 123	and E-Presentation: MS PowerPoint*	
ELEC 186	CompTIA A+ Essentials	3
IT 120	CompTIA A+ Practical Applications	3
IT 140	Networking Fundamentals	4
Total Hours		16-17

Total Program Hours: 16-17

Computer Support Specialist Networking+/Security+ Certificate

The Computer Support Specialist Network+/Security+ 33 to 34-credit hour certificate provides additional technical skills and industry-recognized credentials for students to qualify for a wider range of high-demand positions across the broad field of information systems.   Upon completion of the certificate, students are prepared to take both the CompTIA Network+ and Security+ exams. Individuals may choose to enter the workforce with strong computer, network and security support skills, or continue another year of studies to complete their Computer Support Specialist Associate of Applied Science degree.

(Major Code 6620; State CIP Code 11.1006)

First Semester

CPCA 105	Introduction to Personal Computers: Windows	0-1
CPCA 120	Computer User Support Skills*	3
CPCA 128	PC Applications: MS Office	3
or CPCA 108	Word Processing I: MS Word*	
& CPCA 110	and Spreadsheets I: MS Excel*	
& CPCA 123	and E-Presentation: MS PowerPoint*	
ELEC 186	CompTIA A+ Essentials	3
IT 120	CompTIA A+ Practical Applications	3
IT 140	Networking Fundamentals	4
Total Hours		16-17

Note: Students are eligible for the Computer Support Specialist A+ Certificate upon completion of the first semester and would be eligible to take the Computing Technology Industry Association (CompTIA) A+ Certification Exam.

Second Semester

CPCA 106	Introduction to Personal Computers: Macintosh	1
CPCA 109	Google Apps*	1
CPCA 118	Groupware: Outlook*	1
CPCA 138	Windows for Microcomputers*	1
ELEC 250	Microcomputer Maintenance*	3
IT 145	Routing and Switching Essentials*	3
WEB 112	Professional Skills for the Digital Developer	3
Total Hours		13

Third Semester

IT 201	Network Security Fundamentals*	4
Total Hours		4

Note: Students are eligible for the Computer Support Specialist Networking+/Security+ Certificate upon completion of the first and second semesters and IT 201 and would be eligible to take the Computing Technology Industry Association (CompTIA) Network+ Exam and Security+ Exam.

Total Program Hours: 33-34

Computer Support Specialist, AAS

The Computer Support Specialist 63 credit hour Associate of Applied Science degree prepares individuals to provide technical assistance, support, and advice to computer users to troubleshoot software, hardware and networking problems. This two-year degree includes instruction in computer concepts, information systems, networking, security, operating systems, the Internet, software applications, help desk concepts, effective written and verbal communication skills, team management, project management, customer service and problem solving skills. Courses are completed in state-of-the-art computer labs at Johnson County Community College. Students are prepared to enter the workforce as a Computer User Support Specialist, Help Desk Technician, Technical Support Specialist or IT Support Representative.

(Major Code 2060; State CIP Code 11.1006)

- Computer Support Specialist

Associate of Applied Science Degree

First Semester

CPCA 105	Introduction to Personal Computers: Windows	0-1
CPCA 120	Computer User Support Skills*	3
CPCA 128	PC Applications: MS Office	3
or CPCA 108	Word Processing I: MS Word*	
& CPCA 110	and Spreadsheets I: MS Excel*	
& CPCA 123	and E-Presentation: MS PowerPoint*	
ELEC 186	CompTIA A+ Essentials	3
IT 120	CompTIA A+ Practical Applications	3
IT 140	Networking Fundamentals	4
Total Hours		16-17

Note: Students are eligible for the Computer Support Specialist A+ Certificate upon completion of the first semester and would be eligible to take the Computing Technology Industry Association (CompTIA) A+ Certification Exam.

Second Semester

CPCA 106	Introduction to Personal Computers: Macintosh	1
CPCA 109	Google Apps*	1
CPCA 118	Groupware: Outlook*	1
CPCA 138	Windows for Microcomputers*	1
ELEC 250	Microcomputer Maintenance*	3
IT 145	Routing and Switching Essentials*	3
WEB 112	Professional Skills for the Digital Developer	3
Total Hours		13

Third Semester

Program Electives		2 - 3
NOTE: Program electives are any courses with CIS, CPCA, CS, HCIS, IT or WEB prefix.		
(Note: If completed CPCA 105, choose 2 credit hours of electives. If CPCA 105 waiver test passed, choose 3 credit hours of electives.)		
CPCA 114	Databases I: MS Access*	1
CPCA 141	Internet I*	1
ENGL 121	Composition I*	3
IT 201	Network Security Fundamentals*	4
Communications Elective^		3
Humanities Elective^		3
Total Hours		17-18

^   See all AAS general education electives (p. 236)

Note: Students are eligible for the Computer Support Specialist Networking+/Security+ Certificate upon completion of the first and second semesters and IT 201 and would be eligible to take the Computing Technology Industry Association (CompTIA) Network+ Exam and Security + Exam.

Fourth Semester

Program Electives		9
NOTE: Program electives are any courses with CIS, CPCA, CS, HCIS, IT or WEB prefix.		
CPCA 121	Introduction to Project Management*	1
Social Science and/or Economics Elective^		3
Science and/or Math Elective^		3
Note: MATH 120 is recommended		
Total Hours		16

^   See all AAS general education electives (p. 236)

Total Program Hours: 63

Data Analytics Certificate

Individuals with or without a college degree whose goal is to acquire or improve their data analytic skills will accomplish their goals in this program. Emphasis is on acquiring results-oriented career business and industry skills. The program is intended for those seeking entry-level positions as well as those currently employed who desire to enhance their job skills. It provides employers and current prospective employees with tangible evidence of data analytic competencies.

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

(Major Code 5460; State CIP Code 11.0802)

First Semester

MATH 181	Statistics*	3
DS 210	Introduction to Data Science	3
DS 220	Data Visualization	3
DS 230	SQL for Data Analysis	3
DS 240	Introduction to Statistical Programming	3
Total Hours		15

Second Semester

DS 250	Data Analysis	3
DS 260	Data Mining	3
DS 270	Introduction to Machine Learning	3
DS 280	Big Data Architecture	3
Total Hours		12

Total Program Hours: 27

Desktop Publishing Applications Specialist Certificate

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

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

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

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

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)

- Personal Computer Applications (http://www.jccc.edu/academics/computers/computer-applications)

Prerequisites for Required Courses

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	

First Five Week Session

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

CPCA 134	Managing Your Macintosh*	1
or CPCA 138	Windows for Microcomputers*	
CDTP 155	Desktop Photo Manipulation II: Photoshop*	1
CDTP 160	Desktop Publishing II: InDesign*	1
CDTP 165	Desktop Illustration II: Illustrator*	1

Third Five Week Session

CDTP 175	Desktop Photo Manipulation III: Photoshop*	1
CDTP 168	Desktop Publishing III: InDesign*	1
CDTP 185	Desktop Illustration III: Illustrator*	1

Select four of the following eight courses

CPCA 108	Word Processing I: MS Word*	1
CPCA 123	E-Presentation: MS PowerPoint*	1
CPCA 125	Word Processing II: MS Word*	1
WEB 154	Web Pages: Dreamweaver I*	1
WEB 158	Adobe Flash I*	1
WEB 164	Web Pages: Dreamweaver II*	1
WEB 168	Adobe Flash II*	1
WEB 178	Adobe Flash III*	1

Total Program Hours: 14

Personal Computer Applications Specialist Certificate

Individuals with or without a college degree whose goal is to acquire or improve their personal computer application skills will accomplish their goals in this program. Emphasis is on acquiring results-oriented career business and industry skills. The program is intended for those seeking entry-level positions as well as those currently employed who desire to enhance their job skills 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)

- Personal Computer Applications (http://www.jccc.edu/academics/computers/computer-applications)

Prerequisites for Required Courses

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	

Option 1

Suggested/Sample Course Sequence Completion - Two Semesters

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

Option 1: First Semester

First Five Week Session

CPCA 123	E-Presentation: MS PowerPoint*	1
CPCA 138	Windows for Microcomputers*	1
Second Five Week Session		
CPCA 108	Word Processing I: MS Word*	1
CPCA 110	Spreadsheets I: MS Excel*	1
Third Five Week Session		
CPCA 111	Spreadsheets II: MS Excel*	1
CPCA 125	Word Processing II: MS Word*	1
Total Hours		6

Option 1: Second Semester

First Five Week Session

CPCA 114	Databases I: MS Access*	1
CPCA 141	Internet I*	1
Second Five Week Session		
CPCA 115	Databases II: MS Access*	2
Third Five Week Session		
Continuation of CPCA 115-Database II: MS Acess		
CPCA Elective (see list below)		1
Total Hours		5

CPCA Electives

CPCA 118	Groupware: Outlook*	1
CPCA 121	Introduction to Project Management*	1
CPCA 151	Internet II*	1
CPCA 161	Introduction to Web Pages using HTML*	1

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

Option 2

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

First Five Week Session

CPCA 108	Word Processing I: MS Word*	1

CPCA 110	Spreadsheets I: MS Excel*	1
CPCA 114	Databases I: MS Access*	1
CPCA 141	Internet I*	1
Second Five Week Session		
CPCA 123	E-Presentation: MS PowerPoint*	1
CPCA 138	Windows for Microcomputers*	1
CPCA 115	Databases II: MS Access*	2
Third Five Week Session		
CPCA Elective (see list below)		1
Continuation of CPCA 115-Database II: MS Acess		
CPCA 111	Spreadsheets II: MS Excel*	1
CPCA 125	Word Processing II: MS Word*	1
Total Hours		11

CPCA Electives

CPCA 118	Groupware: Outlook*	1
CPCA 121	Introduction to Project Management*	1
CPCA 151	Internet II*	1
CPCA 161	Introduction to Web Pages using HTML*	1

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

Total Program Hours: 11

Construction Management

Construction Management Certificate

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

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)

- Construction Management (http://www.jccc.edu/academics/industrial-technology/construction-management)
- Gainful Employment Data (http://www.jccc.edu/academics/industrial-technology/construction-management/gainful-employment/Gedt.html)

First Semester

CET 105	Construction Methods	3
CET 125	Construction Specifications*	2
DRAF 129	Interpreting Architectural Drawings	2
MATH 120	Business Mathematics* (or higher)	3
BUS 140	Principles of Supervision	3
Total Hours		13

Second Semester

Management Electives (see below)		2
ACCT 111	Small Business Accounting	3
or ACCT 121	Accounting I	
CET 129	Construction Management	3
CET 227	Construction Cost Estimating*	3
INDT 150	Construction Safety/OSHA 30	3
INDT 155	Workplace Skills	1
Total Hours		15

Management Electives

BUS 141	Principles of Management	3
BUS 145	Small Business Management	3
BUS 243	Human Resource Management	3
BUS 261	Business Law I*	3
ENTR 131	Financial Management for Small Business*	2
ENTR 160	Legal Issues for Small Business	2

Total Program Hours: 28

Construction Management Technology, AAS

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 63 credit hours.

(Major Code 2310; State CIP Code 52.2001)

- Construction Management (http://www.jccc.edu/academics/industrial-technology/construction-management)

Associate of Applied Science Degree

First Semester

Program Elective (see below)		3
CET 105	Construction Methods	3
CET 125	Construction Specifications*	2
DRAF 129	Interpreting Architectural Drawings	2
ENGL 121	Composition I*	3
MATH 120	Business Mathematics* (or higher)	3
Total Hours		16

Second Semester

ACCT 111	Small Business Accounting	3
or ACCT 121	Accounting I	
CET 123	Building Codes	3
CET 129	Construction Management	3
CET 205	Advanced Construction Methods*	3
INDT 155	Workplace Skills	1
Social Science and/or Economics Elective ^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

Third Semester

CET 160	Green Building Fundamentals	3
CET 227	Construction Cost Estimating*	3
CET 229	Advanced Construction Management*	3
DRAF 143	Introduction to BIM Building Information Modeling*	2
INDT 150	Construction Safety/OSHA 30	3
Total Hours		14

Fourth Semester

Program Elective (see below)		3
BUS 140	Principles of Supervision	3
CET 140	Civil Engineering Materials*	3
CET 225	Construction Documents*	2
Communications, Science, or Math Elective ^		3
Humanities Elective ^		3
Total Hours		17

^   See all AAS general education electives (p. 236)

Program Electives

BUS 120	Management Attitudes and Motivation	3
BUS 141	Principles of Management	3
BUS 145	Small Business Management	3
BUS 150	Business Communications*	3
BUS 243	Human Resource Management	3
BUS 261	Business Law I*	3
CET 271	Construction Management Internship I*	3
CET 272	Construction Management Internship II*	3

CPCA 105	Introduction to Personal Computers: Windows	1
CPCA 108	Word Processing I: MS Word*	1
CPCA 110	Spreadsheets I: MS Excel*	1
CPCA 121	Introduction to Project Management*	1
CPCA 128	PC Applications: MS Office	3
DRAF 130	Introduction to CAD Concepts - AutoCAD*	3
DRAF 132	Exploring AutoCAD	3
DRAF 230	Intermediate CAD: AutoCAD*	3
DRAF 243	Advanced BIM: Revit*	2
DRAF 244	Civil 3D*	2
DRAF 252	Structural Design and Drafting*	3
DRAF 264	CAD:Interior Design*	3
DRAF 271	Drafting Internship I*	3
DRAF 272	Drafting Internship II*	3
ENGR 131	Engineering Graphics I:AutoCAD*	4
ELTE 202	Electrical Estimating*	3
ENTR 120	Introduction to Entrepreneurship	2
ENTR 142	Business Plan	3
ENTR 180	Opportunity Analysis	2
SPD 120	Interpersonal Communication	3

Total Program Hours: 63

Cosmetology

Cosmetology Certificate

In the cosmetology industry, a cosmetologist is more than a hairstylist – they are creative artists who have the ability to visualize beauty through the transformation of hair, skin, makeup, and nails. Cosmetologists need manual dexterity, an understanding of chemistry, the ability of standing for lengthy periods of time, exceptional marketing skills and superior communication skills. This program provides theory and skill development in shampooing, sculpting, designing, coloring, relaxing and chemical texturizing as well as manicuring and esthetics.

Employment opportunities are available in full service salons, beauty salons, department stores, wedding venues, health care and hotel facilities. Entrepreneurship opportunities are also available for cosmetologists who choose to pursue this pathway. Additional employment opportunities include theater hair/makeup, fashion hair/makeup, cosmetic or beauty supply sales and services, platform artistry for cosmetic companies, nail artistry and color chemist.

Contact the salon at 913-469-2390, for additional information.

Requirements for Course Enrollment:

- ENGL 121 (with a grade of "C" or higher) or RDG 126 (with a grade of "C" or higher) or an appropriate reading placement test score and department approval
- All test scores must be current within the past five years.

(Major Code 3090; State CIP Code 12.0401)

- Cosmetology (http://www.jccc.edu/academics/health/cosmetology)

Professional Licensure Courses

CO 110	Cosmetology I*	12
CO 111	Cosmetology II*	7
CO 112	Cosmetology III*	10
CO 113	Cosmetology IV*	9
CO 114	Cosmetology Business*	7
Total Hours		45

Total Program Hours: 45

Cosmetology Instructor Training Certificate

This 300 contact hour course is designed to meet the educational requirements for licensure by Kansas Board of Cosmetology for instructors in the cosmetology sciences. Students will attend 56 hours of lecture and participate in 244 hours of observation, clinic supervision, and classroom teaching. Topics covered include instructor characteristics, student motivation, methods and evaluation. For enrollment information call 913-469-8500 ext. 2390. Enrollment in this course requires Kansas state licensure in Cosmetology, Esthetics or Nail Technology and a minimum of one year verified practice in trained area.

(Major Code 3740; State CIP Code 12.0401)

- Cosmetology (http://www.jccc.edu/academics/health/cosmetology)

Required Course

CO 212	Cosmetology Instructor Training*	9

Total Program Hours: 9

Cosmetology, AAS

Students desiring to seek employment in management in the salon industry will benefit from the additional education gained by achieving this degree. This degree may be earned only by a student who has completed the JCCC cosmetology certificate program. A student must have 18 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.

(Major Code 2090; State CIP Code 12.0401)

- Cosmetology

Associate of Applied Science Degree

Professional Licensure Courses

CO 110	Cosmetology I*	12
CO 111	Cosmetology II*	7
CO 112	Cosmetology III*	10
CO 113	Cosmetology IV*	9
CO 114	Cosmetology Business*	7
Total Hours		45

General Education Requirements

Electives		3
Communication Elective ^		3
Humanities Elective ^		3
Social Science and/or Economics Elective ^		3
Science and/or Math Elective ^		3
ENGL 121	Composition I*	3
Total Hours		18

^   See all AAS general education electives (p. 236)

Total Program Hours: 63

Esthetics Certificate

Theory and skill development in sanitation, skin sciences, skin treatments, including body treatments, waxing, makeup, advanced skin therapies, including microdermabrasion, 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.

Requirements for Course Enrollment:

- ENGL 121 (with a grade of "C" or higher) or RDG 126 (with a grade of "C" or higher) or an appropriate reading placement test score and department approval
- All test scores must be current within the past five years.

(Major Code 3080; State CIP Code 12.0409)

- Cosmetology (http://www.jccc.edu/academics/health/cosmetology)

Fall Semester

CO 100	Esthetics*	16
CO 101	Esthetics Clinical*	1
Total Hours		17

Spring Semester

CO 102	Intermediate Esthetics*	9
CO 103	Intermediate Esthetics Clinical*	5
Total Hours		14

Fall Semester

CO 104	Esthetics Essentials*	3

CO 105	Esthetics Essentials Clinical*	2
Total Hours		5

Spring Semester

CO 106	Advanced Esthetics*	7
CO 107	Advanced Esthetics Clinical*	3
Total Hours		10

Total Program Hours: 46

Nail Technology Certificate

The program provides theory and skill development in artistic application of nail enhancement services which includes the application of fiberglass and silk wraps, tips with overlay, sculptured nails, gels and gel polish. Pedicures, natural nail manicures, identifying the various diseases and disorders of the nails, and Kansas State Board of Cosmetology rules and regulations will also be taught. Upon completion of this program, students are prepared for the Kansas State Board of Cosmetology Manicurist licensure written and practical exams. Admission requires high school transcript or GED. Contact the Salon at 913-469-2390, for additional information.

Requirements for Course Enrollment:

- ENGL 121 (with a grade of "C" or higher) or RDG 126 (with a grade of "C" or higher) or an appropriate reading placement test score and department approval
- All test scores must be current within the past five years.

(Major Code 3100; State CIP Code 12.0401)

- Cosmetology (http://www.jccc.edu/academics/health/cosmetology)

Required Course

CO 109	Nail Technology*	16
Total Hours		16

Total Program Hours: 16

Dental Hygiene

Dental Hygiene, AAS

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. Employment of dental hygienists is expected to grow faster than average through 2018. 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 80-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.

(Major Code 223A; State CIP Code 51.0602)

- Dental Hygiene

Associate of Applied Science Degree

Before Beginning Clinical Courses

ENGL 121	Composition I*	3
PSYC 130	Introduction to Psychology	3
CHEM 122	Principles of Chemistry* (CHEM 122 must be taken prior to BIOL 230 and BIOL 231)	5
BIOL 140	Human Anatomy	4
BIOL 230 & BIOL 231	Microbiology* and Microbiology Lab*	5
Total Hours		20

Note: CHEM 122 **or BIOL 140 or** BIOL 230 **and** BIOL 231 **and either** ENGL 121 **or** PSYC 130 **must be completed by the end of the fall semester.**

Note: Transcripts from the fall semester are due January 15. The application deadline is December 1.

Fall Semester

DHYG 121	Clinical Dental Hygiene I: Pre-Clinic*	5
DHYG 125	Developmental Dentistry*	2
DHYG 135	Dental Materials*	2
DHYG 138	Head and Neck Anatomy*	2
SOC 122	Introduction to Sociology	3
Total Hours		14

Spring Semester

DHYG 140	Clinical Dental Hygiene II*	4
DHYG 142	Dental Radiography*	2
DHYG 146	Periodontics*	3
DHYG 148	Dental Health Education*	2
BIOL 225	Human Physiology*	4
Total Hours		15

Summer Semester

BIOL 235	General Nutrition*	3

Humanities Elective ^		3
Total Hours		6

^   See all AAS general education electives (p. 236)

Fall Semester

DHYG 221	Clinical Dental Hygiene III*	6
DHYG 225	General and Oral Pathology*	3
DHYG 230	Dental Therapeutics*	3
DHYG 240	Dental Public Health*	2
Total Hours		14

Spring Semester

DHYG 245	Nitrous Oxide Analgesia*	1
DHYG 250	Clinical Dental Hygiene IV*	6
SPD 120	Interpersonal Communication	3
or SPD 121	Public Speaking	
or SPD 125	Personal Communication	
Elective		1
Total Hours		11

Total Program Hours: 80

Drafting Technology

Computer-Aided Drafting and Design Technology, AAS

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 (http://www.jccc.edu/academics/arts-design/computer-aided-drafting)

Associate of Applied Science Degree

First Semester

Full Semester Course

MATH 130	Technical Mathematics I*	3
or MATH 171	College Algebra*	
First Eight Week Session		
DRAF 120	Introduction to Drafting	2
DRAF 130	Introduction to CAD Concepts - AutoCAD*	3
Second Eight Week Session		
DRAF 123	Interpreting Machine Drawings*	2
DRAF 129	Interpreting Architectural Drawings	2
DRAF 230	Intermediate CAD: AutoCAD*	3
Total Hours		15

Second Semester

Full Semester Courses

DRAF 135	Graphic Analysis*	3
DRAF 211	Engineering Design Problems*	3
ENGL 121	Composition I*	3
MATH 131	Technical Mathematics II*	3
or MATH 172	Trigonometry*	
First Eight Week Session		
DRAF 145	Introduction to Parametric Design: Inventor*	2
Second Eight Week Session		
DRAF 245	Advanced Parametric Design: Inventor*	2
Total Hours		16

Third Semester

Full Semester Courses

DRAF 222	Mechanical Design and Drafting*	3
DRAF 225	Civil Drafting*	3

ENGL 123	Technical Writing I*	3
or ENGL 122	Composition II*	
First Eight Week Session		
DRAF 143	Introduction to BIM Building Information Modeling*	2
Second Eight Week Session		
DRAF 243	Advanced BIM: Revit*	2
DRAF 244	Civil 3D*	2
Total Hours		15

Fourth Semester

Technical Electives (see below)		4
DRAF 246	MicroStation for AutoCAD users*	2
DRAF 238	Architectural Design and Drafting*	3
DRAF 252	Structural Design and Drafting*	3
Humanities Elective ^		3
Social Science and/or Economics Elective ^		3
Total Hours		18

^   See all AAS general education electives (p. 236)

Technical Electives

CET 105	Construction Methods	3
CET 160	Green Building Fundamentals	3
DRAF 140	Topics in CAD I:	2
DRAF 152	3D Modeling with SketchUp	2
DRAF 162	3D Printing and CNC Fabrication	2
DRAF 242	Topics in CAD II*	2
DRAF 271	Drafting Internship I*	3
DRAF 272	Drafting Internship II*	3
INDT 155	Workplace Skills	1

Total Program Hours: 64

Early Childhood Education

Associate of Science with Emphasis in Early Childhood Education

The Early Childhood Education associate of science 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. Credits may transfer to many Kansas universities. Excellent practical education opportunities are available to students in the program.

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 associate of science 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. A list of **approved cultural diversity courses** can be found in the list of AS general education electives (p. 249).

(Major Code 2100; State CIP Code 19.0708)

- Early Childhood Education (http://www.jccc.edu/academics/education/early-childhood)

First Semester

EDUC 130	Foundations of Early Childhood Education*	3
EDUC 131	Early Childhood Curriculum I*	3
ENGL 121	Composition I*	3
PSYC 130	Introduction to Psychology	3
SPD 121	Public Speaking	3
or SPD 120	Interpersonal Communication	
Note: SPD 121 is recommended		
Total Hours		15

Second Semester

EDUC 231	Early Childhood Curriculum II*	3
EDUC 250	Child Health, Safety and Nutrition*	3
PSYC 215	Child Development*	3
ENGL 122	Composition II*	3
Science course with Lab^		4
Note: BIOL 130 and BIOL 131 are recommended		
Total Hours		16

^   See all AS general education electives (p. 249)

Third Semester

EDUC 210	Creative Experiences for Young Children*	3
EDUC 260	Observing and Interacting with Young Children*	3
Humanities Elective^		3
Note: FL 230, ARTH 180, ARTH 184, or ARTH 188 are recommended		
ARTH 180 meets Cultural Diversity		
Science or Math Electives^		5
Note: GEOS 130 is recommended		
MATH 171	College Algebra*	3
Total Hours		17

^   See all AS general education electives (p. 249)

Fourth Semester

EDUC 220	Survey of the Exceptional Child*	3
EDUC 234	Families in Society*	3
EDUC 285	Student Teaching: Early Childhood Education*	3
Social Science/Economics Elective^		3
Note: ANTH 130 or ANTH 125 or SOC 125 are recommended		
ANTH 130 and ANTH 125 meets Cultural Diversity requirement		
Humanities Elective ^		3
Note: FL 231 or MUS 121 are recommended		
Total Hours		15

^   See all AS general education electives (p. 249)

Total Program Hours: 63

Electrical Technology

Electrical Technology, AAS

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, industrial control, security and communications. The Electrical Technology program emphasizes hands-on training integrated with a knowledge of theory and study of the National Electrical Code.

The certificate in Electrical Technology is designed to give students the basic skills to gain entry level employment in the residential and commercial electrical trade. As a requirement for completion, students will sit for their local licensure exam.

After attainment of the certificate, students can complete advanced studies towards the Electrical Technology Associate of Applied Science. This program prepares students to enter the electrical trade in electrical estimating, industrial controls and electrical design.

(Major Code 2260; State CIP Code 46.0302)

- Electrical Technology (http://www.jccc.edu/academics/industrial-technology/electrical-technology)

Associate of Applied Science Degree

Fall Semester

First Eight Week Session		
ELTE 110	AC/DC Circuits*	4
ELTE 115	Print Reading*	2
INDT 155	Workplace Skills	1
Second Eight Week Session		
ELTE 122	National Electrical Code I*	4
ELTE 125	Residential Wiring*	4
Total Hours		15

Spring Semester

First Eight Week Session		
ELTE 200	Commercial Wiring*	4
INDT 125	Industrial Safety/OSHA 30	3
Second Eight Week Session		
ELTE 150	Solar Electric Systems*	4
ELTE 222	National Electrical Code II*	4
Total Hours		15

Note: Students are eligible for the Electrical Technology Certificate upon completion of the first two semesters.

Fall Semester

ENGL 121	Composition I*	3
ELTE 202	Electrical Estimating*	3
ELTE 225	Industrial Wiring I*	3
AET 160	Programmable Logic Controllers I*	3
MATH 130	Technical Mathematics I* (or higher)	3
HPER 200	First Aid and CPR	2
Total Hours		17

Spring Semeter

Technical Electives		3
Note: Technical Electives are any courses with the ELTE, AET, HVAC, MFAB, INDT, AUTO, ELEC, DRAF or CET prefix.		
ELTE 175	Low Voltage Wiring*	3
ELTE 250	Industrial Wiring II*	3

MATH 131	Technical Mathematics II* (or higher)	3
Social Science and/or Economics Elective^		3
Humanities Elective ^		3
Total Hours		18

^   See all AAS general education electives (p. 236)

Total Program Hours: 65

Electrical Technology Certificate

The certificate in Electrical Technology is designed to give students the basic skills to gain entry level employment in the residential and commercial electrical trade. As a requirement for completion, students will sit for their local licensure exam.

(Major Code 5110; State CIP Code 46.0302)

- Electrical Technology (http://www.jccc.edu/academics/industrial-technology/electrical-technology)

Fall Semester

First Eight Week Session

ELTE 110	AC/DC Circuits*	4
ELTE 115	Print Reading*	2
INDT 155	Workplace Skills	1
Second Eight Week Session		
ELTE 122	National Electrical Code I*	4
ELTE 125	Residential Wiring*	4
Total Hours		15

Spring Semester

First Eight Week Session

ELTE 200	Commercial Wiring*	4
INDT 125	Industrial Safety/OSHA 30	3
Second Eight Week Session		
ELTE 150	Solar Electric Systems*	4
ELTE 222	National Electrical Code II*	4
Total Hours		15

Total Program Hours: 30

Electronics Technology

Electronics Technology, AAS

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, troubleshoot and maintain highly technical systems such as communications systems, computers and computer networks, industrial process control systems, and photonics 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 excellent facilities and some of 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.

(Major Code 2690; State CIP Code 47.0101)

- Electronics Technology (http://www.jccc.edu/academics/industrial-technology/electronics)

Associate of Applied Science Degree

First Semester

ELEC 120	Introduction to Electronics	3
ELEC 125	Digital Electronics I	4
ELEC 186	CompTIA A+ Essentials	3
MATH 130	Technical Mathematics I* (or higher)	3
ENGL 121	Composition I*	3
Total Hours		16

Second Semester

ELEC 134	DC Circuits*	4
ELEC 225	Digital Electronics II*	3
MATH 131	Technical Mathematics II* (or higher)	3
CS 134	Programming Fundamentals	4
Social Science/Economics Elective^		3
Total Hours		17

^   See all AAS general education electives (p. 236)

Third Semester

Technical Elective (see below)		3
ELEC 234	AC Circuits*	4
ELEC 236	Semiconductor Devices*	4
ELEC 235	Microprocessors*	4
INDT 155	Workplace Skills	1
Total Hours		16

Fourth Semester

Technical Elective (see below)		6
HPER 200	First Aid and CPR	2
ELEC 240	Electronic Communication Systems*	4
Humanities Elective^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Technical Electives

AET 140	Actuator and Sensor Systems*	3

AET 160	Programmable Logic Controllers I*	3
AET 240	Industrial Robotics*	3
AET 260	Programmable Logic Controllers II*	3
ELEC 127	Robots for Humans	4
ELEC 185	LAN Cabling and Installation	3
ELEC 212	Fundamentals of Light and Lasers*	3
ELEC 250	Microcomputer Maintenance*	3
ELEC 251	Laser Systems and Applications*	3
ELEC 252	Specialized Lasers and System Integration*	3
ELEC 271	Electronics Internship I*	1

Total Program Hours: 64

Emergency Medical Science (EMS)

Emergency Medical Science, AAS

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.

- Emergency Medical Science (http://www.jccc.edu/academics/health/emergency-medical-science)

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
Total Hours		5

Emergency Medical Technician Course

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

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

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

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

EMS 131	Emergency Medical Technician*	10
Total Hours		10

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	Emergency Medical Technician Practicum*	3
Total Hours		3

Mobile Intensive Care Technician (Paramedic) Program

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

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

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

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

(Major Code 248A; State CIP Code 51.0904)

- Emergency Medical Science (http://www.jccc.edu/academics/health/emergency-medical-science)

Associate of Applied Science Degree

Prior to beginning professional courses

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

Electives		0-2
Note: Students who choose BIOL 144 must take 2 hours of electives		
BIOL 144	Human Anatomy and Physiology*	5-8
or BIOL 140	Human Anatomy	
& BIOL 225	and Human Physiology*	
ENGL 121	Composition I*	3
Select one of the following:		3
SOC 125	Social Problems	
Social Science/Economics Elective ^		
Select one of the following:		3
PHIL 143	Ethics	
Humanities Elective ^		
Total Hours		14-19

^   See all AAS general education electives (p. 236)

First Semester

EMS 220	MICT I*	10
EMS 225	MICT II*	10
Total Hours		20

Second Semester

EMS 230	MICT III Clinicals*	12
Total Hours		12

Third Semester

EMS 271	MICT IV Field Internship*	15
Total Hours		15

Total Program Hours: 63-64

Total Professional Credit Hours: 47

Emergency Medical Technician Certificate

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

Required Course

EMS 131	Emergency Medical Technician*	10
Total Hours		10

Total Program Hours: 10

Mobile Intensive Care Technician Certificate

Prior to beginning profession courses:

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

Mobile Intensive Care Technician (Paramedic) Program

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

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

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

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

(Major Code 486A; State CIP Code 51.0904)

- Emergency Medical Science (http://www.jccc.edu/academics/health/emergency-medical-science)
- Gainful Employment Data (http://www.jccc.edu/academics/health/emergency-medical-science/gainful-employment/Gedt.html)

First Semester

EMS 220	MICT I*	10

EMS 225	MICT II*	10
Total Hours		20

Second Session

EMS 230	MICT III Clinicals*	12
Total Hours		12

Third Semester

EMS 271	MICT IV Field Internship*	15
Total Hours		15

Total Program Hours: 47

Entrepreneurship

Business Plan Certificate

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

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 (http://www.jccc.edu/academics/business/entrepreneurship)

First Semester

ENTR 120	Introduction to Entrepreneurship	2
ENTR 180	Opportunity Analysis	2
ENTR 130	Entrepreneurial Mindset	3
Total Hours		7

Second Semester

ENTR 142	Business Plan	3
Total Hours		3

Total Program Hours: 10

Entrepreneurship Certificate

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

(Major Code 5080; State CIP Code 52.0701)

- Entrepreneurship (http://www.jccc.edu/academics/business/entrepreneurship)
- Gainful employment data (http://www.jccc.edu/academics/business/entrepreneurship/gainful-employment/Gedt.html)

First Semester

MKT 230	Marketing	3
ACCT 121	Accounting I	3
or ACCT 111	Small Business Accounting	
ENTR 120	Introduction to Entrepreneurship	2
ENTR 180	Opportunity Analysis	2
MKT 134	Professional Selling	3
ENTR 130	Entrepreneurial Mindset	3
Total Hours		16

Second Semester

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
ENTR 220	Entrepreneurial Marketing*	2
ENTR 142	Fast Trac Business Plan	3
ENTR 195	Franchising*	3

or ENTR 225	Family Business	
or ENTR 185	Fundamentals of Direct Sales	
Total Hours		18

Total Program Hours: 34

Entrepreneurship, AAS

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 (http://www.jccc.edu/academics/business/entrepreneurship)

First Semester

ENTR 120	Introduction to Entrepreneurship	2
ENTR 130	Entrepreneurial Mindset	3
ENGL 121	Composition I*	3
MATH 120	Business Mathematics*	3
SPD 120	Interpersonal Communication	3
Total Hours		14

Second Semester

ENTR 180	Opportunity Analysis	2
MKT 134	Professional Selling	3
ACCT 111	Small Business Accounting	3
or ACCT 121	Accounting I	
MKT 230	Marketing	3
BUS 175	Business Professional Skills	3
MKT 202	Consumer Behavior	3
ENTR 210	Entrepreneurship Internship I*	1
Total Hours		18

Third Semester

ENTR 131	Financial Management for Small Business*	2
ENTR 160	Legal Issues for Small Business	2
ENTR 225	Family Business	3
or ENTR 195	Franchising*	
or ENTR 185	Fundamentals of Direct Sales	
BUS 150	Business Communications*	3
ENTR 215	Entrepreneurship Internship II*	1
MKT 205	eMarketing	3
BUS 225	Human Relations	3
Total Hours		17

Fourth Semester

ENTR 220	Entrepreneurial Marketing*	2
ENTR 142	Fast Trac Business Plan	3
ECON 132	Survey of Economics	3
or ECON 230	Principles of Macroeconomics	
or ECON 231	Principles of Microeconomics	
HIST 141	U.S. History Since 1877	3
Select one of the following:		4
CIS 124	Introduction to Computer Concepts and Applications (AND a 1-hour CPCA/CDTP elective - not including CPCA 105 or CPCA 106)	
CPCA/CDTP electives (4)		
Total Hours		15

Total Program Hours: 64

Fashion Merchandising and Design

Alteration Advanced Certificate

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.

(Major Code 5000; State CIP Code 19.0999)

- Fashion (http://www.jccc.edu/academics/arts-design/fashion)

Prerequisites for Required Courses

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

FASH 143	Tailoring*	4
Total Hours		4

Second Semester

FASH 201	Advanced Garment Alterations*	4
FASH 285	Fashion Internship III	1
Total Hours		5

Total Program Hours: 9

Apparel Design and Technology, AAS

As a JCCC Apparel Design student you will study the creative process from concept through to production using technical industry standards. Key courses in Apparel Design include garment construction, pattern making, draping, computer aided design and product development. As a student you will have the ability to create and show your original designs at the annual student produced fashion show. The courses will introduce the most up to date industry technology in Adobe Illustrator, Adobe Photoshop, Gerber Accumark patternmaking, and Gerber PLM. JCCC is one of the few apparel design programs in the country to offer a key industry software program, PLM (product development lifestyle management.) Apparel Design majors also learn about textiles, history of fashion, how to build a portfolio, and current sustainability efforts and ethical practices in the fashion industry. Additionally you will have the opportunity to take course credit for travel to New York City and Las Vegas for the Magic trade show. Apparel design professors have a minimum of 10+ years' of experience in the apparel industry.

Whether your goals are to obtain entry level positions or transfer to a design school, you will be prepared for success and have a solid foundation with an Apparel Design degree from JCCC.

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

(Major Code 2950; State CIP Code 50.0407)

- Fashion (http://www.jccc.edu/academics/arts-design/fashion)

Associate of Applied Science Degree

First Semester

FASH 121	Fashion Fundamentals	3
FASH 122	Aesthetics for Merchandising and Design	3
FASH 123	Apparel Construction I	4
ENGL 121	Composition I*	3
MATH 120	Business Mathematics* (or higher)	3
Total Hours		16

Second Semester

FASH 124	Apparel Construction II*	4

FASH 130	Fashion Illustration I	3
FASH 131	Flat Pattern Development*	4
FASH 133	Computer Aided Apparel Design*	3
FASH 150	Textiles	3
Total Hours		17

Summer Semester

Communications Elective ^	3
Total Hours	3

^　　See all AAS general education electives (p. 236)

Third Semester

FASH 180	Draping*	3
FASH 190	Apparel Fit, Alterations and Analysis*	3
FASH 270	Apparel Product Development*	3
FASH 224	History of Costume	3
FASH 283	Fashion Internship I	1
Humanities Electives ^		3
Total Hours		16

^　　See all AAS general education electives (p. 236)

Fourth Semester

FASH 127	Computer Aided Pattern Development*	4
FASH 255	Apparel Specification Technology*	3
FASH 275	Fashion Portfolio Development*	1
FASH 280	Capstone: Industry Topics*	3
FASH 284	Fashion Internship II	1
Social Science and/or Economics Elective ^		3
Total Hours		15

^　　See all AAS general education electives (p. 236)

Total Program Hours: 67

Fashion Merchandising, AAS

Fashion merchandising is concerned with the business of fashion. This rewarding career combines creative fashion skills with the analytical skills of business, as a fashion merchandise manager you consider the colors, sizes, silhouettes, and price points that customers want to see in stores each season.

JCCC's fashion merchandising program prepares you for jobs in many aspects of the fashion industry. Fashion merchandising and management-related fields are expanding in Johnson County. Surveys indicate that few other areas offer greater opportunity to qualified people, as employment in this field is expected to increase faster than the average for all occupations nationwide. Graduates of JCCC's program are ready for entry-level management or sales positions in retail, wholesale or manufacturing marketing services, and visual merchandising

In JCCC's program, working individually and in teams, you'll learn about buying and control techniques, merchandising, planning and fashion management, including strategies and plans that consider markets and trends. An advisory board of fashion professionals help ensure that JCCC's program reflects current standards and practices in the field. All fashion professors have worked within the industry.

The merchandising and marketing skills you'll learn are immediately applicable to your job and career. Internships give you first-hand experience in the field and help you make networking contacts. You can also take your work experiences back to the classroom for analysis and greater understanding of the problems the fashion industry faces. By integrating coursework and on-the-job experience, you gain the knowledge, skills and attitudes necessary to reach your career objectives.

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 (http://www.jccc.edu/academics/arts-design/fashion)

Associate of Applied Science Degree

First Semester

FASH 277	Fashion Seminar: Career Options	2
FASH 283	Fashion Internship I	1
FASH 121	Fashion Fundamentals	3
FASH 122	Aesthetics for Merchandising and Design	3
FASH 125	Visual Merchandising	3
ENGL 121	Composition I*	3
FASH 135	Image Management	1
Total Hours		16

Second Semester

FASH 225	Store Planning*	3
FASH 284	Fashion Internship II	1
MATH 120	Business Mathematics* (or higher)	3
FASH 150	Textiles	3
MKT 134	Professional Selling	3
Communications Elective ^		3
NOTE: Recommended courses for Communications Elective are BUS 150, SPD 121, or SPD 120		
Total Hours		16

^   See all AAS general education electives (p. 236)

Third Semester

FASH 242	Product Knowledge for Merchandisers	3
FASH 285	Fashion Internship III	1
BUS 225	Human Relations	3
MKT 230	Marketing	3
MKT 121	Retail Management	3
ECON 132	Survey of Economics	3
or ECON 230	Principles of Macroeconomics	
Total Hours		16

Fourth Semester

Fashion Electives (see below)		2
FASH 286	Fashion Internship IV*	1
FASH 132	Marketing Communications	3
FASH 231	Merchandising Planning and Control*	3
FASH 280	Capstone: Industry Topics*	3
Humanities Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Fashion Electives

FASH 123	Apparel Construction I	4
FASH 130	Fashion Illustration I	3
FASH 215	Field Study: MAGIC Trade Show*	1
FASH 224	History of Costume	3

| FASH 268 | Field Study: The Market Center* | 3 |
| ITMD 127 | Elements of Floral Design | 1 |

Total Program Hours: 63

Visual Merchandising Certificate

This certificate enables students to understand the importance of visual merchandising, and its impact on the success or failure of the retailer. Through analysis of the store layout, lighting, fixtures, props, window, and in-store displays the students learn the importance of creating a store's image. Course assignments include creating displays within the display cases at JCCC and case studies on individual retailer's use of visual display to encourage the sale of fashion apparel and accessories.

(Major Code 7200; State CIP Code 52.1902)

- Fashion (http://www.jccc.edu/academics/arts-design/fashion)
- Gainful Employment Data (http://www.jccc.edu/academics/arts-design/fashion/gainful-employment/Gedt.html)

First Semester

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

Second Semester

Fashion Elective		3
NOTE: Fashion electives are any courses with the FASH prefix.		
ITMD 147	Lighting Basics*	1
FASH 225	Store Planning*	3
FASH 283	Fashion Internship I	1
Total Hours		8

Total Program Hours: 18

Fire Services Administration

Associate of Arts with Emphasis in Fire Services Administration

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 associate of arts 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. A list of **approved cultural diversity courses** can be found in the list of AA general education electives (p. 239).

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)

- Fire Science (http://www.jccc.edu/academics/public-safety/fire-science)

First Semester

ENGL 121	Composition I*	3
BUS 140	Principles of Supervision	3
MATH 171	College Algebra* (or higher)	3
FIRE 162	Firefighting Tactics*	3
Social Science Elective [^]		3
Total Hours		15

[^]   See all AA general education electives (p. 239)

Second Semester

ENGL 122	Composition II*	3
BUS 141	Principles of Management	3
FIRE 136	Fire and Emergency Management*	3
Humanities Elective [^]		3

Physical Science, with lab ^		4
Total Hours		16

^   See all AA general education electives (p. 239)

Third Semester

Technical Electives (see below)		5
FIRE 220	Fire Management*	3
FIRE 222	Fire Science Law*	3
Oral Communication ^		3
Science and/or Math Elective ^		3
Total Hours		17

^   See all AA general education electives (p. 239)

Fourth Semester

Technical Electives (see below)		3
FIRE 201	Leadership in the Fire Service*	3
FIRE 152	Codes/Detection and Suppression Systems*	3
Humanities Elective ^		3
Social Science Elective ^		3
Total Hours		15

^   See all AA general education electives (p. 239)

Technical Electives

FIRE 120	Fire Academy*	12
EMS 128	EMS First Responder	5
EMS 131	Emergency Medical Technician*	10
EMS 220	MICT I*	10
EMS 225	MICT II*	10
BUS 121	Introduction to Business	3
BUS 145	Small Business Management	3
BUS 150	Business Communications*	3

Total Program Hours: 63

Fire Services Administration Certificate

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 (http://www.jccc.edu/academics/public-safety/fire-science)

- Gainful Employment Data (http://www.jccc.edu/academics/public-safety/fire-science/gainful-employment/Gedt.html)

First Semester

FIRE 162	Firefighting Tactics*	3
FIRE 220	Fire Management*	3
FIRE 222	Fire Science Law*	3
Total Hours		9

Second Semester

FIRE 136	Fire and Emergency Management*	3
FIRE 152	Codes/Detection and Suppression Systems*	3
FIRE 201	Leadership in the Fire Service*	3
Total Hours		9

Total Program Hours: 18

Game

Game Development, AAS

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.

(Major Code 2650; State CIP Code 50.0411)

- Game Development (http://www.jccc.edu/academics/computers/game-development)

Associate of Applied Science Degree

First Semester

CIS 142	Beginning Programming using Python	4
ENGL 121	Composition I*	3
GAME 102	The Business of Games	3
GAME 104	Introduction to Game Development	1
GAME 105	Beginning Game Creation	3
MATH 171	College Algebra*	3
Total Hours		17

Second Semester (Game Programming Option)

CS 201	Concepts of Programming Algorithms using C#*	4
GAME 121	Game Programming I*	4
GAME 131	User-Centered Design*	4
GAME 180	Artificial Intelligence for Games*	3
Social Science and/or Economics Elective ^		3
Total Hours		18

^   See all AAS general education electives (p. 236)

Second Semester (Game Design Option)

GAME 120	Game Design I*	4
GAME 132	Game Level Editing*	4
GAME 136	Game Prototyping*	4
GAME 180	Artificial Intelligence for Games*	3
Social Science and/or Economics Elective ^		3
Total Hours		18

^   See all AAS general education electives (p. 236)

Third Semester (Game Programming Option)

CS 236	Object-Oriented Programming Using C#*	4
GAME 221	Game Programming II*	4
GAME 242	Agile Game Development*	3
MATH 191	Math and Physics for Games I*	4
or PHYS 191	Math Physics for Games I*	
Total Hours		15

Third Semester (Game Design Option)

GAME 134	Game World Creation*	4
GAME 220	Game Design II*	4
GAME 235	Game Quality Assurance*	2
GAME 242	Agile Game Development*	3
Humanities Elective ^		3
NOTE: HUM 155 or HUM 156 is recommended		
Total Hours		16

^   See all AAS general education electives (p. 236)

Fourth Semester (Game Programming Option)

Game Elective (see list below)		3
GAME 250	Game Capstone*	4
GAME 255	Mobile Game Programming*	4
SPD 120	Interpersonal Communication	3
or SPD 121	Public Speaking	
or SPD 125	Personal Communication	
Humanities Elective		3
NOTE: HUM 155 or HUM 156 is recommended		
Total Hours		17

^   See all AAS general education electives (p. 236)

Fourth Semester (Game Design Option)

Game Elective (see list below)		3
ENGL 150	Digital Narratives*	3
GAME 238	Serious Game Design*	3
GAME 250	Game Capstone*	4
SPD 120	Interpersonal Communication	3
or SPD 121	Public Speaking	
or SPD 125	Personal Communication	
Total Hours		16

Game Electives

ENGL 150	Digital Narratives*	3
GAME 120	Game Design I*	4
GAME 121	Game Programming I*	4
GAME 131	User-Centered Design*	4
GAME 132	Game Level Editing*	4
GAME 134	Game World Creation*	4
GAME 136	Game Prototyping*	4
GAME 220	Game Design II*	4
GAME 221	Game Programming II*	4
GAME 235	Game Quality Assurance*	2
GAME 238	Serious Game Design*	3
GAME 255	Mobile Game Programming*	4
GAME 292	Special Topics:*	3

Total Program Hours: 67

General Sciences

General Sciences, AS

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 a minimum of 63 college-level credit hours, with 33 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 graduating with an associate of science 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. A list of **approved cultural diversity courses** can be found in the list of AS general education electives (p. 249).

(Major Code 1010; State CIP Code 24.0101)

Associate of Science Degree

First Semester

Electives		7
ENGL 121	Composition I*	3
Communications Elective ^		3
Humanities Elective ^		3
Total Hours		16

^   See all AS general education electives (p. 249)

Second Semester

Electives		6
MATH 171	College Algebra* (or higher)	3
Communications Elective ^		
Social Science/Economics Elective ^		3
Total Hours		12

^   See all AS general education electives (p. 249)

Third Semester

Electives		9
Humanities Elective ^		3
Science course with Lab ^		4
Total Hours		16

^   See all AS general education electives (p. 249)

Fourth Semester

Electives		8
Science and/or Mathematics Elective ^		5
Social Science/Economics Elective ^		3
Total Hours		16

^   See all AS general education electives (p. 249)

Total Program Hours: 63

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, AGS

The associate of general studies degree from JCCC requires a minimum of 63 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

Electives		7
ENGL 121	Composition I*	3
Communications Skills - Speaking [^]		3
Global Issues/Diversity [^]		3
Total Hours		**16**

[^]   See all AGS general education electives (p. 244)

Second Semester

Electives	7
Culture & Ethics-Historical Perspective [^]	3
Modes of Inquiry-Scientific [^]	3
Computer Skills [^]	3
Total Hours	**16**

[^]   See all AGS general education electives (p. 244)

Third Semester

Electives	9
Mathematics [^]	3
The Arts [^]	3
Total Hours	**15**

[^]   See all AGS general education electives (p. 244)

Fourth Semester

Electives	10
Culture & Ethics-Cultural Perspective [^]	3
Modes of Inquiry-Social [^]	3
Total Hours	**16**

[^]   See all AGS general education electives (p. 244)

Total Program Hours: 63

Graphic Design

Graphic Design, AAS

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 67 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 (http://www.jccc.edu/academics/arts-design/graphic-design)

Associate of Applied Science Degree

Qualifier Semester

ART 124	Design 2D*	3
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 Hours		9

Fall Semester

ART 129	Design Color*	3
GDES 130	Drawing and Media Methods I*	3
GDES 132	Typography*	3
GDES 140	Technical Processes*	3
ENGL 121	Composition I*	3
Total Hours		15

Spring Semester

ART 127	Design 3D*	3
GDES 131	Drawing and Media Methods II*	3
GDES 134	Layout Design*	3
Humanities Electives ^		3
Social Science and/or Economics Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Fall Semester

GDES 230	Drawing and Media Methods 3*	3
GDES 231	Advanced Typography*	3

GDES 235	Production Methods*	3
Humanities Electives ^		3
Total Hours		12

^   See all AAS general education electives (p. 236)

Spring Semester

Technical/Studio Elective (see below)		1
GDES 236	Electronic Production*	3
GDES 244	Communication Systems*	3
GDES 245	Advanced Design Practice*	3
GDES 272	Professional Preparation*	3
Science and/or Math Elective ^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

Technical/Studio Electives

ART 135	Painting I	3
ART 136	Painting II*	3
ART 172	Watercolor Painting	3
ART 231	Life Drawing I*	3
ART 232	Life Drawing II*	3
CDTP 155	Desktop Photo Manipulation II: Photoshop*	1
CDTP 160	Desktop Publishing II: InDesign*	1
CDTP 165	Desktop Illustration II: Illustrator*	1
CDTP 175	Desktop Photo Manipulation III: Photoshop*	1
CDTP 185	Desktop Illustration III: Illustrator*	1
GDES 275	Graphic Design Internship*	1
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.		
PHOT 121	Fundamentals of Photography	3
PHOT 122	Advanced Photography*	3
PHOT 123	Studio Photography*	3
WEB 110	HTML and CSS	3
WEB 233	Visual Storytelling*	3

Total Program Hours: 67

Health Care Interpreting

Health Care Interpreting Certificate

Health care interpreting (HCI) is designed to give bilingual (English and Spanish) students the awareness, knowledge and skills necessary to serve as entry-level interpreters and translators in health care settings, including hospitals, clinics, medical offices and similar environments. Program completers should be eligible for employment as salaried or on-call staff interpreters, or as self-employed freelance interpreters. Employment opportunities may also be available with professional interpreting and translating service companies. Although the emphasis of the program is medical interpreting, the skills gained could be applied to other interpreting and translating settings in the community, such as conference interpreting and translation of written documents.

Each year we accept up to **12 new 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 (cdecasqu@jccc.edu) if you have any questions about the selective process. Final selection for new HCI students is made in May.

Candidates for the Health Care Interpreting certificate will be tested in their non-dominate language in order to measure knowledge and fluency in both English and Spanish, with a requirement of ACTFL Advanced Mid in Spanish or English for admission to the program.

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 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 interpreter training emphasize deaf communication and sign language (ASL/AEIP) as well as legal interpreting (LI) . HCI students should enroll only in courses with the HCI prefix, plus HC 130 and HC 101.

Students must earn a grade of "C" or higher in all coursework and be able to demonstrate at least 80% accuracy in both English and Spanish while interpreting.

REQUIREMENTS: All students who participate in shadowing and practicum assignments at Truman Medical Centers (TMC) and Children's Mercy Hospital (CMH) must complete specific requirements. At the end of the fall semester, all students must complete and provide the following information to the HCI supervisor:

1. A copy of background checks with satisfactory results.

2. A copy of drug testing with satisfactory results.

3. Their Social Security Number.

4. Proof of up-to-date immunizations - records must include 2TB tests with readings, MMR, Varicella, the current year's flu shot, Tdap and Hepatitis B vaccinations.

5. A copy of the results from all the TMC Compliance tests and a copy of the CMH Compliance test.

6. Signed confidentiality sheets from TMC and CMH.

7. Proof of health insurance by January 1.

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)

- Spanish-English Interpreting (http://www.jccc.edu/academics/communications/spanish-english-interpreting)
- Gainful Employment Data (http://www.jccc.edu/academics/communications/spanish-english-interpreting/gainful-employment-health-interpreting/Gedt.html)

Fall Semester

HCI 110   Introduction to Interpreting*   3

HCI 120	Interpreting Skills I*	3
Total Hours		6

Spring Semester

HCI 130	Interpreting Skills II*	3
HCI 140	Spanish Medical Interpreting*	3
HC 130	Medical Terminology for Healthcare Professions	3
Total Hours		9

Summer/Fall Semester

HCI 180	Medical Interpreting Practicum*	2
HC 101	Introduction to Health Care Delivery	3
Total Hours		5

Total Program Hours: 20

Health Information Systems

Associate of Science with Emphasis in Health Information Systems

The health information systems degree program prepares students to support the health information systems industry usage of electronic health records to improve the quality, efficiency, and security of patient records for improved care.

Health information systems professionals specialize in information technology necessary to support clinical processes and data, including roles which analyze system workflow, test-configure-maintain systems, and train end-users for software use. Trained professionals will understand national policy reform including HIPAA, meaningful use, information exchanges, consumer engagement and security regulations. The health IT industry professional is highly motivated, proficient in problem-solving, embraces change for quality improvement through system analysis, and understands the impact of customer service and technical support in the evolving healthcare environment for long term impact.

Employment includes a wide variety of positions from employers such as hospital systems, clinics, health departments, provider practices, safety net providers, software vendors, consultants, third-party payers, medical device companies, non-profits, and government. The associate's degree provides opportunity for experienced healthcare or IT workforce to complete a degree in the specialized industry and springboard individuals new to healthcare information systems into one of the fastest growing industries today. A career pathway to 4-year institutions with health information systems emphasis will provide greater opportunity for potential career advancement.

- Health Information Systems (http://www.jccc.edu/academics/computers/health-information-systems)

(Major Code 2180: State CIP Code 24.0101)

First Semester

HCIS 230	Introduction to Health Information Systems	2
HCIS 255	Technology Concepts in Healthcare	2
HCIS 262	Customer Service in the Health Environment	2
CPCA 110	Spreadsheets I: MS Excel*	1
CPCA 111	Spreadsheets II: MS Excel*	1
SPD 121	Public Speaking	3
MATH 171	College Algebra* (or higher)	3
ENGL 121	Composition I*	3
Total Hours		17

Second Semester

HCIS 267	EHR Design, Functionality and Usability	3
HCIS 271	The Culture of Healthcare	2
HCIS 272	Terminology in Health Care Settings	2
CPCA 114	Databases I: MS Access*	1
CPCA 115	Databases II: MS Access*	2
ENGL 122	Composition II*	3
Science course with lab^		4
Note: Biology course recommended, refer to your transfer school for best selection.		
Total Hours		17

^   See all AS general education electives (p. 249)

Third Semester (Workflow Management Option)

HCIS 263	Working with Health Information Technology (HIT) Systems	2
HCIS 273	Quality Improvement in Healthcare	2
HCIS 274	Healthcare Workflow Analysis and Redesign	2
PHIL 124	Logic and Critical Thinking	3
PSYC 130	Introduction to Psychology	3
SOC 122	Introduction to Sociology	3
Total Hours		15

Third Semester (Implementation and Support Option)

HCIS 263	Working with Health Information Technology (HIT) Systems	2
HCIS 264	Configuration and Implementation of Electronic Health Records	2
HCIS 265	Installation and Maintenance of Health IT Systems	2
PHIL 124	Logic and Critical Thinking	3
PSYC 130	Introduction to Psychology	3
SOC 122	Introduction to Sociology	3
Total Hours		15

Fourth Semester - (Workflow Management Option)

HCIS Elective (see below)		1-2
HCIS 277	Training and Instructional Design	2
MIRM 142	Legal and Ethical Issues in Healthcare	3
Humanities Elective ^		3
Science and/or Math Elective ^		5
Note: MATH 172 or higher recommended, refer to your transfer school for best selection. Must meet the minimum of twelve credit hours for the math and science area.		
Total Hours		14-15

^　See all AS general education electives (p. 249)

Fourth Semester - (Implementation and Support Option)

HCIS Elective (see below)		1-2
HCIS 261	Networking and Health Information Exchange	2
MIRM 142	Legal and Ethical Issues in Healthcare	3
Humanities Elective ^		3
Science and/or Math Elective ^		5
Note: MATH 172 or higher recommended, refer to your transfer school for best selection. Must meet the minimum of twelve credit hours for the math and science area.		
Total Hours		14-15

^　See all AS general education electives (p. 249)

HCIS Electives

HCIS 261	Networking and Health Information Exchange	2
HCIS 264	Configuration and Implementation of Electronic Health Records	2
HCIS 265	Installation and Maintenance of Health IT Systems	2
HCIS 270	Health Information Systems Internship*	2
HCIS 273	Quality Improvement in Healthcare	2
HCIS 274	Healthcare Workflow Analysis and Redesign	2
HCIS 275	Health Information Systems	2
HCIS 292	Special Topics:	1-2

Total Program Hours: 63-64

Health Information Systems Implementation and Support Specialist Certificate

This certificate program prepares the learner to provide on-site user support for the period of time before and during implementation of health information systems in clinical and public health settings. Previous experience with information technology or information management is desirable.

Health Information Systems (http://www.jccc.edu/academics/computers/health-information-systems)

(Major Code 5160; State CIP Code 51.0709)

First Semester

HCIS 230	Introduction to Health Information Systems	2
HCIS 272	Terminology in Health Care Settings	2
HCIS 255	Technology Concepts in Healthcare	2
HCIS 261	Networking and Health Information Exchange	2
HCIS 263	Working with Health Information Technology (HIT) Systems	2
Total Hours		10

Second Semester

HCIS Elective (see below)		2
HCIS 264	Configuration and Implementation of Electronic Health Records	2
HCIS 265	Installation and Maintenance of Health IT Systems	2
HCIS 262	Customer Service in the Health Environment	2
HCIS 267	EHR Design, Functionality and Usability	3
Total Hours		11

HCIS Electives

HCIS 271	The Culture of Healthcare	2
HCIS 273	Quality Improvement in Healthcare	2
HCIS 274	Healthcare Workflow Analysis and Redesign	2
HCIS 275	Health Information Systems	2
HCIS 270	Health Information Systems Internship*	2
HCIS 292	Special Topics:	1-2

Total Program Hours: 21

Health Information Systems Workflow Management and Training Specialist Certificate

This certification program will provide participants with the knowledge and skills to assist healthcare providers to design workflow and implement electronic health records (EHRs) to meet government standards of meaningful use, quality improvement and reporting. The learner will be prepared to design and deliver training programs to employees in clinical and public health settings to prepare them for EHR implementation.

Health Information Systems (http://www.jccc.edu/academics/computers/health-information-systems)

(Major Code 5170; State CIP Code 51.0706)

First Semester

HCIS 230	Introduction to Health Information Systems	2
HCIS 255	Technology Concepts in Healthcare	2
HCIS 271	The Culture of Healthcare	2
HCIS 272	Terminology in Health Care Settings	2
HCIS 273	Quality Improvement in Healthcare	2
Total Hours		10

Second Semester

HCIS Elective (see below)		2
HCIS 274	Healthcare Workflow Analysis and Redesign	2
HCIS 275	Health Information Systems	2
HCIS 277	Training and Instructional Design	2
HCIS 267	EHR Design, Functionality and Usability	3
Total Hours		11

HCIS Electives

HCIS 261	Networking and Health Information Exchange	2
HCIS 262	Customer Service in the Health Environment	2
HCIS 263	Working with Health Information Technology (HIT) Systems	2
HCIS 270	Health Information Systems Internship*	2
HCIS 292	Special Topics:	1-2

Total Program Hours: 21

Health Occupations

Certified Medication Aide Certificate

This 80-hour course covers information related to many commonly prescribed medications. Students learn the classification, side effects and techniques of administration, including preparations and accurate distribution of medications. Safety of clients in long-term care will be discussed and demonstrated by students. Clinical practice sessions will be conducted in a long-term care facility.

A pre-requisite to admission is successful completion of a reading level exam/assessment. Copies of the following will be required on the first day of class: social security card, current Kansas CNA card, current CPR for Health Care Provider card and documentation of a current negative TB test. The Kansas CMA examination is administered to successful completers of this course.

The employment outlook for the future is excellent. Facilities employing the CMA include long-term care nursing centers as well as other types of group homes and agencies.

(Major Code 3560; State CIP Code 51.2603)

- Nursing Related Occupations (http://www.jccc.edu/academics/health/nursing-related-occupations)

Required Course

AVHO 104	Certified Medication Aide (CMA)*	4
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 Hours		4

Total Program Hours: 4

Certified Medication Aide Update Certificate

Certified medication aides in Kansas are required to obtain continuing education every two years to renew the CMA certificate. This course meets the state requirements for re-certification. 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 KDADS for $20.00.

(Major Code 3600; State CIP Code 51.2603)

- Nursing Related Occupations (http://www.jccc.edu/academics/health/nursing-related-occupations)

Required Course

AVHO 108	Certified Medication Aide Update (CMA-U)*	1
Total Hours		1

Total Program Hours: 1

Certified Nurse Aide Certificate

This 96-hour course provides classroom and clinical instruction for basic care of clients in long-term and acute-care facilities. Students will learn skills for daily hygiene, bedside care, vital-sign measurement, positioning and safe transfer of clients. You will learn about common health problems and chronic illnesses. Clinical practice sessions are conducted in the nursing home setting. This course is offered in a classroom setting as well as non-traditional online.

Enrollees for this course must pass a reading level exam/assessment prior to admission. Copies of the following will be required on the first day of class: social security card, current CPR for Health Care Providers card and documentation of a current negative TB test.

Attendance is critical and should be given top priority. Failure to meet the criteria outlined in the syllabus will necessitate withdrawal from a class. Upon successful completion of the course, students will be scheduled to take the Kansas CNA examination. Sufficient notice of the exam date is given to allow students to make arrangements to be in attendance on the appointed day.

Employment for workers with CNA skills and training is abundant in long-term care facilities. Acute-care hospitals also employ basic patient care aides who are willing to learn advanced skills.

(Major Code 3530; State CIP Code 51.3902)

- Health Occupations -Nursing Related (http://www.jccc.edu/academics/health/nursing-related-occupations)

Required Course

AVHO 102	Certified Nurse Aide (CNA)*	5
Documentation of current TB skin test - negative results within the last year.		
Current CPR for Health Care Providers and a Social Security card.		
Total Hours		5

Total Program Hours: 5

Certified Nurse Aide Refresher Certificate

The CNA in Kansas is required to work at least eight hours every two years for the CNA certificate to remain active. If the CNA does not work for two years, a 21-hour refresher course must be completed. This course meets the state requirement to activate the CNA certificate.

This course includes 12 hours of classroom instruction and 9 hours of laboratory experience. Students will discuss the nurse aide's responsibility in the current health care system and the importance of resident's rights. The student will demonstrate safety measures, infection control procedures, personal care skills, measurement of vital signs and transfers, positioning and turning.

Students enrolled in the refresher course must show proof of certification as a Kansas CNA by bringing a copy of their card on the first day of class.

(Major Code 3540; State CIP Code 51.3902)

- Nursing Related Occupations (http://www.jccc.edu/academics/health/nursing-related-occupations)

Required Course

AVHO 103	Certified Nurse Aide Refresher Course (CNA-R)*	1
Total Hours		1

Total Program Hours: 1

Home Health Aide Certificate

Home health care services are in demand, and continued growth in employment opportunities is expected into the next century. Home health aides may be required to provide support services for all age levels in the home setting. This 21-hour course will provide you with information necessary for nutritional meal planning, task modification, emotional support and personal services to clients and families needing health care assistance at home.

Enrollees must complete a reading comprehension exam/assessment prior to admission. Copies of the following will be required on the first day of class: social security card and current Kansas CNA card. 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.

(Major Code 3580; State CIP Code 51.2602)

- Nursing Related Occupations (http://www.jccc.edu/academics/health/nursing-related-occupations)

Required Course

AVHO 106	Home Health Aide (HHA)*	1
Total Hours		1

Total Program Hours: 1

Heating, Ventilation and Air Conditioning Technology

Heating, Ventilation, Air Conditioning, and Refrigeration Technology, AAS

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 2860; State CIP Code 47.0201)

- Heating, Ventilation and Air Conditioning Technology (http://www.jccc.edu/academics/industrial-technology/hvac)

Associate of Applied Science Degree

First Semester

ENGL 121	Composition I*	3
INDT 155	Workplace Skills	1
HVAC 105	HVAC Fundamentals	4
HVAC 110	Electrical Fundamentals	4
HVAC 136	Heating System Fundamentals	3
HVAC 164	EPA 608 Refrigerant Management	1
Total Hours		16

Second Semester

EMS 121	CPR I - Basic Life Support for Healthcare Provider	1
INDT 125	Industrial Safety/OSHA 30	3
HVAC 142	Load Calculations	3
HVAC 201	Cooling Systems*	3
MATH 130	Technical Mathematics I* (or higher)	3
Humanities Elective ^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

Third Semester

Technical Electives		3
NOTE: Technical electives are any courses with the AUTO, CET, DRAF, ELEC, ELTE, HVAC, INDT or MFAB prefix.		
HVAC 167	Sheet Metal Layout and Fabrication	3
HVAC 231	HVAC Rooftop Units*	3
HVAC 242	Duct Design and Equipment Selection*	3
Communications Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Fourth Semester

Technical Electives		2
NOTE: Technical electives are any courses with the AUTO, CET, DRAF, ELEC, ELTE, HVAC, INDT or MFAB prefix.		
HVAC 236	Advanced Heating Applications*	3
HVAC 250	HVAC Installation and Start-up Procedures*	3
HVAC 275	HVAC Code Review*	3
HVAC 277	HVAC Control Systems*	3
Social Science and/or Economics Elective ^		3
Total Hours		17

^   See all AAS general education electives (p. 236)

Total Program Hours: 64

Heating, Ventilation, and Air Conditioning Technology Certificate

The 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 to complete the certificate option learn the theory of operation and how to service, repair and design gas furnaces, central air conditioners, heat pumps, rooftop air conditioning systems, 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 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 6230; State CIP Code 47.0201)

- Heating, Ventilation and Air Conditioning Technology (http://www.jccc.edu/academics/industrial-technology/hvac)
- Gainful Employment Data (http://www.jccc.edu/academics/industrial-technology/hvac/gainful-employment/Gedt.html)

First Semester

HVAC 105	HVAC Fundamentals	4
HVAC 110	Electrical Fundamentals	4
HVAC 136	Heating System Fundamentals	3
HVAC 164	EPA 608 Refrigerant Management	1
HVAC 167	Sheet Metal Layout and Fabrication	3
INDT 155	Workplace Skills	1
Total Hours		16

Second Semester

INDT 125	Industrial Safety/OSHA 30	3
HVAC 142	Load Calculations	3
HVAC 201	Cooling Systems*	3
HVAC 236	Advanced Heating Applications*	3
HVAC 250	HVAC Installation and Start-up Procedures*	3
HVAC 280	HVAC Internship*	1-3
Note: Only 1 credit hour internship for certificate program.		
Total Hours		16-18

Total Program Hours: 32

Horticulture

Horticultural Sciences Certificate

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.

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)

- Horticultural Sciences (http://www.jccc.edu/academics/agriculture/horticultural-sciences)
- Gainful Employment Data (http://www.jccc.edu/academics/agriculture/horticultural-sciences/gainful-employment/Gedt.html)

First Semester

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 Hours		16

Second Semester

HORT 215	Woody Plants II, Evergreens	3
HORT 225	Plant Problems*	3
HORT 135	Landscape Design	3
HORT 205	Plant Propagation*	3
Elective (see below)		3
Total Hours		15

Elective (choose one course)

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

Total Program Hours: 31

Horticultural Sciences, AAS

The horticulture degree program is designed to prepare students with the knowledge and job skills for employment in the greening industry. Upon completion of the associate of applied science degree, students will possess the competencies to be successful at entry-level or higher positions in landscape design and maintenance, greenhouse operations, chemical applicator lawn care, park attendants, plant science technicians, groundskeepers, landscape technicians, irrigation technicians and other related occupations.

(Major Code 2150; State CIP Code 01.0601)

- Horticultural Sciences (http://www.jccc.edu/academics/agriculture/horticultural-sciences)

Associate of Applied Science

First Semester

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
Total Hours		18

Second Semester

HORT 205	Plant Propagation*	3
HORT 215	Woody Plants II, Evergreens	3
HORT 260	Horticulture Soils	3
MATH 116	Intermediate Algebra* (or higher)	3
Social Science/Economics Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Third Semester

Electives (see below)		6
HORT 140	Turfgrass I	3
HORT 235	Landscape Maintenance and Techniques	3
Humanities ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Fourth Semester

Horticulture Electives (see below)		6
HORT 160	Garden Center Operations	3
HORT 225	Plant Problems*	3
HORT 270	Horticulture Internship*	3
Total Hours		15

Horticulture Electives

HORT 135	Landscape Design	3
HORT 150	Fruits, Vegetables and Herb Crops	2
HORT 165	Arboriculture	3
HORT 240	Turfgrass II*	3
HORT 255	Pest Control Management	3
HORT 265	Landscape Construction	3
FLR 130	Principles of Traditional Design	3
FLR 150	Contemporary Design Styles	3

List of Electives

BUS 140	Principles of Supervision	3
BUS 150	Business Communications*	3
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

Total Program Hours: 63

Landscape Technician Certificate

The 31-credit-hour certificate program is designed to prepare students for a career in landscape design and maintenance. Upon completion of this certificate, students will possess the competencies to be successful at entry-level or higher positions in landscape design and maintenance and other related occupations.

A full-time student can complete this certificate in a fall-spring sequence year.

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)

- Horticultural Sciences (http://www.jccc.edu/academics/agriculture/horticultural-sciences)

First Semester

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 Hours		16

Second Semester

Landscape Elective (see list below)		3
HORT 215	Woody Plants II, Evergreens	3
HORT 225	Plant Problems*	3
HORT 135	Landscape Design	3
HORT 265	Landscape Construction	3
Total Hours		15

Landscape Electives

HORT 150	Fruits, Vegetables and Herb Crops	2
HORT 205	Plant Propagation*	3
HORT 260	Horticulture Soils	3
HORT 240	Turfgrass II*	3
HORT 270	Horticulture Internship*	3
BUS 121	Introduction to Business	3
BUS 145	Small Business Management	3

Total Program Hours: 31

Hospitality Management

Chef Apprenticeship, AAS

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.

(Major Code 2440; State CIP Code 12.0503)

- Chef Apprenticeship (http://www.jccc.edu/academics/hospitality-culinary/chef-apprenticeship)

Associate of Applied Science Degree

First Semester

HMGT 121	Perspectives of Hospitality Management	3
HMGT 123	Professional Cooking I*	3
MATH 120	Business Mathematics* (or higher)	3
HMGT 120	Food Service Sanitation	1
HMGT 281	Culinary Arts Practicum I*	2
Total Hours		12

Second Semester

CPCA	Computer Elective	1
DIET 151	Nutrition and Meal Planning	3
HMGT 273	Hospitality Cost Accounting*	3
HMGT 230	Professional Cooking II*	3
HMGT 282	Culinary Arts Practicum II*	2
Total Hours		12

Summer

ENGL 121	Composition I*	3
SPD 120	Interpersonal Communication	3
or SPD 121	Public Speaking	
or SPD 125	Personal Communication	
Total Hours		6

Third Semester

Humanities Elective ^		3
HMGT 271	Seminar in Hospitality Management: Purchasing	3
HMGT 220	American Regional Cuisine*	3
HMGT 285	Culinary Arts Practicum III*	2
Total Hours		11

^   See all AAS general education electives (p. 236)

Fourth Semester

HMGT 226	Garde Manger*	3

HMGT 223	Fundamentals of Baking	3
HMGT 277	Seminar in Hospitality Management: Menu Design Planning*	3
HMGT 286	Culinary Arts Practicum IV*	2
Total Hours		11

Fifth Semester

HMGT 231	Advanced Food Preparation*	4
HMGT 279	Beverage Control	3
PSYC 121	Applied Psychology	3
or PSYC 130	Introduction to Psychology	
HMGT 287	Culinary Arts Practicum V*	2
Total Hours		12

Sixth Semester

Hospitality Program Elective (see list below)		3
HMGT 128	Supervisory Management	3
HMGT 228	Advanced Hospitality Management*	3
HMGT 288	Culinary Arts Practicum VI*	2
Total Hours		11

Hospitality Program Electives

FL 135	Basic Spanish for Hospitality Management	3
HMGT 100	ACF Junior Culinarian	3
HMGT 130	Hospitality Law	3
HMGT 165	Food Industry Compliance Safety	3
HMGT 167	Local Food Production	3
HMGT 207	Hospitality Human Resource Management*	3
HMGT 238	Advanced Garde Manger*	3
HMGT 240	Advanced Baking*	4
HMGT 245	Travel for Credit*	3
HMGT 248	Confectionery Arts	3
HMGT 250	Introduction to Catering	3
HMGT 268	Hospitality Managerial Accounting*	3
HMGT 270	Meat and Fish Identification and Fabrication*	3
HMGT 292	Special Topics:*	3

Total Program Hours: 75

Dietary Manager Certificate

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 5370; State CIP Code 51.3103)

- Dietary Manager (http://www.jccc.edu/academics/hospitality-culinary/dietary-manager)

First Semester

DIET 100	Foodservice Management for Dietary Managers	3
DIET 151	Nutrition and Meal Planning	3
HMGT 120	Food Service Sanitation	1
HMGT 128	Supervisory Management	3
HMGT 123	Professional Cooking I*	3
MATH 120	Business Mathematics* (or higher)	3
Total Hours		16

Second Semester

DIET 200	Medical Nutrition Therapy*	3
ENGL 121	Composition I*	3
DIET 275	Dietary Managers Practicum*	2
DIET 251	Nutrition Applications*	3
HMGT 207	Hospitality Human Resource Management*	3
Total Hours		14

Total Program Hours: 30

Food and Beverage Management, AAS

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 68-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.

(Major Code 2550; State CIP Code 12.0504)

- Food and Beverage Management (http://www.jccc.edu/academics/hospitality-culinary/food-beverage-management)

Associate of Applied Science Degree

First Semester

HMGT 120	Food Service Sanitation	1
HMGT 121	Perspectives of Hospitality Management	3
HMGT 123	Professional Cooking I*	3
HMGT 271	Seminar in Hospitality Management: Purchasing	3
MATH 120	Business Mathematics* (or higher)	3
ENGL 121	Composition I*	3
Total Hours		16

Second Semester

DIET 151	Nutrition and Meal Planning	3
HMGT 128	Supervisory Management	3
HMGT 150	Seminar: Food Service Sales and Marketing	3
HMGT 273	Hospitality Cost Accounting*	3
SPD 120	Interpersonal Communication	3
or SPD 121	Public Speaking	
or SPD 125	Personal Communication	
Total Hours		15

Summer

PSYC 121	Applied Psychology	3
or PSYC 130	Introduction to Psychology	
Humanities Requirement ^		3
Total Hours		6

^   See all AAS general education electives (p. 236)

Third Semester

HMGT 230	Professional Cooking II*	3
HMGT 207	Hospitality Human Resource Management*	3
HMGT 221	Design and Facilities Management*	3
HMGT 277	Seminar in Hospitality Management: Menu Design Planning*	3
HMGT 279	Beverage Control	3
Total Hours		15

Fourth Semester

Hospitality Program Elective (see below)		3
HMGT 126	Food Management*	4
HMGT 228	Advanced Hospitality Management*	3
HMGT 268	Hospitality Managerial Accounting*	3
HMGT 275	Seminar in Hospitality Management: Internship*	3
Total Hours		16

Hospitality Program Electives

DIET 100	Foodservice Management for Dietary Managers	3
DIET 200	Medical Nutrition Therapy*	3
FL 135	Basic Spanish for Hospitality Management	3
HMGT 100	ACF Junior Culinarian	3
HMGT 130	Hospitality Law	3
HMGT 165	Food Industry Compliance Safety	3
HMGT 167	Local Food Production	3
HMGT 223	Fundamentals of Baking	3
HMGT 250	Introduction to Catering	3
HMGT 245	Travel for Credit*	3
HMGT 292	Special Topics:*	3

Total Program Hours: 68

Hotel & Lodging Management, AAS

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.

(Major Code 2510; State CIP Code 52.0904)

- Hotel and Lodging Management (http://www.jccc.edu/academics/hospitality-culinary/hotel-lodging-management)

Associate of Applied Science

First Semester

HMGT 121	Perspectives of Hospitality Management	3
ENGL 121	Composition I*	3
PSYC 121	Applied Psychology	3
or PSYC 130	Introduction to Psychology	
HMGT 120	Food Service Sanitation	1
HMGT 132	Seminar in Housekeeping Operations	3
Total Hours		13

Second Semester

MATH 120	Business Mathematics*	3
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
Total Hours		15

Summer

Humanities Elective ^		3
HMGT 275	Seminar in Hospitality Management: Internship*	3
Total Hours		6

^   See all AAS general education electives (p. 236)

Third Semester

SPD 120	Interpersonal Communication	3
or SPD 121	Public Speaking	
or SPD 125	Personal Communication	
HMGT 130	Hospitality Law	3
HMGT 203	Hotel Sales and Marketing*	3
HMGT 273	Hospitality Cost Accounting*	3
HMGT 279	Beverage Control	3
Total Hours		15

Fourth Semester

Hospitality Program Elective (see below)		6
HMGT 207	Hospitality Human Resource Management*	3
HMGT 228	Advanced Hospitality Management*	3
HMGT 268	Hospitality Managerial Accounting*	3
Total Hours		15

Hospitality Program Electives

DIET 151	Nutrition and Meal Planning	3
FL 135	Basic Spanish for Hospitality Management	3
HMGT 100	ACF Junior Culinarian	3
HMGT 126	Food Management*	4
HMGT 150	Seminar: Food Service Sales and Marketing	3
HMGT 165	Food Industry Compliance Safety	3
HMGT 167	Local Food Production	3
HMGT 221	Design and Facilities Management*	3

HMGT 223	Fundamentals of Baking	3
HMGT 245	Travel for Credit*	3
HMGT 271	Seminar in Hospitality Management: Purchasing	3
HMGT 277	Seminar in Hospitality Management: Menu Design Planning*	3

Total Program Hours: 64

Pastry/Baking Certificate

The 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 34 credits with a maximum enrollment of 15 students. See the selective admission selection process (http://www.jccc.edu/admissions/apply/selective-admissions/pastry-baking.html). 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 223 Fundamentals of Baking before enrolling in the program.

(Major Code 5360; State CIP Code 12.0501)

- Pastry/Baking (http://www.jccc.edu/academics/hospitality-culinary/pastry-baking)
- Gainful Employment Data (http://www.jccc.edu/academics/hospitality-culinary/pastry-baking/gainful-employment/Gedt.html)

Prerequisites for Required Courses

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 223	Fundamentals of Baking	3
Total Hours		4

Fall Semester Only

HMPB 155	Pastry Shop Production I*	4
HMPB 160	Pastry Shop Principles I*	4
HMPB 233	Patisserie*	4
HMPB 252	Pastry Shop Business Basics I*	3
Total Hours		15

Spring Semester Only

HMPB 255	Pastry Shop Production II*	4
HMPB 257	Sugar Basics*	4
HMPB 260	Pastry Shop Principles II*	4
HMPB 262	Pastry Shop Business Basics II*	3
Total Hours		15

Total Program Hours: 34

Information Technology

Information Technology - Networking, AAS

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)

- Networking (http://www.jccc.edu/academics/computers/networking)

Associate of Applied Science Degree

First Semester

IT 140	Networking Fundamentals	4
IT 205	Implementing Windows Client	3
IT 230	Linux Fundamentals	3
ENGL 121	Composition I*	3
Social Science and/or Economics Elective ^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

Second Semester

IT 145	Routing and Switching Essentials*	3
IT 221	Windows Server*	3
IT 231	Linux Administration*	3
MATH 171	College Algebra*	3
ENGL 122	Composition II*	3
or ENGL 123	Technical Writing I*	
Total Hours		15

Third Semester

Technical Elective (see below)		2
IT 201	Network Security Fundamentals*	4
IT 209	Scaling Networks*	4
IT 225	Windows Active Directory Services*	3
IT 245	Network Infrastructure*	3
Total Hours		16

Fourth Semester

Technical Electives (see below)		7
IT 247	Accessing Wide Area Networks*	3
SPD 121	Public Speaking	3
or SPD 125	Personal Communication	
Humanities Elective^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

Technical Electives

CS 134	Programming Fundamentals	4
CPCA 121	Introduction to Project Management*	1
ELEC 185	LAN Cabling and Installation	3
IT 203	Voice Over IP Fundamentals*	4
IT 120	CompTIA A+ Practical Applications	3
IT 228	Exchange Server*	3
IT 232	Linux Networking*	4
IT 233	Linux Advanced Administration*	4
IT 238	Digital Forensics*	3
IT 239	Ethical Hacking*	3
IT 256	Windows Security*	4
IT 271	Information Technology Internship I*	3
IT 272	Information Technology Internship II*	3
IT 292	Special Topics:*	1-3

Total Program Hours: 63

Interior Design

Floral Design Certificate

The floriculture certificate program is designed to prepare students with the knowledge and job skills for employment in the Floriculture Industry. Upon completion of the floriculture certificate, students will possess the
competencies to be successful at entry-level or higher positions in the Floriculture Industry.

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 (http://www.jccc.edu/academics/arts-design/interior-design)
- Gainful Employment Data (http://www.jccc.edu/academics/arts-design/interior-design/gainful-employment-floral-design/Gedt.html)

First Semester

Electives (see below)		4-6
FLR 130	Principles of Traditional Design	3
FLR 150	Contemporary Design Styles	3
ACCT 111	Small Business Accounting	3
Total Hours		13-15

Second Semester

Electives (see below)		3
FLR 220	Wedding Design*	3
FLR 200	Plants for Interior Design	3
FLR 250	Special Event Designs*	3
FLR 270	Retail Flower Shop Operations*	3
Total Hours		15

Electives

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
ENTR 160	Legal Issues for Small Business	2
ENTR 220	Entrepreneurial Marketing*	2
MATH 120	Business Mathematics*	3
ITMD 127	Elements of Floral Design	1

Total Program Hours: 28-30

Interior Design Marketing & Management, AAS

The Interior Design program offers three certificate and three degree options designed to meet the needs of students seeking to become an interior designer, kitchen and bath designer, manager of an interior design firm, or industry-specializing professional among the vast variety of interior design disciplines. Interior Design: Marketing and Management AAS prepares students for careers in the interior design industry and provides coursework required to transfer for a Bachelor's degree program under an existing transfer agreement. The JCCC Interior Design Program provides relevant curriculum with experiential learning that emphasizes the student's ability to think creatively, critically and collaboratively in preparation of entering professional employment. Theory and application dovetail in the classroom and community, providing exposure to business and industry standards, professional practices and progressive design opportunities through cultivated industry relationships. 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: Some prerequisite courses for the Interior Design programs require a "C" or higher to be awarded the AAS degrees and certificates.

(Major Code 2960; State CIP Code 50.0408)

- Interior Design (http://www.jccc.edu/academics/arts-design/interior-design)

Associate of Applied Science Degree

First Semester

ITMD 121	Interior Design I	3
DRAF 164	Architectural Drafting/Residential Interior Design	3
ITMD 125	Interior Textiles	3
ITMD 132	Materials and Resources	3
ENGL 121	Composition I*	3
MATH 120	Business Mathematics* (or higher)	3
NOTE: MATH 171 suggested for transfer		
Total Hours		18

Second Semester

ITMD 185	Construction Methods, Building Systems and Regulations for the Interior Designer*	3
ITMD 231	History of Interior Design II	3
ITMD 202	Interior Design II*	3
ITMD 271	Budgeting and Estimating*	3
DRAF 264	CAD:Interior Design*	3
BUS 150	Business Communications*	3
or PSYC 130	Introduction to Psychology	
Total Hours		18

Third Semester

ITMD 129	Design Communication*	3
ITMD 215	Environmental Systems for the Interior Designer*	3
ACCT 121	Accounting I	3
MKT 134	Professional Selling	3
ITMD 219	Issues in Interior Design*	3
ITMD 282	Interiors Internship I*	1
Total Hours		16

Fourth Semester

ITMD 273	Practices and Procedures*	2
ITMD 280	Leadership in Design*	1
MKT 205	eMarketing	3
or MKT 121	Retail Management	
ITMD 239	Capstone: Interior Design*	2
ECON 230	Principles of Macroeconomics	3
or ECON 231	Principles of Microeconomics	
ARTH 180	Art History: Ancient to Renaissance	3
or ARTH 182	Art History: Renaissance to Modern	
ITMD 284	Interiors Internship II*	1
Total Hours		15

Total Program Hours: 67

Interior Design Sales Certificate

The interior design sales 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: 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 6540; State CIP Code 50.0408)

- Interior Design (http://www.jccc.edu/academics/arts-design/interior-design)
- Gainful Employment Data (http://www.jccc.edu/academics/arts-design/interior-design/gainful-employment-interior-sales/Gedt.html)

First Semester

ITMD 121	Interior Design I	3
ITMD 125	Interior Textiles	3
ITMD 132	Materials and Resources	3
MATH 120	Business Mathematics* (or higher)	3
MKT 134	Professional Selling	3
ITMD 282	Interiors Internship I*	1
Total Hours		16

Second Semester

MKT 121	Retail Management	3
ITMD 271	Budgeting and Estimating*	3
ITMD 284	Interiors Internship II*	1
BUS 150	Business Communications*	3
or PSYC 130	Introduction to Psychology	
DRAF 164	Architectural Drafting/Residential Interior Design	3
Total Hours		13

Total Program Hours: 29

Interior Design, AAS

The Interior Design Program offers three certificate and three degree options designed to meet the needs of students seeking to become an interior designer, kitchen and bath designer, manager of an interior design firm or industry-specializing professional among the vast variety of interior design disciplines.The Interior Design AAS degree focuses on interior design career preparation. The Interior Design AAS degree provides the educational start to apply for the Interior Design Fundamentals Exam from the National Council of Interior Design Qualification, NCIDQ, and the Leadership in Energy and Environmental Design, LEED, Green Associate Certification exam.The JCCC Interior Design Program provides relevant curriculum with experiential learning that emphasizes the student's ability to think creatively, critically and collaboratively in preparation of entering professional employment. Theory and application dovetail in the classroom and community, providing exposure to business and industry standards, professional practices, and progressive design opportunities through cultivated industry relationships. 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: 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 (http://www.jccc.edu/academics/arts-design/interior-design)

Associate of Applied Science Degree

First Semester

ITMD 121	Interior Design I	3
DRAF 164	Architectural Drafting/Residential Interior Design	3
MATH 120	Business Mathematics* (or higher)	3
ITMD 132	Materials and Resources	3
ITMD 125	Interior Textiles	3
ENGL 121	Composition I*	3
Total Hours		18

Second Semester

ITMD 271	Budgeting and Estimating*	3
ITMD 202	Interior Design II*	3
ITMD 185	Construction Methods, Building Systems and Regulations for the Interior Designer*	3
ITMD 231	History of Interior Design II	3
DRAF 264	CAD:Interior Design*	3
BUS 150	Business Communications*	3
or PSYC 130	Introduction to Psychology	
Total Hours		18

Third Semester

ITMD 129	Design Communication*	3
ITMD 282	Interiors Internship I*	1
ITMD 215	Environmental Systems for the Interior Designer*	3
ITMD 222	Interior Design III*	3
ITMD 219	Issues in Interior Design*	3
ITMD 230	History of Interior Design I	3
Total Hours		16

Fourth Semester

ITMD 273	Practices and Procedures*	2
ITMD 284	Interiors Internship II*	1
ITMD 239	Capstone: Interior Design*	2
ITMD 224	Interior Design IV*	3
ITMD 280	Leadership in Design*	1
ARTH 180	Art History: Ancient to Renaissance	3
or ARTH 182	Art History: Renaissance to Modern	
ECON 230	Principles of Macroeconomics	3
or ECON 231	Principles of Microeconomics	
Total Hours		15

Total Program Hours: 67

Interior Design: Kitchen and Bath, AAS

The Interior Design Program offers three certificate and three degree options designed to meet the needs of students seeking to become an interior designer, kitchen and bath designer, manager of an interior design firm, or industry specializing-professional among the vast variety of interior design disciplines. Interior Design: Kitchen and Bath AAS degree graduates are qualified to take the Associate Kitchen and Bath Design certification exam, AKBD, after completing one year of work experience. The JCCC Interior Design Program provides relevant curriculum with experiential learning that emphasizes the student's ability to think creatively, critically, and collaboratively in preparation of entering professional employment. Theory and application dovetail in the classroom and community, providing exposure to business and industry standards, professional practices, and progressive

design opportunities through cultivated industry relationships. Two required internships help develop technical, creative and business skills. JCCC's interior design program is recognized by the National Kitchen and Bath Association as an NKBA Accredited program.

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

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

(Major Code 2970; State CIP Code 50.0408)

- Interior Design (http://www.jccc.edu/academics/arts-design/interior-design)

Associate of Applied Science Degree

First Semester

ITMD 121	Interior Design I	3
DRAF 164	Architectural Drafting/Residential Interior Design	3
ITMD 132	Materials and Resources	3
MATH 120	Business Mathematics* (or higher)	3
ITMD 125	Interior Textiles	3
ENGL 121	Composition I*	3
Total Hours		18

Second Semester

ITMD 202	Interior Design II*	3
ITMD 271	Budgeting and Estimating*	3
ITMD 185	Construction Methods, Building Systems and Regulations for the Interior Designer*	3
ITMD 231	History of Interior Design II	3
DRAF 264	CAD:Interior Design*	3
BUS 150	Business Communications*	3
or PSYC 130	Introduction to Psychology	
Total Hours		18

Third Semester

ITMD 129	Design Communication*	3
ITMD 215	Environmental Systems for the Interior Designer*	3
ITMD 222	Interior Design III*	3
ITMD 233	Kitchen and Bath Basics*	3
MKT 134	Professional Selling	3
ITMD 282	Interiors Internship I*	1
Total Hours		16

Fourth Semester

ITMD 273	Practices and Procedures*	2
ITMD 280	Leadership in Design*	1
ARTH 180	Art History: Ancient to Renaissance	3
or ARTH 182	Art History: Renaissance to Modern	
ITMD 284	Interiors Internship II*	1
ITMD 235	Kitchen and Bath Advanced*	3
ITMD 239	Capstone: Interior Design*	2
ECON 230	Principles of Macroeconomics	3
or ECON 231	Principles of Microeconomics	
Total Hours		15

Total Program Hours: 67

Interior Staging Certificate

The interior staging certificate is a 12-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 6530; State CIP Code 50.0408)

- Interior Design (http://www.jccc.edu/academics/arts-design/interior-design)

Required Courses

ITMD 121	Interior Design I	3
ITMD 125	Interior Textiles	3
ITMD 132	Materials and Resources	3
ITMD 231	History of Interior Design II	3
Total Hours		12

Total Program Hours: 12

Interpreter Training

American Sign Language Studies Certificate

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)

- ASL-English Interpreting (http://www.jccc.edu/academics/communications/asl-english-interpreting)
- Gainful Employment Data (http://www.jccc.edu/academics/communications/asl-english-interpreting/gainful-employment/Gedt.html)

First Semester

Health/Physical Education Elective ^		1
ASL 120	Elementary American Sign Language I	3
ASL 145	Introduction to the Deaf Community*	3
ENGL 121	Composition I*	3
Total Hours		10

^   See all general education electives (p. 236)

Second Semester

Social Science or Economics Elective ^		3
ASL 121	Elementary American Sign Language II*	3
ENGL 122	Composition II*	3
Total Hours		9

^   See all general education electives (p. 236)

Third Semester

Math Elective (see list below)		3
ASL 122	Intermediate American Sign Language I*	3
ASL 147	Fingerspelling I*	2
Total Hours		8

Fourth Semester

ASL 123	Intermediate American Sign Language II*	3
ASL 135	Intro to American Sign Language Linguistics*	3
ASL 150	American Sign Language Literature*	3
Total Hours		9

Math Elective

MATH 115	Elementary Algebra*	3
MATH 116	Intermediate Algebra*	3
MATH 118	Geometry*	3
MATH 120	Business Mathematics*	3
MATH 130	Technical Mathematics I*	3
MATH 131	Technical Mathematics II*	3

MATH 165	Finite Mathematics*	3
MATH 171	College Algebra*	3
MATH 172	Trigonometry*	3
MATH 173	Precalculus*	5
MATH 175	Discrete Mathematics and its Applications*	3
MATH 181	Statistics*	3
MATH 231	Business and Applied Calculus I*	3
MATH 232	Business and Applied Calculus II*	3
MATH 241	Calculus I*	5
MATH 242	Calculus II*	5
MATH 243	Calculus III*	5
MATH 254	Differential Equations*	4

Total Program Hours: 36

ASL-English Interpreter Preparation Program, AAS

The employment outlook for American Sign Language/English 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 interpreting 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 216A; State CIP Code 16.1603)

- ASL-English Interpreter Training (http://www.jccc.edu/academics/communications/asl-english-interpreting)

Associate of Applied Science Degree

Prerequisites

ASL 120	Elementary American Sign Language I	0-3
NOTE: Must earn a "B" or higher in ASL 120 or ASL Proficiency Interview		
ASL 121	Elementary American Sign Language II*	0-3
NOTE: Must earn a "B" or higher in ASL 121 or ASL Proficiency Interview		
ENGL 121	Composition I*	3
NOTE: Must earn a "B" or higher in ENGL 121		
Total Hours		3-9

General Education Requirements

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
Total Hours		12

^   See all AAS general education electives (p. 236)

First Semester

INTR 122	Intermediate American Sign Language I*	3
INTR 126	Classifiers in American Sign Language*	2
INTR 130	Survey of the Interpreting Profession*	3
INTR 145	Introduction to the Deaf Community*	3
INTR 147	Fingerspelling I*	2
Total Hours		13

Second Semester

INTR 123	Intermediate American Sign Language II*	3
INTR 131	Interpreting Preparation Skills*	2
INTR 135	Intro to American Sign Language Linguistics*	3
INTR 242	Fingerspelling II*	2
INTR 248	Deaf Community Ethnography*	3
Total Hours		13

Third Semester

INTR 181	Interpreting Practicum I*	1
INTR 223	Advanced American Sign Language*	3
INTR 226	Specialized and Technical Vocabulary*	2
INTR 250	Interpreting I*	6
Total Hours		12

Fourth Semester

INTR 251	Interpreting II*	2
INTR 262	Seminar on Interpreting*	3
INTR 282	Interpreting Practicum II*	6
AAC 150	Job Search Skills	1
Total Hours		12

Total Program Hours: 65-71

Legal Interpreting

Legal Interpreting Certificate

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 their non-dominant language in order to measure knowledge and fluency in both English and Spanish, with a requirement of ACTFL Advanced Mid in Spanish or English for admission to the program.

The LI program is organized as part of the JCCC interpreter training program, although it has its own unique course prefix (LI) and curriculum. Other courses in interpreter training emphasize deaf communication and sign language (ASL/AEIP) as well as health care interpreting (HCI). LI students should enroll only in courses with the LI prefix, plus LAW 121 and ADMJ 121.

Students must earn a grade of "C" or higher in all courses and be able to translate and interpret with at least 80% accuracy before being permitted to enroll in LI 180, the practicum.

(Major Code 5220; State CIP Code 16.0103)

- Spanish-English Interpreting (http://www.jccc.edu/academics/communications/spanish-english-interpreting)
- Gainful Employment Data (http://www.jccc.edu/academics/communications/spanish-english-interpreting/gainful-employment-legal-interpreting/Gedt.html)

Spring Semester

LI 130	Introduction to Legal Interpreting*	3
LI 140	Legal Interpreting Skills I*	3
LAW 121	Introduction to Law	3
Total Hours		9

Fall Semester

LI 150	Legal Interpreting Skills II*	3
LI 160	Spanish Legal Interpreting*	3
Total Hours		6

SpringSemester

ADMJ 121	Introduction to Administration of Justice	3
LI 180	Legal Interpreting Practicum*	2
Total Hours		5

Total Program Hours: 20

Legal Studies

Associate of Arts with Emphasis in Paralegal

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 Jay Nadlman (jnadlman@jccc.edu) for more information.

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

JCCC, as an ABA approved paralegal program, requires its students to take at least ten semester credits through traditional classroom instruction.

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

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 (http://www.jccc.edu/academics/law/paralegal)

Associate of Arts Degree

Prerequisite Semester

ENGL 121	Composition I*	3
LAW 120	Introduction to Paralegal Studies	3
LAW 121	Introduction to Law	3
Total Hours		9

First Semester

LAW 195	Legal Research*	3
SPD 120	Interpersonal Communication	3
or SPD 121	Public Speaking	
or SPD 125	Personal Communication	
Humanities Elective ^		3
Mathematics Electives ^		3
Total Hours		12

^   See all AA general education electives (p. 239)

Second Semester

Paralegal Electives (see below)		3
ENGL 122	Composition II*	3
LAW 134	Introduction to Legal Technology*	3
LAW 132	Civil Litigation*	3
Social Science and/or Economics Electives		3
Total Hours		15

^   See all AA general education electives (p. 239)

Third Semester

LAW 201	Advanced Legal Technology*	3
LAW 205	Legal Analysis and Writing*	3
Humanities Elective ^		3
Science course with lab ^		4
Total Hours		13

^   See all AA general education electives (p. 239)

Fourth Semester

Paralegal Electives (see below)		6
LAW 271	Legal Ethics, Interviewing and Investigation*	3
Science and/or Mathematics Electives ^		2
Social Science and/or Economics Electives ^		3
Total Hours		14

^   See all AA general education electives (p. 239)

Paralegal Electives

LAW 142	Tort Law*	3
LAW 144	Contract Law*	3
LAW 148	Criminal Litigation*	3
LAW 152	Real Estate Law*	3
LAW 162	Family Law*	3
LAW 165	Forensic Science and the Law	3
LAW 226	Immigration Law*	3
LAW 245	Elder Law and Estate Planning*	3
LAW 247	Intellectual Property Law*	3
LAW 266	Employment Law*	3
LAW 269	Bankruptcy Law*	3
LAW 275	Paralegal Internship I*	1
LAW 276	Paralegal Internship II*	1
LAW 292	Special Topics:*	3

Total Program Hours: 63

Paralegal Certificate

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 Jay Nadlman (jnadlman@jccc.edu) for more information.

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

JCCC, as an ABA approved paralegal program, requires its students to take at least ten semester credits through traditional classroom instruction.

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)

- Paralegal (http://www.jccc.edu/academics/law/paralegal)
- Gainful Employment Data (http://www.jccc.edu/academics/law/paralegal/gainful-employment/Gedt.html)

Prerequisite Semester

LAW 120	Introduction to Paralegal Studies	3
LAW 121	Introduction to Law	3
Total Hours		6

First Semester

Paralegal Electives (see list below)		3
LAW 132	Civil Litigation*	3
LAW 134	Introduction to Legal Technology*	3
LAW 195	Legal Research*	3
Total Hours		12

Second Semester

Paralegal Electives (see list below)		3
LAW 201	Advanced Legal Technology*	3
LAW 205	Legal Analysis and Writing*	3
Total Hours		9

Third Semester

Paralegal Electives (see list below)		3
LAW 271	Legal Ethics, Interviewing and Investigation*	3
Total Hours		6

Paralegal Electives

LAW 142	Tort Law*	3
LAW 144	Contract Law*	3
LAW 148	Criminal Litigation*	3
LAW 152	Real Estate Law*	3
LAW 162	Family Law*	3
LAW 165	Forensic Science and the Law	3
LAW 226	Immigration Law*	3
LAW 245	Elder Law and Estate Planning*	3
LAW 247	Intellectual Property Law*	3
LAW 266	Employment Law*	3
LAW 269	Bankruptcy Law*	3
LAW 275	Paralegal Internship I*	1
LAW 276	Paralegal Internship II*	1
LAW 292	Special Topics:*	3

Total Program Hours: 33

Liberal Arts

Liberal Arts, AA

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 a minimum of 63 college-level credit hours, with 30 hours of general education requirements and a minimum of 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.)

Important: Students graduating with an associate of arts 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. A list of **approved cultural diversity courses** can be found in the list of AA general education electives (p. 239).

(Major Code 1000; State CIP Code 24.0101)

Associate of Arts

First Semester

Electives		7
ENGL 121	Composition I*	3
Oral Communication ^		3
Humanities Elective ^		3
Total Hours		16

^   See all AA general education electives (p. 239)

Second Semester

Electives		6
ENGL 122	Composition II*	3
Mathematics Elective ^		3
Social Science Elective ^		3
Total Hours		15

^   See all AA general education electives (p. 239)

Third Semester

Electives	9
Humanities Elective ^	3
Science course with Lab ^	4
Total Hours	16

^   See all AA general education electives (p. 239)

Fourth Semester

Electives	10
Science and/or Mathematics Elective ^	3
Social Science Elective ^	3
Total Hours	16

^   See all AA general education electives (p. 239)

Total Program Hours: 63

Marketing and Management

Marketing Management, AAS

Graduates of JCCC's Marketing Management program are ready for entry-level management or sales positions in retail, wholesale or manufacturing and marketing. 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.

Through marketing management courses 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 digital marketing, 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. By integrating coursework and on-the-job experience, you are given the knowledge, skills and attitudes necessary to reach your marketing career objectives.

(Major Code 2620; State CIP Code 52.1401)

- Marketing and Management (http://www.jccc.edu/academics/business/marketing)

Associate of Applied Science Degree

First Semester

ENGL 121	Composition I*	3
MATH 120	Business Mathematics* (or higher)	3
MKT 134	Professional Selling	3
MKT 230	Marketing	3
BUS 121	Introduction to Business	3
or BUS 141	Principles of Management	
or BUS 140	Principles of Supervision	
CIS/CS/CPCA CDTP Elective		1
Note: CDTP 135 recommended		
Total Hours		16

Second Semester

MKT 121	Retail Management	3
MKT 180	Experiential Marketing	3
MKT 202	Consumer Behavior	3
MKT 205	eMarketing	3
BUS 150	Business Communications*	3
Total Hours		15

Third Semester

MKT 146	Introduction to Social Media Marketing	3
MKT 240	Advertising and Promotion	3
MKT 284	Marketing Management Internship I	1
ACCT 111	Small Business Accounting	3
or ACCT 121	Accounting I	
Humanities Elective^		3
Social Science and/or Economics Elective^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

Fourth Semester

BUS 261	Business Law I*	3
MKT 234	Services Marketing*	3
or MKT 221	Sales Management*	
MKT 275	Marketing Analytics and CRM (Customer Relationship Management)	3
MKT 286	Marketing Management Internship II*	1
or MKT 292	Special Topics:	
MKT 290	Capstone: Marketing Management*	3
WEB 110	HTML and CSS	3
Total Hours		16

Total Program Hours: 63

Retail Sales Representative Certificate

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

(Major Code 5260; State CIP Code 52.1401)

- Gainful Employment - Retail Sales Representative (http://www.jccc.edu/academics/business/marketing/gainful-employment-retail-sales/Gedt.html)
- Marketing and Management (http://www.jccc.edu/academics/business/marketing)

Required Courses

MKT 121	Retail Management	3
MKT 134	Professional Selling	3
MKT 202	Consumer Behavior	3
MKT 230	Marketing	3
MKT 234	Services Marketing*	3
or MKT 205	eMarketing	
MKT 284	Marketing Management Internship I	1
or MKT 292	Special Topics:	
Total Hours		16

Total Program Hours: 16

All 16 credit hours in the retail sales representative certificate program apply to the 31-credit-hour sales and customer relations certificate and the Marketing Management degree.

Sales and Customer Relations Certificate

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

All of the 31 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 52.1401)

- Marketing and Management (http://www.jccc.edu/academics/business/marketing)
- Gainful Employment Data (http://www.jccc.edu/academics/business/marketing/gainful-employment-customer-relations/Gedt.html)

First Semester

MKT 121	Retail Management	3

MKT 134	Professional Selling	3
MKT 202	Consumer Behavior	3
ENGL 121	Composition I*	3
MKT 284	Marketing Management Internship I	1
or MKT 292	Special Topics:	
MKT 205	eMarketing	3
Total Hours		16

Second Semester

BUS 150	Business Communications*	3
MKT 221	Sales Management*	3
MKT 234	Services Marketing*	3
MKT 230	Marketing	3
MKT 275	Marketing Analytics and CRM (Customer Relationship Management)	3
Total Hours		15

Total Program Hours: 31

Medical Information and Revenue Management

Medical Coding Specialist Certificate

The Medical Coding Specialist Certificate is designed to prepare students for employment as medical coders. Medical coders are health information professionals who specialize in analyzing health record documentation and determining diagnoses and procedures required for reporting purposes. Medical codes determined by medical coders are used primarily for reimbursement purposes; however, medical codes are also used for public health, research, operational and organizational planning, and benchmarking purposes in healthcare.

The work of medical coders requires knowledge of biomedical sciences, healthcare delivery, health information technology, and health record documentation. Therefore, the rigor of this certificate provides students challenging curricula in these domains.

Medical coders traditionally work in hospitals, ambulatory healthcare facilities, and physician offices to code records for reimbursement purposes. However, some medical coding professionals use their knowledge and expertise for non-traditional employment opportunities with third-party payers, medical software vendors, and the government (among others).

The healthcare industry depends on highly skilled and knowledgeable professionals in all areas of practice. Therefore, individuals considering a career in medical coding should recognize the importance of earning medical coding credentials after completion of this certificate program. Credentialing in healthcare is often required for employment, demonstrates professional competence, and illustrates commitment to one's profession. Successful completion of this program prepares students to sit for either the Certified Coding Associate (CCA) credentialing examination offered by the American Health Information Management Association and/or the Certified Professional Coder (CPC) and/or Certified Professional Coder-Hospital Outpatient (CPC-H) credentialing examination offered by the American Academy of Professional Coders.

(Major Code 4660; State CIP Code 51.0713)

- Medical Information and Revenue Management (http://www.jccc.edu/academics/computers/medical-information-revenue-management)
- Gainful Employment Data (http://www.jccc.edu/academics/computers/medical-information-revenue-management/gainful-employment/Gedt.html)

First Semester

MIRM 140	Fundamentals of Health Records	2
MATH 116	Intermediate Algebra* (or higher) (Note: Students planning to pursue undergraduate degrees in health information management or healthcare administration should take MATH 171 College Algebra.)	3
HCIS 255	Technology Concepts in Healthcare	2
HC 130	Medical Terminology for Healthcare Professions	3
BIOL 144	Human Anatomy and Physiology*	5
Total Hours		15

Second Semester

HCIS 271	The Culture of Healthcare	2
MIRM 143	Coding Classification Systems I*	3
MIRM 141	Computer Systems for Health Information Management Professionals*	3
MIRM 142	Legal and Ethical Issues in Healthcare	3
ENGL 121	Composition I*	3
Total Hours		14

Third Semester

BIOL 227	Human Pathophysiology*	4
MIRM 145	Reimbursement Methodologies*	3
MIRM 147	Introduction to Pharmacology*	2
MIRM 144	Coding Classification Systems II* (Note: Students are recommended to concurrently enroll in BIOL 227)	3
Total Hours		12

Fourth Semester

MIRM 146	Coding Classification Systems III*	3

MIRM 148	Medical Coding Internship* (Note: Students must complete all other required certificate coursework with a "C" or higher grade to enroll in this course.)	1
Total Hours		4

Total Program Hours: 45

Metal Fabrication/Welding

Metal Fabrication/Welding Technology, AAS

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)

- Welding (Metal Fabrication) (http://www.jccc.edu/academics/industrial-technology/welding)

Associate of Applied Science Degree

First Semester

MFAB 180	Blueprint and Symbols Reading for Welders	2
MFAB 124	Introduction to Welding	3
MFAB 240	Metallurgy	2
MATH 130	Technical Mathematics I* (or higher)	3
ENGL 121	Composition I*	3
MFAB 128	Basic Machine Tool Technology	3
Total Hours		16

Second Semester

MFAB 131	Shielded Metal Arc Welding (SMAW) I*	3
MFAB 133	Gas Metal Arc Welding (GMAW) I*	3
MFAB 136	Gas Tungsten Arc Welding (GTAW) I*	3
ENGL 123	Technical Writing I*	3
HPER 200	First Aid and CPR	2
Social Science Elective ^		3
Total Hours		17

^   See all AAS general education electives (p. 236)

Third Semester (Structural Option)

MFAB 205	Shielded Metal Arc Welding (SMAW) II*	3
MFAB 210	Gas Metal Arc Welding (GMAW) II*	3
MFAB 215	Fabrication Practices I*	3
INDT 155	Workplace Skills	1
MFAB 220	Flux Core Arc Welding (FCAW)*	3
INDT 125	Industrial Safety/OSHA 30	3
Total Hours		16

Third Semester (Manufacturing Option)

MFAB 205	Shielded Metal Arc Welding (SMAW) II*	3
MFAB 210	Gas Metal Arc Welding (GMAW) II*	3
MFAB 255	Advanced Machine Tool Technology*	3
INDT 155	Workplace Skills	1
MFAB 241	Gas Tungsten Arc Welding (GTAW) II*	3
INDT 125	Industrial Safety/OSHA 30	3
Total Hours		16

Fourth Semester (Structural Option)

Related Electives (see below)		6
Note: INDT 150 is strongly recommended as an elective		
MFAB 259	Shielded Metal Arc Welding (SMAW) III*	3
MFAB 250	Fabrication Practices II*	3
Humanities Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Fourth Semester (Manufacturing Option)

Related Electives (see below)		6
Note: INDT 150 is strongly recommended as an elective		
MFAB 152	Manufacturing Materials and Processes	3
MFAB 140	Maintenance Repair Welding*	3
Humanities Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Related Electives

AET 140	Actuator and Sensor Systems*	3
AET 160	Programmable Logic Controllers I*	3
AUTO 121	Small Engine Service	3
BUS 120	Management Attitudes and Motivation	3
BUS 140	Principles of Supervision	3
BUS 145	Small Business Management	3
ENTR 142	Fast Trac Business Plan	3
CET 105	Construction Methods	3
CIS 124	Introduction to Computer Concepts and Applications	3
HVAC 167	Sheet Metal Layout and Fabrication	3
INDT 150	Construction Safety/OSHA 30	3
MATH 131	Technical Mathematics II*	3
MFAB 140	Maintenance Repair Welding*	3
MFAB 152	Manufacturing Materials and Processes	3
MFAB 203	Introduction to Ornamental Iron*	3
MFAB 215	Fabrication Practices I*	3
MFAB 220	Flux Core Arc Welding (FCAW)*	3
MFAB 241	Gas Tungsten Arc Welding (GTAW) II*	3
MFAB 250	Fabrication Practices II*	3
MFAB 255	Advanced Machine Tool Technology*	3
MFAB 259	Shielded Metal Arc Welding (SMAW) III*	3
MFAB 271	Metal Fabrication Internship*	3

Total Program Hours: 64

Metal Fabrication/Welding Certificate

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)

- Welding (Metal Fabrication) (http://www.jccc.edu/academics/industrial-technology/welding)
- Gainful Employment Data (http://www.jccc.edu/academics/industrial-technology/welding/gainful-employment/Gedt.html)

First Semester

INDT 125	Industrial Safety/OSHA 30	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 Hours		11

Second Semester

MFAB 131	Shielded Metal Arc Welding (SMAW) I*	3
MFAB 133	Gas Metal Arc Welding (GMAW) I*	3
MFAB 136	Gas Tungsten Arc Welding (GTAW) I*	3
Total Hours		9

Third Semester

MFAB 205	Shielded Metal Arc Welding (SMAW) II*	3
MFAB 210	Gas Metal Arc Welding (GMAW) II*	3
MFAB 220	Flux Core Arc Welding (FCAW)*	3
Total Hours		9

Total Program Hours: 29

Neurodiagnostic Technology

Neurodiagnostic Technology, AAS

This program prepares the students as an entry level neurodiagnostic technologist. In the classroom setting the students will explore anatomy, physiology and pathophysiology of neuroscience, legal and ethical concepts of healthcare, safe and effective care environment, and professional standard of practice in preparation for their clinical experience and career.

Throughout the program in a patient-centered care setting the students collaborate as a member of the health care team, integrate latest research into practice, apply a variety of methods to communicate effectively, utilize critical thinking skills to ensure safe environment for patients, evaluate neurodiagnostic tests and practice within the ethical and legal realm of the neurodiagnostic profession.

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.

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

Neurodiagnostic Technology (http://www.jccc.edu/academics/health/neurodiagnostic-technology)

(Major Code 207A; State CIP Code 51.0903)

Associate of Applied Science Degree

Prior to beginning professional courses:

ENGL 121	Composition I*	3
BIOL 144	Human Anatomy and Physiology*	5
Humanities/Art Elective ^		3
Math or Science Elective ^		3
Social Science/Economics Elective ^		3
Total Hours		17

^   See all AAS general education electives (p. 236)

First Semester

EMS 121	CPR I - Basic Life Support for Healthcare Provider	1
NDT 125	Introduction to Neurodiagnostic Technology*	4
NDT 130	Foundations of Neurodiagnostic Technology*	3
NDT 135	Pediatric Neurodiagnostic Technology I*	5
Total Hours		13

Second Semester

NDT 140	Adult Neurodiagnostic Technology I*	4
NDT 145	Pediatric Neurodiagnostic Technology II*	4
NDT 150	Neurodiagnostic Clinical Correlates*	2
NDT 155	Neurodiagnostic Clinical I*	4
Total Hours		14

Third Semester

NDT 225	Polysomnography*	5
NDT 230	Adult Neurodiagnostic Technology II*	3
NDT 240	Neurodiagnostic Clinical II*	4
Total Hours		12

Fourth Semester

NDT 245	Neurodiagnostic Related Modalities*	3
NDT 250	Neurodiagnostic Program Capstone*	3

NDT 255	Polysomnography Clinical*	6
Total Hours		12

Total Program Hours: 68

Nursing

Nursing - Registered Nurse, AAS

Nursing is a rewarding and challenging career with an optimistic employment future. JCCC's registered nurse program is fully accredited by the Accreditation Commission for Education in Nursing (ACEN) 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.

The nursing program is a selective admission program with limited enrollment. Prospective students are encouraged to attend group information sessions (http://www.jccc.edu/academics/health/registered-nurse/nursing-information-sessions.html). Visit the program website or contact JCCC Program personnel for additional information and application materials at 913-469-3157.

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

LPN to RN Bridge:

The LPN to RN bridge option provides those licensed practical nurses wanting to become registered nurses the opportunity to do so. Admission to the registered nursing program is based on a selective admission process. LPN to RN Transition students are required to complete the prerequisite and general education courses of the first two semesters of the nursing program before taking NURS 125 Health Assessment in Nursing and NURS 175 Concepts of Nursing Care: PN to RN Transition courses in the summer semester prior to the second year of the program. Successful completion of (those two courses) is required before advanced standing credits for NURS 100 Concepts of Nursing Care: Foundations and NURS 150 Concepts of Nursing Care: Childbearing Family and Children will be granted. LPN students should contact the nursing program for details.

(Major Code 235A; State CIP Code 51.3801)

- Registered Nurse (RN) (http://www.jccc.edu/academics/health/registered-nurse)

Associate of Applied Science Degree

Note: Current Kansas CNA certification is required for application to the nursing program. Current AHA Health Care Providers CPR Certification (may be satisfied with EMS 121) is required to be completed *prior to starting* the nursing program.

Program Prerequisites

MATH 171	College Algebra* (or higher)	3
BIOL 144	Human Anatomy and Physiology*	5
Note: BIOL 140 and BIOL 225 will satisfy the BIOL 144 requirement.		
ENGL 121	Composition I*	3
PSYC 130	Introduction to Psychology	3
Total Hours		14

First Semester

NURS 100	Concepts of Nursing Care: Foundations*	8
NURS 125	Health Assessment in Nursing*	3
BIOL 227	Human Pathophysiology*	4
Total Hours		15

Second Semester

NURS 150	Concepts of Nursing Care: Childbearing Family and Children*	8
PSYC 218	Human Development*	3
Total Hours		11

Third Semester

NURS 200	Concepts of Nursing Care: Adult Health Alterations*	10
Communications Elective ^		3
Note: ENGL 122 is recommended		
Total Hours		**13**

^   See all AAS general education electives (p. 236)

Fourth Semester

NURS 225	Concepts of Nursing Care: Complex Patient Care Management*	10
Humanities Elective ^		3
Total Hours		**13**

^   See all AAS general education electives (p. 236)

Total Program Hours 66

Practical Nursing Certificate

The health care industry needs informed, skilled and dependable workers to complete the care team. The licensed practical nurse assists registered nurses and physicians in caring for physically or mentally ill clients. In the long-term care setting and home health, the LPN may supervise other nursing care personnel.

Practical nursing offers employment in many health care settings. Long-term care, physicians' offices, home care, hospitals and clinics provide opportunity for the practical nurse to administer care to a variety of clients.

Job outlook for the Kansas City area is good, with an average starting salary of $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.

Full-time option

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. As sample course of study is below.

The application deadline is March 15th for every year and has an August start date. See admission requirements (http://www.jccc.edu/admissions/apply/selective-admissions/lpn).

Evening-weekend option

The evening-weekend program, which can be completed in 19 months, provides approximately 880 clock hours of instruction. This includes classroom and clinical laboratory experiences in many areas of nursing.

See sample course of study for the evening-weekend option. (http://www.jccc.edu/academics/health/licensed-practical-nurse/lpn-evening-weekend.html)

The application deadline is October 15th every year and has a January start date. See admission requirements (http://www.jccc.edu/admissions/apply/selective-admissions/lpn).

Prerequisites BEFORE Beginning Professional Courses

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

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

(Major Code 366A/368A; State CIP Code 51.3901)

- Licensed Practical Nurse (http://www.jccc.edu/academics/health/licensed-practical-nurse)
- Gainful Employment Data (http://www.jccc.edu/academics/health/licensed-practical-nurse/gainful-employment/Gedt.html)

Prerequisite Courses

BIOL 144	Human Anatomy and Physiology*	5-8

or BIOL 140	Human Anatomy	
& BIOL 225	and Human Physiology*	
PSYC 130	Introduction to Psychology	3
PSYC 218	Human Development*	3
Total Hours		11-14

First Semester

PN 125	KSPN Foundations of Nursing*	4
PN 126	KSPN Foundations of Nursing Clinical*	2
PN 130	KSPN Medical Surgical Nursing I*	4
PN 131	KSPN Medical Surgical Nursing I Clinical*	3
PN 135	KSPN Pharmacology*	3
PN 155	KSPN Gerontology Nursing*	2
Total Hours		18

Second Semester

PN 140	KSPN Maternal Child Nursing*	2
PN 141	KSPN Maternal Child Clinical*	1
PN 145	KSPN Mental Health Nursing*	2
PN 146	Mental Health Nursing Clinical*	1
PN 150	KSPN Medical Surgical Nursing II*	4
PN 151	KSPN Medical Surgical Nursing II Clinical*	3
PN 170	Physical Assessment for the Practical Nurse*	3
Total Hours		16

Total Program Hours: 45-48

Railroad Electronics

Railroad Electronics Certificate

This certificate is a comprehensive program of study that covers the fundamental electronic principles used by railroad signal control systems technicians. Upon successful completion of this program, the student should be able to apply basic digital and analog theory required in the maintenance of right-of-way crossing and train control systems.

Enrollment in the program is subject to the approval of the BNSF training director and JCCC division administrator.

(Major Code 4540; State CIP Code 49.0208)

- Railroad Science (http://www.jccc.edu/academics/transportation/railroad)

Required Courses

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

Total Program Hours: 33

Railroad Electronics, AAS

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, tect, 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 devises used extensively in railroad signaling, circuit analysis and digital electronics and will provide a broad systems view of electronics.

Students in 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.

(Major Code 2820; State CIP Code 49.0208)

- Railroad Science (http://www.jccc.edu/academics/transportation/railroad)

Associate of Applied Science Degree

First Semester

Technical Electives (see below)		3
RREL 180	Introduction to Railroad Electronics*	1
RREL 181	Circuit Analysis DC/AC*	6
ENGL 121	Composition I*	3

Science and/or Mathematics Elective ^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

Second Semester

RREL 182	Semiconductor Devices and Circuits*	6
RREL 183	Digital Techniques*	6
Humanities Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Third Semester

Technical Electives (see below)		6
RREL 284	Electronic Communications*	6
Social Science/Economics Elective ^		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Fourth Semester

Technical Electives (see below)		6
RREL 285	Microprocessor Techniques*	6
RREL 286	Applied Microprocessors*	2
Communications Elective ^		3
Total Hours		17

^   See all AAS general education electives (p. 236)

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

Technical Electives

AET 140	Actuator and Sensor Systems*	3
AET 160	Programmable Logic Controllers I*	3
ASTR 120	Fundamentals of Astronomy	3
AUTO 121	Small Engine Service	3
AUTO 122	Introduction to Automotive Glass	3
AUTO 125	Introduction to Automotive Shop Practices	3
BOT 101	Computerized Keyboarding	1
BOT 103	Business English	3
BOT 105	Keyboarding and Formatting I	3
BOT 115	Electronic Calculators	1
BOT 150	Records Management*	3
CET 105	Construction Methods	3
CET 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
DRAF 120	Introduction to Drafting	2
CS 134	Programming Fundamentals	4
DRAF 123	Interpreting Machine Drawings*	2
DRAF 129	Interpreting Architectural Drawings	2

DRAF 132	Exploring AutoCAD	3
DRAF 140	Topics in CAD I:	2
DRAF 238	Architectural Design and Drafting*	3
ELEC 120	Introduction to Electronics	3
ELEC 125	Digital Electronics I	4
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 167	Sheet Metal Layout and Fabrication	3
INDT 125	Industrial Safety/OSHA 30	3
INDT 155	Workplace Skills	1
IT 205	Implementing Windows Client	3
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: 63

Railroad Industrial Technology

Railroad Structural Welding Certificate

JCCC's railroad industrial technology certificate program is OPEN ONLY TO BNSF RAILWAY EMPLOYEES.

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

This certificate is designed to address the training needs for railway structural welders. Upon successful completion of this program, you should be able to demonstrate safe operating procedures for welding applications, perform skill competencies involving a variety of processes and positions, pass code welding requirements according to AWS D1.5, and perform welding operations as needed.

(Major Code 4530; State CIP Code 49.0208)

- Railroad Science (http://www.jccc.edu/academics/transportation/railroad)

Required Courses

RRIT 124	Fast Track Elements and Basic Welding	3
RRIT 137	Structural Welding SMAW*	3
RRIT 138	Structural Welding FCAW*	3
RRIT 142	Structural Pile Welding*	3
Total Hours		12

Total Program Hours: 12

Railroad Track Welding Certificate

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

This certificate is designed to provide a concentrated program for industry-specific training in track maintenance and repairs. Upon successful completion of this program, you should have the ability to safely operate track welding equipment, perform basic and advanced welding operations, and complete specialized procedures as needed to perform the job of railway track welder.

(Major Code 4520; State CIP Code 49.0208)

- Railroad Science (http://www.jccc.edu/academics/transportation/railroad)

Required Courses

RRIT 124	Fast Track Elements and Basic Welding	3
RRIT 132	Thermite Welding*	3
RRIT 136	Rail and Switch Point Repair Welding*	3
RRIT 145	Frog Welding*	3
Total Hours		12

Total Program Hours: 12

Railroad Operations

Railroad Operations, AAS

The JCCC associate's degree program in Railroad Operations prepares the students with the foundational information and skills needed to serve in the railway industry. The program will focus on the safe and proper procedures needing to be followed in the following career fields: carman, machinists, welders, conductors, or signal maintainers.

For more information visit the National Academy of Railroad Sciences (http://www.railroadtraining.com). Interested students should meet with a JCCC counselor as early as possible.

(Major Code 2980; State CIP Code 49.0208)

Railroad Science (http://www.jccc.edu/academics/transportation/railroad)

Associate of Applied Science Degree

General Education Requirements

ENGL 121	Composition I*	3
Communications Elective		3
Humanities Elective		3
Social Science and/or Economics Elective		3
Science and/or Math Elective		3
Total Hours		15

^   See all AAS general education electives (p. 236)

Railroad Core Requirements

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
INDT 125	Industrial Safety/OSHA 30	3
or INDT 150	Construction Safety/OSHA 30	
Total Hours		15
Railroad Technical Electives		11
NOTE: Railroad Technical electives are any course with RREL, RRIT, RRTC, RRTM prefix.		
Business Related Electives		12
NOTE: Business electives are any course with BUS, MKT, CPCA prefix.		
Electives		10
Total Hours		33

Total Program Hours: 63

Railroad Conductor Certificate

The 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.

- Railroad Science (http://www.jccc.edu/academics/transportation/railroad)

(Major Code 4410; State CIP Code 49.0208)

Required Courses

RRTC 123	Introduction to Conductor Service*	4

RRTC 175	Conductor Mechanical Operation*	2
RRTC 261	Conductor Service*	2
RRTC 263	General Code of Operating Rules*	4
RRTC 267	Conductor Field Application*	4
INDT 155	Workplace Skills	1
Total Hours		17

Total Program Hours: 17

Railroad Freight Car Certificate

This eleven-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.

- Railroad Science (http://www.jccc.edu/academics/transportation/railroad)

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

(Major Code 4360; State CIP Code 49.0208)

Required Courses

RRTM 130	Freight Car Yard Inspection*	3
RRTM 131	Freight Car Repair Track Inspector*	3
RRTM 152	Freight Car Air Brakes, Basic*	2
RRIT 124	Fast Track Elements and Basic Welding	3
Total Hours		11

Total Program Hours: 11

Railroad Signal Certificate

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.

- Railroad Science (http://www.jccc.edu/academics/transportation/railroad)

(Major Code 5300; State CIP Code 49.0208)

Required Courses

RREL 110	Introduction to Railroad Signal Systems*	4
RREL 112	Track Circuits and Systems*	4
RREL 114	Traffic Control, Switch Machines Locks*	4
RREL 116	Interlocking, Classification, Crossings Gates*	4
Total Hours		16

Total Program Hours: 16

Recording Arts

Recording Arts Certificate

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.

- Music (http://www.jccc.edu/academics/arts-design/music)

(Major Code 5090; State CIP Code 24.0101)

First Semester

MUS 156	MIDI Music Composition	2-3
or MUS 155	Introduction to the Recording Studio	
Total Hours		2-3

Second Semester

MUS 157	Introduction to Digital Audio*	3
Total Hours		3

Third Semester

MUS 158	Recording Studio I*	4
Total Hours		4

Fourth Semester

MUS 159	Recording Studio II*	4
Total Hours		4

Total Program Hours: 13-14

384   *Respiratory Care*

Respiratory Care

Respiratory Care, AAS

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 (http://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.

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.

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 (http://www.jccc.edu/academics/health/respiratory-care)

Prerequisite Semester

CHEM 122	Principles of Chemistry*	5
BIOL 144	Human Anatomy and Physiology*	5
ENGL 121	Composition I*	3
Total Hours		13

First Semester

RC 120	Respiratory Structure and Function*	2
RC 124	Fundamentals of Respiratory Care*	6
RC 131	Cardiopulmonary Diagnostics*	3
BIOL 230	Microbiology*	3
Total Hours		14

Second Semester

RC 136	Cardiopulmonary Diseases*	3
RC 140	Respiratory Care Pharmacology*	2
RC 145	Cardiopulmonary Critical Care I*	5
RC 146	Pediatric/Neonatal Respiratory Care*	2
Total Hours		12

Third Semester

RC 255	Cardiopulmonary Critical Care II*	5
RC 271	Respiratory Care Clinical Experience I*	6
Social Science and/or Econoomics Elective		3
Total Hours		14

^   See all AAS general education electives (p. 236)

Fourth Semester

RC 272	Respiratory Care Clinical Experience II*	6
RC 265	Respiratory Care Program Capstone*	3

Humanities/Art Elective	3
Total Hours	12

^   See all AAS general education electives (p. 236)

Total Program Hours: 65

Sustainable Agriculture

Sustainable Agriculture Certificate

A one-year certificate in Sustainable Agriculture, Market Farming introduces basic principles and hands on experience in production and direct marketing of locally grown food. Experiential and classroom learning will focus on principles of environmental, economic, and social sustainability emphasized through practicum courses, numerous field trips, guest lectures, and engagement with local farming and food communities. Students will be prepared for beginning occupations in sustainable market farming, ecological farm management, local food policy or advocacy organizations, produce management, school garden management, or related fields.

(Major Code 5290; State CIP Code 01.0308)

- Sustainable Agriculture (http://www.jccc.edu/academics/agriculture/sustainable-agriculture)

Fall Semester

Program Electives (see list below)		3
SAG 245	Principles of Sustainable Market Farming	3
SAG 272	Sustainable Agriculture Fall Practicum	2
HMGT 167	Local Food Production	3
HORT 255	Pest Control Management	3
Total Hours		14

Spring Semester

Program Electives (see list below)		3
HMGT 165	Food Industry Compliance Safety	3
HORT 260	Horticulture Soils	3
SAG 274	Sustainable Agriculture Spring Practicum	2
Total Hours		11

Summer Semester

SAG 276	Sustainable Agriculture Summer Practicum	2
Total Hours		2

Program Electives

BIOL 130	Environmental Science	3
BIOL 131	Environmental Science Lab*	1
BIOL 134	Principles of Sustainability	3
ENTR 142	Fast Trac Business Plan	3
FL 135	Basic Spanish for Hospitality Management	3
HORT 165	Arboriculture	3
HORT 201	Introduction to Horticultural Science	4
PHIL 128	Environmental Ethics	3
SOC 205	Sociology of Food	3

Total Program Hours: 27

Web Technologies

Digital Media Certificate

The Digital Media 30-credit hour certificate offers students foundational knowledge applicable to a wide range of current media-related professions. This certificate is intended for individuals who would like to gain knowledge and training through content creation courses in hands-on labs. The program is ideal for participants seeking to build digital media production skills. Upon completion of the certificate, students may enter the workforce in the field of digital media content creation. With one more year of study students can complete their Web Development and Digital Media Associate of Applied Science degree.

(Major Code 6770; State CIP Code 11.0801)

- Web Development & Digital Media (http://www.jccc.edu/academics/computers/web-development-digital-media)

First Semester

WEB 110	HTML and CSS	3
WEB 112	Professional Skills for the Digital Developer	3
WEB 114	Web Scripting: JavaScript I*	2
WEB 116	Digital Media Concepts*	2
ENGL 121	Composition I*	3
IT 120	CompTIA A+ Practical Applications	3
Total Hours		16

Second Semester

WEB 120	Web Analytics* (Web Analytics)	3
WEB 121	Digital Media Assets*	4
WEB 123	Content Management Systems Strategies*	1
WEB 124	Web Scripting: JavaScript II*	2
WEB 125	Digital Video Tools	1
WEB 126	Technical Interface Skills* (Technical Interface Skills)	3
Total Hours		14

Total Program Hours: 30

Web Development and Digital Media, AAS

The Web Development and Digital Media 63-credit hour Associate of Applied Science degree is designed for students who wish to pursue careers in web development and digital media. This program teaches technologies and techniques involved in designing and developing web sites, web applications, user experiences and digital content necessary to capture audiences in our increasingly mobile world. The degree is designed to enhance skills and help students discover the specific discipline that best suits their talents and interests. The degree offers an exciting variety of course options in a hands-on learning environment. Students have access to state-of-the-art computer and production labs. Course work includes analysis of real world case studies and hands-on projects that allow students to apply the concepts and skills they have learned to realistic business situations. Students are prepared for a variety of positions as web developers, web designers, user experience developers, digital media specialists.

(Major Code 2030; State CIP Code 11.0801)

- Web Development & Digital Media (http://www.jccc.edu/academics/computers/web-development-digital-media)

Associate of Applied Science Degree

First Semester

WEB 110	HTML and CSS	3
WEB 112	Professional Skills for the Digital Developer	3
WEB 114	Web Scripting: JavaScript I*	2
WEB 116	Digital Media Concepts*	2
ENGL 121	Composition I*	3

IT 120	CompTIA A+ Practical Applications	3
Total Hours		16

Second Semester (Web Development Option)

WEB 120	Web Analytics*	3
WEB 122	CSS Techniques Projects*	3
WEB 124	Web Scripting: JavaScript II*	2
WEB 126	Technical Interface Skills*	3
WEB 128	Server Scripting: PHP with MySQL*	2
WEB 230	Asynchronous JavaScript and XML*	1
Total Hours		14

Second Semester (Digital Media Option)

WEB 120	Web Analytics*	3
WEB 121	Digital Media Assets*	4
WEB 123	Content Management Systems Strategies*	1
WEB 124	Web Scripting: JavaScript II*	2
WEB 125	Digital Video Tools	1
WEB 126	Technical Interface Skills*	3
Total Hours		14

Third Semester (Web Development Option)

WEB 232	Introduction to eXtensible Markup Language*	3
or WEB 234	Web Apps I*	
WEB 236	Content Management Systems Development*	3
WEB 238	Interactive Scripting: JQuery*	4
Humanities Elective ^		3
Science or Math Elective ^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

Third Semester (Digital Media Option)

WEB 231	Experience Design*	4
WEB 233	Visual Storytelling*	3
WEB 235	Digital Communications Technologies*	3
Humanities Elective ^		3
Science or Math Elective ^		3
Total Hours		16

^   See all AAS general education electives (p. 236)

Fourth Semester (Web Development Option)

Program Electives		5
NOTE: Program electives are any courses with WEB, CPCA, CDTP, CS, CIS, IT, GAME, ANI or HCIS prefix.		
WEB 240	HTML and CSS II*	3
or WEB 244	Web Apps II*	
WEB 290	Web Development and Digital Media Capstone*	3
ENGL 140	Writing for Interactive Media*	3
Social Science and/or Economics Elective ^		3
Total Hours		17

^   See all AAS general education electives (p. 236)

Fourth Semester (Digital Media Option)

Program Electives		2
NOTE: Program electives are any courses with WEB, CPCA, CDTP, CS, CIS, IT, GAME, ANI or HCIS prefix.		
WEB 241	Digital Management Methods*	4
WEB 243	Search Engine Optimization*	1
WEB 245	Motion Graphics Tools*	1
WEB 290	Web Development and Digital Media Capstone*	3
ENGL 140	Writing for Interactive Media*	3
Social Science and/or Economics Elective ^		3
Total Hours		17

^   See all AAS general education electives (p. 236)

Total Program Hours: 63

Web Development Certificate

The Web Development 30-credit hour certificate prepares students for careers as professional web developers. This certificate goes deeper into the technical aspects of web development. Students learn strategies for making effective use of the web by building, designing and programming web pages and maintaining sites to meet business needs. Upon completion of this certificate, students may enter the workforce in the field of web development. With one more year of study, students can complete their Web Development and Digital Media Associate of Applied Science degree.

(Major Code 6780; State CIP Code 11.0801)

- Web Development & Digital Media (http://www.jccc.edu/academics/computers/web-development-digital-media)

First Semester

WEB 110	HTML and CSS	3
WEB 112	Professional Skills for the Digital Developer	3
WEB 114	Web Scripting: JavaScript I*	2
WEB 116	Digital Media Concepts*	2
ENGL 121	Composition I*	3
IT 120	CompTIA A+ Practical Applications	3
Total Hours		16

Second Semester

WEB 120	Web Analytics* (Web Analytics)	3
WEB 122	CSS Techniques Projects* (CSS Techniques and Projects)	3
WEB 124	Web Scripting: JavaScript II*	2
WEB 126	Technical Interface Skills* (Technical Interface Skills)	3
WEB 128	Server Scripting: PHP with MySQL*	2
WEB 230	Asynchronous JavaScript and XML*	1
Total Hours		14

Total Program Hours: 30

Web Technologies Certificate

The Web Technologies 16-credit hour certificate is designed as a starting point for students to pursue a career in a web-related field. The certificate provides foundational technical skills needed to prepare them for a career in a web-related occupation. Students learn how to combine critical thinking with appropriate methodology to create and maintain web pages. This certificate exclusively emphasizes technical course work. Upon completion of the certificate, students may enter the workforce in an entry level web development position or continue their studies.

(Major Code 6760; State CIP Code 11.0801)

- Web Development & Digital Media (http://www.jccc.edu/academics/computers/web-development-digital-media)

Required Courses

WEB 110	HTML and CSS	3
WEB 112	Professional Skills for the Digital Developer	3
WEB 114	Web Scripting: JavaScript I*	2
WEB 116	Digital Media Concepts*	2
ENGL 121	Composition I*	3
IT 120	CompTIA A+ Practical Applications	3
Total Hours		16

Total Program Hours: 16

Accreditation

Johnson County Community College is accredited by The Higher Learning Commission (http://www.hlcommission.org), (312) 263-0456 (see also Academic Quality Improvement Program (http://www.jccc.edu/about/story/facts/accreditation-aqip.html) [AQIP]). 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
- ASL-English Interpreter Preparation – Commission on Collegiate Interpreter Education
- Automotive Technology – National Automotive Technicians Education Foundation (NATEF), Master Automobile Service Technician
- College Now - National Alliance of Concurrent Enrollment Partnerships (NACEP)
- Dental Hygiene - American Dental Association Commission on Dental Accreditation (CODA)
- Dietary Manager – Association of Nutrition & Foodservice Professionals
- Fire Service Administration - International Fire Service Accreditation Congress (IFSAC)
- Heating, Ventilation and Air-Conditioning – Partnership for Air-Conditioning, Heating, Refrigeration Accreditation (PAHRA), Residential Heating and Air-Conditioning
- Hospitality Food and Beverage and Chef Apprentice - American Culinary Federation
- Interior Design – National Kitchen and Bath Association
- Nursing - Kansas State Board of Nursing and Accreditation Commission for Education in Nursing, Inc.
- Paralegal - Approved by the American Bar Association
- Paramedic – Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP)
- Police Academy - University of Kansas
- Practical Nursing - Approved by the Kansas State Board of Nursing
- Respiratory Care - Commission on Accreditation for Respiratory Care (CoARC)

Accessibility

JCCC provides a range of services to allow persons with disabilities to participate in educational programs and activities. If you are a student with a disability and if you are in need of accommodations or services, it is your responsibility to contact Access Services and make a formal request. To schedule an appointment with an Access Advisor or for additional information, you may send an email or call Access Services at (913)469-3521. Access Services is located on the 2nd floor of the Student Center (SC 202).

Access Services (http://www.jccc.edu/student-resources/tutors-accessibility/access-services) - services for students with disabilities

Americans with Disabilities Act (ADA) Information (http://www.jccc.edu/about/leadership-governance/administration/human-resources/employee-benefits-leaves/ada.html) - information for current and prospective employees

Website Accessibility (http://www.jccc.edu/about/leadership-governance/policies/web-accessibiity.html) - Web publishing guidelines and accessibility at JCCC

Nondiscrimination Statement

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, genetic information, marital status, national origin, disability, veteran's status, sexual orientation or other factors which can not be lawfully considered, to the extent specified by applicable federal and state laws.

Johnson County Community College does not discriminate on the basis of sex, race, color, national origin, disability, age, religion, genetic information, 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 Success or Executive Director of Human Resources, Johnson County Community College, 12345 College Blvd, Overland Park, KS 66210, 913-469-8500Call: 913-469-8500; or to Office for Civil Rights, Kansas City Office, U.S. Department of Education, One Petticoat Lane, 1010 Walnut Street, Suite 452, Kansas City, MO 64106, Telephone: 816-268-0404, Facsimile: 816-268-0559Call: 816-268-0559, email OCR.

Ethics Report Line (http://www.jccc.edu/about/leadership-governance/administration/audit-advisory/ethics-line) - A resource for college employees to report ethical issues in confidence.

College Policies (http://www.jccc.edu/about/leadership-governance/policies) - A detailed list of policies approved by the JCCC board of trustees.

Faculty and Staff

A

John Addessi
Consultant SBDC
BA University of Rhode Island
MBA University of Rhode Island

Edward Adel
Assoc. Prof. Hospitality Mgmt.
AAS Johnson County Comm College

Solomon Aga
Custodian

Jacob Akehurst
Prog. Dir., Cont. Educ.
BS Northwest Missouri State Univ
MA Emporia State University

Mazen Akkam
Professor Info. Technology
BS Kansas State University
MS Kansas State University

Akram Al-Rawi
Assoc. Prof. Info. Technology
MS Univ of Missouri - Columbia

Robyn Albano
Interior Srvcs Coor/Space Plnr
BS Univ of Nebraska - Lincoln

Daniel Alexander
Professor English
BA Oklahoma State University
MA Oklahoma State University

Fikru Aligaz
Day Custodial Supervisor

Natalie Alleman Beyers
Dir. Inst. Planning Research
BA Univ of Missouri - Kansas City
MA Univ of Missouri - Kansas City

Jeffrey Allen
Dir. Campus Svcs Energy Mgmt
BBS Emporia State University

Katherine Allen
AVP, Inst Adv/Gov Affairs
BA Univ of Nebraska - Lincoln
JD University of Kansas
MA Univ of Nebraska - Lincoln

Luz Alvarez
Professor Foreign Language
MA University of Kansas
SPC University of Kansas

Jeffrey Anderson
Counselor
BA University of Northern Iowa
MA University of Northern Iowa

Rebecca Anderson
Professor Speech
BS Missouri State University
MA Missouri State University

James Antle
Professor/Exec Dir Sustain
AA Lee College
BA Angelo State University
MA Arizona State University
PHD University of Kansas

Krystal Anton
Rcyclng/Waste Minimiz. Coor.
BS Univ of Missouri - Kansas City

Dennis Arjo
Professor Phil. Religion
BA University of California
MA University of Colorado
PHD University of California

John Armilio
Police Officer

Jason Arnett
Asst Mgr Coffee Bars/Food Ct.

Donald Arnold

Maintenance Mechanic

Alex Arntson
Help Desk Technician

Ona Ashley
Professor/Director Hosp. Mgmt
BS Pittsburg State University
MLA Baker University

Amy Auld
Police Officer

Dawn Avery
Dining Services Assistant I

Getahun Ayele
Housekeeping Equip. Mech.

Fatai Ayoade
Head Coach, Men Soccer
BA Park University
MS University of Kansas

B

Barry Bailey
Assoc. Prof./Librarian
BA University of Illinois
MS University of Illinois

Lillianna Bajich-Bock
Counselor
BS Kansas State University
MS Kansas State University

Brian Balman
Professor Mathematics
BS Calvary Bible College
MA Fort Hays State University

Andre Banks
Custodian

Margaret Barlett
Professor Nursing
BSN College of Mount Saint Joseph
MS University of Central Missouri

Rhonda Barlow
Professor Mathematics
BS Univ of Central Oklahoma
MS Univ of Central Oklahoma

Timmy Barnhart
Creative Lead/Designer

Lauren Baron
Administrative Assistant

Geraldine Barrett
Billing A/R Specialist

Sheri Barrett
Dir., Outcomes Assessment
BS Baker University

EDD University of Kansas
MPA Univ of Missouri - Kansas City

Debra Bates
Police Officer

Brian Baumgardner
Professor Science
AA Johnson County Comm College
BS Pittsburg State University
DDS Univ of Missouri - Kansas City
SPC Univ of Missouri - Kansas City

Martha Baumgardner
Coor., Journalism/Media Com.
BA Univ of Missouri - Kansas City
MS University of Saint Mary

Robert Beasley
Production Mgr. Video Srvcs
BA Oklahoma State University

Lynne Beatty
Professor Science
BS Murray State University
MS Southern Illinois University
SPC University of Kansas

Christina Bechtel
Creative Lead/Designer
BS Kansas State University

Amy Becker
Production Specialist

Robert Becker
Unified Messaging Admin.
BS Rockhurst University

Emily Behrmann
General Mgr, Performing Arts
BA Univ of Missouri - Kansas City

Kenneth Behrmann
Box Office Manager
BA Univ of Missouri - Kansas City
MA Univ of Missouri - Kansas City

Mengistu Bekalu
Custodian

Stephanie Belford
Administrative Assistant

Peter Belk
Prog. Dir. Admissions
BBA Missouri Southern State Univ
MA Univ of Missouri - Kansas City

Samantha Bell
Assoc. Prof. English
BA SUNY College at Geneseo
MA SUNY College at Brockport
PHD University of Kansas
SPC University of Kansas

Deanne Belshe
Digital Manager
BA University of Kansas

Britt Benjamin
Assoc. Prof. Fash Merch/Design
BFA Stephens College

Alisa Bentley
Administrative Assistant

Amanda Bentley
Asst. Prof. Practical Nursing
BSN Southwestern College

Mary Berg
Asst. Prof. Hospitality Mgmt.
AAS Johnson County Comm College
BS William Jewell College

Sean Bergman
Tech. Dir., Carlsen Ctr. Ops.
BA University of Kansas

Erin Bessler
Recruiter
BS University of Kansas

Shawn Biggs
Assoc. Prof. EMS
AS Labette Community College

Stephen Bittner
Custodian

Cordell Black
TAACCCT Career Coach

Susan Black
Accountant
BS University of Kansas

Nicole Blackwell
Digital Strategist, Analyst
AA Johnson County Comm College
BS University of Kansas

Janice Blansit
Prog. Dir. ABE/GED/ESL
BA Colorado Womens College
MBA University of Kansas

Eve Blobaum
Assoc. Prof. Sociology
BA Univ of Nebraska - Lincoln
MS Univ of Missouri - Kansas City
SPC Univ of Missouri - Kansas City

Jeffrey Blodig
Professor Science
BS University of Kansas
MS Fort Hays State University

Michael Bloemker
Head Coach, CC/Track Field
BS University of Central Missouri

MA University of Saint Mary

Ayalnesh Bogale
Custodian

Robin Boley
Campus Svcs. Info. Coor.
BA MidAmerica Nazarene Univ

Frank Bolfeta
Bookstore Course Mat. Buyer
BS University of Kansas

Stacy Boline
Principal Writer/Editor
BS Kansas State University

Mitchell Borchers
AVP, Business Services
BBA Iowa State University

Marc Bouton
Maintenance Supervisor

Daniel Bowyer
Custodian

Barrett Boyd
Supv., Computer Lab

Gary Boyd
Sr. Programmer Analyst
BS Missouri State University
MA Missouri State University

Rochelle Boyd
Mgr. Intrnl Invest/Tech Audits
BS Colorado State University
MS Regis College

Angela Boyer
Administrative Assistant

Sarah Boyle
Professor History
BA American University
MA SUNY at Binghamton
PHD SUNY at Binghamton

Robert Brannan
Professor English
BA Univ of Missouri - Kansas City
MA Iowa State University

Aubree Brattin
Head Coach, Softball

Alicia Bredehoeft
Counselor
BA Univ of Missouri - Columbia
MED Univ of Missouri - Columbia

Randal Breeden
Creative Lead/Designer
BFA University of Kansas

Debra Brewer
Financial Aid Supv - Acctg.
BS Univ of Missouri - Columbia

Regina Brewer
Sr. Planning/Research Analyst
BED Arkansas State University
MA Arkansas State University

Constance Brickner
Benefits Specialist
BS Emporia State University
MA Webster University

Alexandria Bright
Success Advocate
BS Kansas State University

Hedy Brizendine
Financial Aid Coordinator

David Brooks
Help Desk Analyst
BS Kansas State University

Lori Brooks
Assoc Prof Health Info Systems
BED Emporia State University

Andrea Broomfield
Professor English
BA University of Kansas
MA University of Kansas
PHD Temple University

Jim Brown
Mgr. Office Computing
AS Gadsden State Comm College
BA Jacksonville State University

Sally Brown
Administrative Assistant

Susan Brown
Professor HPER
BS Kansas State University
ME University of Kansas

Timothy Brown
Assoc. Prof. RR Mechanics
BS Embry-Riddle Aeronautical Univ

Mark Browning
Professor English
BA William Jewell College
MA Univ of Missouri - Kansas City
PHD University of Kansas

Jason Brunkan
Sr Multimedia Eng Event Spec
BA Univ of Missouri - Columbia

Ron Brunkow
Video Systems Engineer

Malinda Bryan-Smith

Dir, Grants Leadership Dev.
BS University of Kansas
MBA University of Kansas

John Buchanan
Counselor
BA Univ of Missouri - Columbia
MA Univ of Missouri - Kansas City

Jason Buell
Access Control Specialist

William Buese
Professor/Trainer
BED University of Central Missouri
MS University of Central Missouri

Sharon Buhler
Foundation Oper. Coor.
BBA Iowa State University

Anthony Butler
Supv., Drafting Lab

Jeffrey Byers
Assoc. Prof. Animation

Kelly Byfield
Administrative Assistant
AA Johnson County Comm College
BBA Baker University

Jane Byrne
Administrative Assistant

Kathryn Byrne
Assoc. Prof. Writing Center
AA Diablo Valley College
BA Mills College
MA Kent State University Main
PHD Kent State University Main
SPC Kent State University Main

James Byrnes

C

Judith Callaghan
Administrative Assistant

Gayle Callahan
Dir., Bursar Operations
BS Pittsburg State University
MBA University of Kansas

Janice Callahan
Dining Services Assistant II

Terry Callihan
Professor Dental Hygiene
AAS Penn Valley Community College
AS Johnson County Comm College
BS Univ of Missouri - Kansas City
MS Univ of Missouri - Kansas City

Donald Campbell

Senior Project Manager
BS Ohio State University
MS Northwestern University

Kevin Cannell
Professor Science
BS Millikin University
MS North Carolina State Univ

Karen Cantrell
Bookstore Accountant
MBA MidAmerica Nazarene Univ

Robert Carney
Professor Info. Technology
BS Missouri State University
MBA Univ of Missouri - Kansas City

William Carpenter
Maintenance Mechanic

Deborah Carrier
Professor HPER
BS Emporia State University
MBA Emporia State University
MED Montana State Univ - Northern
SPC Montana State Univ - Northern

Diane Carroll
Principal Writer/Editor
BS Univ of Nebraska - Lincoln
MA Penn State University Park

John Carroll
Asst. Prof. Fine Arts
BFA University of Mass/Dartmouth
MFA New School of Social Research

Carl Carter
Custodian

Kimberly Carter
Administrative Assistant

Kathy Carver
Professor Nursing
BSN Washburn University
MN University of Kansas

Valerie Caselman
Administrative Assistant
MA University of Tennessee

Megan Casey
Assistant Bursar
BS Univ of Missouri - Columbia
MS University of Phoenix

Becky Centlivre
VP, Human Resources
AA Washburn University
BA MidAmerica Nazarene Univ
MA MidAmerica Nazarene Univ

Karen Chamberlin
Project Manager

AA Baker University
BS Baker University

Colleen Chandler
Dir., Human Resources
BS Kansas State University
JD Washburn University
MBA Washburn University

Laurie Chapkin
Coor., Career Dev. Center
BA Adrian College
MA Northeastern Illinois Univ
MED DePaul University
SPC Northeastern Illinois Univ

Manuel Chavira
Custodian

Isabelle Chen
Professor Computer Science
MS Texas AM University

Shu-Dong Chen
Professor Humanities
MA University of Kansas
PHD University of Kansas

John Chorn
Professor Science
AB Drury University
MA University of Kansas
PHD University of Kansas

Anne Christiansen-Bullers
Principal Writer/Editor
BA Iowa State University
MA Western Illinois University

Parri Christie
Administrative Assistant
BS Univ of Arkansas-Fayetteville
MS Univ of Arkansas-Fayetteville

Hugh Clark
Asst. Prof. Industrial Maint.
AAS Comm College of the Air Force
BS DeVry University
MBA Keller Grad School of Management

Michael Clark
Assoc. Prof. Science
BS University of Kansas
MBA Arizona State University
MD University of Kansas

Michelle Clark
Professor Science
BS Arizona State University
MS Purdue University Main Campus

Vincent Clark
Professor History
BA Pacific Union College
MA Loma Linda College

PHD University of California

Angela Claussen
Counselor
BA Univ of Nebraska - Lincoln
MS University of Kansas

John Clayton
Exec Dir Inst Effect, Plng/Res
MBA Northwest Missouri State Univ
SPC Lindenwood University

Thomas Clayton
Dir., Insurance Risk Mgmt.
AA Maple Woods Community College
BA Univ of Missouri - Kansas City
MBA Baker University

Angela Clem
Administrative Assistant

Frank Clements
Custodian

Abby Clevenger
Administrative Assistant

Ellen Clickner
Coor., SBDC
BA Univ of Wisconsin-Parkside

Lydia Cline
Professor Drafting
BA Iowa State University

Shane Cockrum
Custodian

Patricia Cody
Administrative Assistant

Percy Cody
Professor Electronics
BEE University of Kansas
MS Naval Postgraduate School

Kelly Cole
Fin. Aid Compliance Officer

Lisa Cole
Professor Accounting
BS Missouri State University
MS Univ of Missouri - Kansas City
PHD St Louis University
SPC St Louis University

Benjamin Conrad
Head Coach, Women's Basketball
BA University of Northern Iowa
MED Iowa State University

Omar Conrad
Professor Philosophy
BA University of Kansas
MA University of Kansas

SPC University of Kansas

Catherine Consolino
Administrative Assistant

Gary Cook
Dir. Hskp Svcs/Haz Mat Control
AAS Pensacola State College
BS University of Wisconsin

Lenora Cook
Dean Health Care Prof\Wellness
AAS Garden City Comm College
BSN West Texas AM University
MSN West Texas AM University
PHD Colorado State University

Cheryl Coon
Prog. Coor., Cont. Educ.

Brett Cooper
Assoc Prof. Math Resource Ctr
BED University of Kansas
MA University of Kansas
SPC Univ of Missouri - Kansas City

Louise Cooper
Asst. Mgr. Bkstore Operations
BS Univ of Nebraska - Omaha

Douglas Copeland
Professor Economics
BA Univ of Missouri - Kansas City
MA Univ of Missouri - Kansas City

Jill Coppess
Professor Graphic Design
BFA Kansas City Art Institute

Gavin Cotsworth
Project Manager
BA University of Kansas

Jeffrey Couch
Prog Dir. Global English Inst.
BS University of Central Missouri
MA University of Central Missouri

Mark Cowardin
Professor Fine Arts
BFA University of Kansas
MFA University of Arizona

Amelia Cox
Web Application Developer

Kristen Cox
Mgr. Accounts Payable
AA Manchester College
BBS Indiana University South Bend

Corbin Crable
Coor., Journal/Ledger Advisor
BA Kansas State University
MS Kansas State University

Cheryl Craft
Dining Svcs Asst I/Food Con Ld

Scott Craig
Assoc. Prof. EMS
AAS Johnson County Comm College
BA Ottawa University

Lindsey Cramer
Classroom Coor./Lead Teacher

Tina Crawford
Assoc. Prof. Business Admin.
BA University of Kansas
JD Washburn University
SPC Washburn University

Linda Creason
Professor Reading/Acad Ach Ctr
BA Avila University
MS Avila University
PHD Univ of Missouri - Kansas City
SPC Univ of Missouri - Kansas City

Gary Cromer
Senior Buyer
BS Kansas State University

Scott Crompton
Asst. Prof. Metal Fab/Welding
AAS Johnson County Comm College

Jody Cross
Administrative Assistant

Robert Cundith
Sports Information Dir./Writer
MA Wichita State University

Jamie Cunningham
Asst. Prof. Science
BS University of Kansas
PHD University of Kansas

Timothy Curry
Principal Writer/Editor
BA Rockhurst University
MA University of Kansas

Margaret Curry-Chiu
Assoc. Prof. Dental Hygiene
AAS Johnson County Comm College
BFA University of Kansas
MS Univ of Missouri - Kansas City

Joan Curtis
Administrative Assistant

D

Mark Daganaar
Dir., Library
BA Midland Lutheran College
MA Lutheran School of Theology
MLS Univ of Missouri - Columbia

SPC Lutheran School of Theology

Sean Daley
Professor Anthropology
BA Rutgers St Univ of New Jersey
MA University of Arizona
PHD University of Connecticut
SPC University of Connecticut

Dustin Dallam
Video Systems Engineer

Sharla Danaher
Administrative Assistant

Jaya Daniel
Intl Immigrant Student Coor.
MBA Avila University

Elizabeth Daugherty
Operations Support Analyst

Keith Davenport
Mgr. Student Act/Ldrshp Dev.
BS Olivet Nazarene University
MDV Nazarene Theological Seminary

Deidre Davidson
Prog. Coor., Cont. Educ.
BS Kansas State University

Rosemary Davidson
Coor., CE Operations

Susan Davidson
Accounting Specialist
AA Neosho County Comm College

David Davis
Professor English
BA Coe College
MA University of Kansas

Diane Davis
Professor English
BA Univ of Missouri - Kansas City
MA Univ of Missouri - Kansas City

Karen Davis
Asst. Prof. Dental Hygiene
BS Univ of Missouri - Kansas City

Kimberly Davis
Sr. Payroll Specialist

James Dawkins
Police Officer
BS Wichita State University
MA Webster University

Billie De Maranville
Administrative Assistant

Mary Deas
Professor Mathematics
BS South Caroline State Univ

MED South Caroline State Univ

Paul Decelles
Professor Science
BS Cornell University
MS University of Georgia
PHD University of Kansas

Braden Decker
Recruiter
BA University of Oklahoma
MED University of Oklahoma

Georgia Deming
ESL Prog. Mgr.
BA Univ of Nebraska - Lincoln
MLS Emporia State University

Marcel Des Marteau
Executive Sous Chef

Yonas Desalgne
Custodial Supervisor

Ricky Dial
Custodial Supervisor

James Dice
Athletic Fac. Clinic Coor.
BA Univ of Missouri - Kansas City
MBA University of Saint Mary

Larry Dice
Warehouse/Postal Srvcs Assoc.

Mary Dickerson
Prog. Dir. Testing Asmt Svcs
BS Kansas State University
MS Baker University

James Divney
Professor Soc/Anthropology
BA Adams State College
MA University Northern Colorado
MPH University of Kansas
PHD University of Kansas

Gregory Dixon
Assoc. Prof. English
BA Fort Hays State University
MA University of Kansas
PHD University of Kansas

Carla Dodge
Access Services Advisor
BED University of Kansas
MED Wichita State University

James Donaghy
RR Welding Trainer
AAS Johnson County Comm College

Jack Donahoo
Multimedia Eng./Event Spec.

Julia Donaldson

Intl Immigrant Student Coor.

Troy Dooling
Maintenance Mechanic

Valerie Dorsey
Curriculum Process Coor.
AA Johnson County Comm College
AAS Johnson County Comm College
BGS University of Kansas

Geraldine Dotson
Professor Mathematics
BS Univ of Central Oklahoma
MA University of Kansas
PHD University of Kansas
SPC University of Kansas

Sharon Dowdall
Administrative Assistant

Holly Dressler
Access Svc Adv/Prog. Fac.
BS University of Illinois
ME Southern Illinois University

Gerald Droge
Stationary Engineer
AAS Johnson County Comm College

James Drone
Sr. Client Tech. Analyst
BS Emporia State University

Linda Dubar
Employmt Relations/Intern Coor
BA Avila University
MS Avila University

Donna Duffey
Professor Entrepreneurship
BS University of Wisconsin
EDD National American University
MBA Baker University
MS Baker University
SPC Baker University

Colleen Duggan
Professor Nursing
BSN Northern Illinois University
MSN St Louis University

Csilla Duneczky
Dean, Sciences Math
BA University of Colorado
PHD University of Pennsylvania

Justin Dunham
Assoc. Prof. Mathematics
BA University of California
MS California State University

Lisa Dunitz
Acad. Scheduling Process Coor.
BS Friends University

Robert Dye
Assoc. Prof. Const. Mgmt.
BS Kansas State University

E

Leann Eaken
Administrative Assistant

Terri Easley-Giraldo
Professor Speech
BA University of Texas Dallas
MA Baylor University
PHD University of Kansas

Dan Eberle
Assoc Prof Enrgy Perf/Res Mgt
AA Crowder College
BA Univ of Missouri - Kansas City

John Eckel
Sergeant, Police Department
MPA University of Kansas

Beth Edmonds
Professor Mathematics
BS Pittsburg State University
MA University of Kansas

Brenda Edmonds
Professor Mathematics
BA Kansas State University
BS Kansas State University
MA University of Kansas

Christy Edmonds
Dining Services Assistant II

Brett Edwards
Maintenance Supervisor

Tai Edwards
Assoc. Prof. History
BS University of Kansas
MA George Mason University
PHD University of Kansas

Ben Edwinson
Asst. Trainer
BS University of Kansas
MS Emporia State University

Gina Egan
Assoc. Prof. Science
AA MS Gulf Coast Comm College
BS Univ of Southern Mississippi
PHD Penn State University Park

Claire Ehney
Mgr. HCDC
BME Abilene Christian University

Jennifer Ei
Head Coach, Women's Volleyball
BS Florida Atlantic University

MS University of Kansas

Debra Eisenhower
Coor., Staff Org. Dev.
BS Kansas State University

Deborah Elder
Asst. Dean, Comp Sci/Info Tech
BA Benedictine College
EDD University of Kansas
MA Benedictine College

Eric Elisabeth
Professor Science
PHD Univ of Missouri - Columbia

David Ellis
Counselor
BS Emporia State University
MS Emporia State University

Don Emerson
Police Officer

Leila Enevoldsen
Administrative Assistant
BFA Oklahoma State University

Adam Entwistle
Systems Manager
BA Ottawa University

Daniel Epley
Project Manager
BS Baker University
MA Baker University

Robert Epp
Sr. Ed Tech Analyst
AA Johnson County Comm College
BA Ottawa University

Saul Epstein
Sr. Ed Tech Analyst
BA University of Kansas

Terri Erickson-Harper
Professor Graphic Design
BFA Michigan State University

F

James Feikert
Subcenter Director-PTAC
MBA Baker University

Daniel Ferguson
Software Application Developer
BS Truman State University

Rebecca Fernandez
Administrative Assistant

Damon Feuerborn
Assoc. Prof. Drafting
BED Pittsburg State University

MA Baker University

Sandra Finnicum
Assoc. Prof. Science
BS Kansas State University
MS University of Illinois
PHD University of Illinois

Elise Fischer
Professor Mathematics
BS University of Oklahoma
MS Univ of Massachusetts

Amy Fisher
Career Counselor
BS Kansas State University
MS Emporia State University

Patricia Fitzmaurice
Digital Technician

Maureen Fitzpatrick
Professor English
BA Iowa State University
MA Univ of Missouri - Columbia
SPC Univ of Nebraska - Lincoln

Richard Fleming
Assoc. Prof. Game Development
BA University of South Florida
MS University of Kansas

Douglas Flick
Professor Hospitality Mgmt.
AOS Culinary Institute of America

Heather Flick
Professor Dental Hygiene
AA Clark College
BS Univ of Missouri - Kansas City
MA University of Kansas
MS Univ of Missouri - Kansas City
SPC University of Kansas

Gwenevere Flipse
Administrative Assistant

Michael Fluke
Sr. Client Tech. Analyst
AS Johnson County Comm College

Barbara Flynn
Admissions Data Coordinator

Charles Foat
Dir., Emer. Med. Science
AA Des Moines Area Comm College
AS Des Moines Area Comm College
BA Simpson College
MA MidAmerica Nazarene Univ
PHD Capella University
SPC Capella University

Andrew Fogel
Financial Aid Supv - Advising

MBA Avila University

Shannon Ford
Dir., Academic Tech. Services
BS University of Illinois
MA University of Illinois

Norma Fordham
Professor Legal Studies
BA Univ of Missouri - Kansas City
JD Univ of Missouri - Kansas City
SPC Univ of Missouri - Kansas City

Kaci Forsythe
Accounts Payable Analyst
BA Benedictine College

Richard Fort
Interim Dean, Ind. Tech. Div.
BS Pittsburg State University
MS Pittsburg State University

Carolyn Foster
Career Counselor
BS Southwest Baptist University
MS University of La Verne

Mark Foster
Professor Sociology
AA Nassau Community College
AB University of Georgia
PHD Mississippi State University

Skyler Fox
Sr. Applications Administrator

Tracy Fox
Records Specialist
BA California State University

Philip Franklin
Professor Science
BS Pittsburg State University
MS University of Kansas
SPC University of Kansas

Steven Franklin
Success Advocate
BS University of Kansas

Suzanne Franklin
Assoc. Prof. Read/Acad Ach Ctr
BA Univ of Minnesota -Twin Cities
BS University of Kansas
MS University of Kansas

Mahogany Frazier
Assistant Buyer

Catherine Freeman
Procurement Admin. Asst.

Timothy Frenzel
Prog. Dir. Prof. Education
BS Univ of Missouri - Kansas City

MS University of Kansas

Lisa Friedrichsen
Professor Web Dev Dig. Media
BS Iowa State University
MBA Drake University

Ronald Frigault
Counselor
BS Michigan State University
MED Univ of Missouri - Columbia
PHD University of Texas Austin

Michael Frisbie
Library Specialist
BGS University of Kansas
MA Univ of Missouri - Columbia

Anthony Funari
Grant Professional
PHD Lehigh University

Janette Funaro
Professor Foreign Language
BA Grinnell College
MA University of Chicago
SPC University of Chicago

Ryan Futrell
Police Officer
BA Graceland University

G

Marilyn Gairns
Digital Strategist/Acct Plnr
BS Rockhurst University

Frank Galbrecht
Assoc. Prof. Admin. of Justice
BS University of Central Missouri
MS University of Central Missouri

Dawn Gale
Professor Philosophy
BA University of Wisconsin
MA University of Kansas
SPC University of Kansas

Elizabeth Gall
Simulation Educ. Specialist
BS Sterling College
BSN Lester L. Cox Coll NursingHlt
MS Missouri Baptist University
MSN Missouri State University

Kathleen Gallagher
Professor Business Admin.
AA Iowa Western Comm College
BED Univ of Nebraska - Omaha
MBA Creighton University

Melissa Galloway Doctor
Administrative Assistant

Paula Gamble
Administrative Assistant

Sayanti Ganguly Puckett
Assoc. Prof. English
PHD Oklahoma State University

Carol Gard
Administrative Assistant

Aaron Garrison
Asst. Prof. Animation
BS Art Institute of Pittsburgh

Travis Garrod
Sr. Client Tech. Analyst

Lisa Gartland
Coor., Employment Services
BA University of Kansas

Sean Garvey
Systems Administrator
AA Kansas City KS Comm College

Laura Gascogne
Professor Fine Arts
BFA Virginia Commonwealth Univ
MFA Temple University

Scott Gash
Maintenance Mechanic

Lisa Gates
Benefits Specialist
BGS University of Kansas

Aberash Gebru
Custodian

Keith Geekie
Professor English
BS Murray State University
MA Murray State University
PHD Univ of Missouri - Columbia

Kayde Geisbauer
Asst. Prof. Dental Hygiene
AAS Univ of Arkansas-Fort Smith
BS Univ of Missouri - Kansas City

Karen Gerety Folk
Curator of Art Education
BFA University of Kansas
MA University of Kansas
SPC University of Kansas

Rabeh Ghadiri
Office Coor., IISS

Steven Giambrone
Professor Science
BS Univ of Missouri - Kansas City
MS University of Central Missouri

Susan Gibbar

Assoc. Prof. Nursing
BSN University of Kansas
MA University of Central Missouri

Aaron Gibbs
Assoc. Prof. Mathematics
AA Johnson County Comm College
BS University of Kansas
MA University of Kansas

Kathleen Gill
Health Human Services Coor.

Scott Gilmore
Assoc. Prof. Industrial Tech.
BS University of Central Missouri
MS University of Central Missouri

Amanda Glass
Asst. Prof. Chemistry
BS Emporia State University
PHD University of Kansas

Jay Glatz
Dir., Dining Services
BS University of Denver

Karen Glenn
Fin. Aid Compliance Officer

Caroline Goodman
Assoc. Prof. Mathematics
BS Purdue University Main Campus
MS University of Illinois

Thomas Goodwin
Vending Services Assistant

Henry Gordon
Research Data Analyst

Jerry Gordon
Professor Info. Technology
AA Jackson State Comm College
BA Oklahoma Baptist University
MDV Midwestern Baptist Theo Sem

Lyle Gorton
Maintenance Mechanic

Julie Graviette
Sr. Accounts Payable Analyst

Christopher Gray
Exec. Dir. Mktg Communications
BS Drake University

Jason Gray
Assoc. Prof. Hospitality Mgmt.
AAS Johnson County Comm College
BA Univ of Missouri - Kansas City

Tammy Greathouse
Asst. Prof. Practical Nursing
BSN Universityof Arkansas Med Sci

MSN Univ of Missouri - Kansas City

Zachary Gredlics
Prog. Coor., Cont. Educ.
BA University of Kansas

Darla Green
Assoc. Prof. Interior Design
BS Kansas State University
MS Kansas State University

Barbara Greenwood
Employee Records Assistant

Scott Gregory
Chief Audio Engineer
BA Univ of Missouri - Kansas City

Denise Griffey
Prog Dir CollCom Outreach/STEM
MED MidAmerica Nazarene University

Shalanda Griffin
Classroom Coor./Lead Teacher

Robert Grondahl
Assoc. Prof. Mathematics
BS University of Kansas
MA University of Kansas

Erin Groopman
Asst. Prof. Health Info Sys.
BS Northwest Missouri State Univ
MBA Avila University

Valorie Gross
Payroll Manager

Kathryn Grube
Assoc. Prof. Interior Design
BS East Tennessee State Univ
MA Lawrence Technological Univ

Beth Gulley
Assoc. Prof. English
BA MidAmerica Nazarene Univ
MA Univ of Missouri - Kansas City
PHD University of Kansas
SPC University of Kansas

Lou Guthrie
Dir., HE Benchmarking Inst.
PHD Virginia Polytech Inst/St Univ

Judith Guzzy
Professor/Librarian
AM University of Illinois
BS University of Illinois
MLS University of California
SPC University of California

Matthew Gwynn
Coor. Deaf Srvs/Access Accom.
BA Gallaudet Univeristy
MA New York University

H

Sheryl Hadley
Professor Economics
BS University of Central Missouri
MA University of Central Missouri

Nur Hafza
Success Advocate
BS Metropolitan State University

Heather Hale
Asst. Prof. Auto Tech
BS Pittsburg State University
MA Ball State University

Carrie Hambright
Administrative Assistant
BA University of St Mary

Russell Hanna
Professor Game Development
BS Missouri Univ ScienceTechnlgy
MS Missouri Univ ScienceTechnlgy

Mary Hanover
Administrative Assistant

Steve Hansen
Professor Computer Science
AA Metropolitan Community College
BA Univ of Missouri - Kansas City
MS Univ of Missouri - Kansas City
SPC Univ of Missouri - Kansas City

Carrie Hanson
Dir., Dental Hygiene
BS Northern Arizona University
EDD Univ of Missouri - Kansas City
MA Northern Arizona University

Sherri Hanysz
Associate Registrar
BA Univ of Missouri - Kansas City
MLA Baker University

Mary Harmon
Assoc. Prof. Science
BA Univ of Missouri - Kansas City
MS University of South Florida

Laura Harris
Financial Aid Assistant
BS Rockhurst University

Shaun Harris
Professor English
BA Concordia College - Moorhead
MA Univ of Nebraska - Lincoln
PHD Univ of Nebraska - Lincoln
SPC Univ of Nebraska - Lincoln

Kayla Harrity
TAACCCT Career Coach

MA Park University

Kristen Harth
Counselor
BA Washburn University
MS University of Kansas

Bruce Hartman
Exec. Dir. Nerman Museum
BFA University of Central Missouri
MFA Washington University

John Patrick Harty
Asst. Prof. Science
BS Montana State Univ - Bozeman
MS University of Utah
PHD Kansas State University

Bruce Harvey
Counselor
BS Northern Illinois University
MED Univ of Arkansas-Fayetteville

Melanie Harvey
Assoc. Prof. Science
BA Anderson University
MS Vanderbilt University
PHD Vanderbilt University

Jack Harwell
Consultant SBDC
BS University of Texas Arlington
MBA University of Texas Dallas

Darlene Hatcher
Asst. Prof. Mathematics
BS Univ of Nebraska - Lincoln
MS Univ of Nebraska - Lincoln

Simon Hausner
Financial Aid Analyst

Brent Haverkamp
Coor., Success Center
BS Rockhurst University
MBA Rockhurst University

Gwenda Hawk
Asst. Prof. Legal Studies
BS Univ of Missouri - Columbia
JD Southern Methodist University
MBA Southeast Missouri State Univ

Rachel Haynes
Coor., Technical Training

Rex Hays
AVP, Campus Srvcs/Fac. Plng
BA MidAmerica Nazarene Univ
MBA Baker University

Orlin Heady
Support Analyst

Mary Hedberg
Professor Busi. Office Tech.

BS Minot State University
MS University of Central Missouri

Michelle Heffron
Administrative Assistant

Ryan Heinlein
Asst. Prof. Music
BME Wichita State University
MM Wichita State University
SPC Univ of Missouri - Kansas City

Carl Heinrich
Asst. Dean, Athletics
BS University of Kansas
MS Northwest Missouri State Univ

Donna Helgeson
Assoc. Prof. Mathematics
BS Iowa State University
MA University of Kansas

Michael Hembree
Professor History
BA Eckerd College
MA Florida State University
PHD Florida State University

Gretchen Henderson
NARS Training Coordinator
BS Kansas Wesleyan University

Howard Hendren
Assoc. Prof. HVAC
EDD Liberty University
EDS Liberty University
MA University of Central Missouri

Kailyn Hendrickson
Accountant
BA Benedictine College

Erika Henritz
Communications Specialist
BED University of Kansas

Bonita Hensley
Campus Police Dispatcher

Kristine Herman
Supv., Bookstore Warehouse

Sara Hernandez
Police Officer

Debra Herrig
Administrative Assistant
BS Upper Iowa University

Barry Herron
Professor Science
BS University of Central Missouri
PHD Univ of Missouri - Columbia

Woody Hersey

Police Officer

Tony Hicks
Database Administrator
BS Louisiana St Univ/Shreveport
MS Louisiana St Univ/Shreveport

Barry Hincks
Professor Desktop Publishing
AB Occidental College
MFA Rochester Inst of Technology

Harold Hinderliter
Maintenance Mechanic

Bruce Hines
Dir., Documt/Whse/Postal Srvcs
BS Northwest Missouri State Univ

Meghan Hinojosa
Professor/Fac. Cosmetology

Gay Hintz
Production Supervisor

Man Ho
Lab Technician

Timothy Hoare
Professor Humanities
BA Missouri Valley College
MDV McCormickTheological Sem
PHD Graduate Theological Union

Roger Hobson
Video Systems Engineer
AS Johnson County Comm College

Lana Hodes
Coor., Cosmetology

Daniel Hoerz
Assoc. Prof. Hospitality Mgmt.
BA Univ of Missouri - Kansas City
MA Univ of Missouri - Kansas City

Susan Hoffman
Administrative Assistant

Monica Hogan Adams
Professor English
BA Univ of Missouri - Kansas City
MA Univ of Missouri - Kansas City
PHD Univ of Missouri - Kansas City
SPC Univ of Missouri - Kansas City

Nancy Holcroft Benson
Professor Science
BS Iowa State University
PHD University of Kansas

Matthew Holmes
Dir., Network/Data Center Ops.

Tammie Holmes
Senior Project Manager

BA Univ of Missouri - Kansas City
MBA DeVry University

Robert Holtgraver
Lead Housekeeper

Donna Hoopes
Professor Mathematics
BS University of Kansas
MS Wichita State University

James Hopper
Professor Web Dev Dig. Media
BA Univ of Missouri - Kansas City
MA University of Kansas

Terence Horan
Maintenance Supervisor
AA Johnson County Comm College
AS Johnson County Comm College

Nathan Howe
Video Production Specialist

Kristy Howell
Sustain. Educ . Engage. Coor.
AA MS Gulf Coast Comm College
BA Univ of Southern Mississippi
MA Western Kentucky University

Joel Hoy
Billing A/R Supervisor
BFA Emporia State University
BS Emporia State University

Jeffrey Hoyer
Dir., Cont. Educ. Operations
BA Southern Illinois University
MS University of Phoenix

Martin Huerter
Network Architect

Dale Hughes
Professor Mathematics
AM Washington University
BS Missouri Univ ScienceTechnlgy

LaWanda Hughes
Research Coordinator
BS Emporia State University

Tom Hughes
Professor Computer-Aid Draft.
AAS Kalamazoo Valley Comm College

Tonia Hughes
Asst. Prof. Film Photography
BS Columbus State University
MFA Georgia State University

Pamela Hulen
Assoc. Prof. Mktg Mgmt
BS Missouri State University
MBA Univ of Missouri - St Louis

Anne Hunt
Administrative Assistant

Rose Hunter
Dining Svcs Asst I/Food Con Ld

Diana Hurst
Professor Early Childhood Educ
BS Univ of Missouri - Columbia
MA Univ of Missouri - Kansas City

Samira Hussein
Professor Business Admin.
BS Iowa State University
MBA University of Central Missouri
MS University of Central Missouri
SPC University of Central Missouri

I

Heidi Ide
Administrative Assistant
AA Johnson County Comm College

Teresa Ilten
Professor Nursing
BSN University of Central Missouri
MSN University of Kansas

Christopher Imm
Professor Mathematics
BS Northwest Missouri State Univ
MS Univ of Missouri - Columbia

Elizabeth Ingala
Help Desk Analyst

John Ingold
Lead Groundskeeper

Jack Ireland
Assoc. Prof. Auto Tech
BS University of Central Missouri
MS University of Central Missouri

Tia Islam
Administrative Assistant

J

Faith Jacobsen
Assoc. Prof. Science
MS University of Cal/San Diego
PHD University of Cal/San Diego

Jonathan James
Assoc. Prof. Auto Tech
BS Barclay College

Lori James
Sr. Accounting Analyst

Zygmunt Jarczyk
Information Tech. Asset Mgr.
BS Kansas State University

Ian Jardes
Police Officer

Janette Jasperson
Coor., International Educ.

Michael Jeffers
Coach/Professor
BED Georgia Southern University
MED Georgia Southern University

Farrell Jenab
Faculty Dev. Coor.
MLS Emporia State University

Cherie Jenkins
Asst. Mgr. Catering/Cafe Tempo

Darren Jenkins
Sr App. Admin, Virtual Mgmt
BS Kansas State University
MS University of Kansas

Isaac Jenkins
Custodian

Jean Jensen
Professor Mathematics
BA Dana College
MS Univ of Nebraska - Omaha

Melisa Jimenez
Recruitment Coordinator
MA University of Saint Mary

Julie Jobe
Accounts Payable Analyst
MS University of Kansas

Christopher Johnson
Police Officer

Jacob Johnson
Police Officer

Susan Johnson
Professor Engineering Tech.
BS Ohio State University
MS Ohio State University

Vickie Johnson
ABE/GED/ESL Data Specialist

Marilyn Jones
Counselor
BA Avila University
MA Webster University

Nathan Jones
Assoc. Prof. English
BA Evergreen State College
BA University of Washington
EDD Washington State University
MA California State Univ-Dominguez Hills
MA Washington State University

PHD Indiana Univ of Pennsylvania

Tami Jones
Inventory Aide - Cosmetology

Ashley Jost
Financial Aid Coordinator

Robin Judkins
Sr. Network Analyst - Telecomm

K

Bobanne Kalkofen
Professor Interior Design
BS Univ of Missouri - Columbia
MLA Baker University

Katherine Karle
Assoc. Prof. English
BA California State University
MA California State University
PHD University of Illinois

Patricia Karr
Success Advocate
BSE Kansas State University
MLA Baker University

Jean Keating
Acctg. Clerk/Admin. Asst.

Jimmy Keaton
Sergeant, Police Department
AA Johnson County Comm College

Sally Keeton
Classroom Coor./Lead Teacher
AA Johnson County Comm College
AAS Johnson County Comm College
BS University of Saint Mary
MS Emporia State University

Jennifer Keffer
Mgr. Bookstore
BA University of Kansas
MS Baker University

Kathryn Kennedy
Mgr. CLEAR Program
BA Univ of Cincinnati Main Campus

Durnae Kennelly
Administrative Assistant

Jennifer Kennett
Professor Mathematics
BS Texas AM University
MS University of Texas - Pan Am

Mary Kessler
Counselor
BA Rosemont College
EDS Univ of Missouri - Kansas City
MA University of Notre Dame

SPC Univ of Missouri - Kansas City

Kyong-Mal Kim
Professor Economics
MA Calif State Univ- Fullerton
PHD Union College

Angela King
Assoc. Prof. Accounting
BS University of Kansas
MBA University of Kansas

Kay King
Professor Admin. Justice
BS University of Central Missouri
MS University of Central Missouri

Morris King
Asst. Prof. RR Electronics
BA Colorado State University

Tamara Kingston
Facilities Scheduling Coor.

Russell Kinion
Sr. Support Analyst

Cynthia Kleinsorge
Financial Aid Coordinator
BA University of Kansas

Mikhail Kligman
Asst. Prof. Fine Arts
BA Cleveland State University
MFA University of Kansas
SPC University of Kansas

Toby Klinger
Professor Psychology
BA Rutgers St Univ of New Jersey
MA Teachers College Columbia Univ
MED Teachers College Columbia Univ
SPC Teachers College Columbia Univ

Robert Knodel
Custodian

Paul Knoettgen
Supv. Warehouse/Postal Srvcs.

Shirley Knopp
Administrative Assistant

Deborah Knudtson
Mgr. Conf. Svcs Room Sched.
BS Iowa State University

William Koch
Professor Science
BS University of Cal/San Diego
MS Univ of Missouri - Kansas City

Tracy Koehler
BSN Baker University

Karen Koehn

Science - Lab Coordinator

Jo Ann Konecny
Foundation Accountant
BS University of Houston

Jill Konen
Counselor
BA University of Kansas
MS University of Kansas

Judy Korb
EVP, Instruction Operations
AA Johnson County Comm College
BA MidAmerica Nazarene Univ
MA Webster University
PHD University of Kansas
SPC University of Kansas

Jeffrey Kosko
Sr. Ed Tech Analyst
AA Johnson County Comm College
BS Avila University

Janet Kraft
Billing A/R Specialist

Amanda Kraus
Asst. Prof. MIRM
BS University of Kansas

David Kriegh
Landscape Horticulturist

Tammie Kritzler
Testing Center Specialist

David Krug
Professor Accounting
BS Kansas State University
MBA University of Kansas

Kimberly Kuhns
Assoc. Prof. Interpreter Trng
BA Gallaudet University
MA Teachers College Columbia Univ

Terri Kurtz
Administrative Assistant

Kimi Kwong
Espresso Barista

Paul Kyle
Dean, Student Services/Success
AA Garden City Comm College
BA Sterling College
MED Wichita State University

Renee Kyles
Marketing Coordinator
BS Chicago State University

L

Mark LaBarge

Professor Science
BS Emporia State University
MS Emporia State University

Karen LaMartina
Dir., Nursing
AA Johnson County Comm College
BSN University of Kansas
MSN Univ of Missouri - Kansas City
PHD Univ of Missouri - Kansas City

Anthony Lacy
BS University of Kansas
MBA University of Kansas

Terri Laddusaw
Administrative Assistant
AA Crowder College

Patrick Lafferty
Assoc. Prof Web Dev/Dig. Media
BA University of Kansas
BS University of Kansas
MS University of Kansas

Jason Lamping
Asst. Prof. HVAC
BGS Pittsburg State University

Stephanie Landis
Consultant SBDC
MBA Rockhurst University

James Lane
Dean Arts, Humanities, Soc Sci
BA Washburn University
MFA Univ of Missouri - Kansas City

Karen Langtry
Project Mgr, Human Capital Mgt
BED Pittsburg State University

Nanette Lanier
Assoc. Prof. Nursing
BSN Rockhurst University
MS University of Kansas

Elizabeth Lanphear
Prog. Coor. ABE/GED
BS Barclay College
MS Emporia State University
MS Kansas State University
SPC Emporia State University

Barbara Larson
EVP, Finance Admin Srvcs
BS Rutgers St Univ of New Jersey
MA University of Wisconsin
PHD Nova Southeastern University

Dale Larson
Biology - Lab Coordinator
BS Univ of Minnesota -Twin Cities
MS Univ of Minnesota -Twin Cities

PHD Univ of Minnesota -Twin Cities

Timothy Laughlin
Senior Simulation Specialist
BA University of Kansas

Christopher Leeson
Sr App. Admin, CE Offsite
BS Fort Hays State University

Kathleen Lefert
Assoc. Prof. Mathematics
BA Wichita State University
MS University of Kansas

Carol Lehman
Business Liaison Consultant

William Lehman
Professor Science
BS Eastern Illinois University
MS Arizona State University
SPC Arizona State University

Audrey Lehr
Payroll Specialist
BGS University of Kansas

Cherie Leiker
Professor Bus. Adm/Off Tech.
BS Univ of Central Oklahoma
MED Univ of Central Oklahoma

James Leiker
Professor History/Poli. Sci.
BS Fort Hays State University
MA Fort Hays State University
PHD University of Kansas

Teresa Leland
Admissions Processing Coor.
BS Oklahoma Wesleyan Univ
MS Indiana Wesleyan University

Jeffery Lewis
Professor Mathematics
BS University of Wisconsin
MED University of Wisconsin
SPC Illinois State University

Rachel Lierz
AVP, Financial Services/CFO
BS Missouri State University
MBA Rockhurst University

David Lingerfelt
Assoc. Prof. HCIS MIRM
BS Kansas State University
MBA Park University

Laura Lipson
Custodian

Georgia Livingston
Administrative Assistant

Henry Locke
Custodian

Nancy Longhibler
Counselor
BS University of Central Missouri
MED Univ of Missouri - Columbia

David Loring
Professor Science
BS Kansas State University
MS Kansas State University

Chad Loughman
Sergeant, Police Department

Delphine Lovitt
Dir., Enterprise App. Support
BS Fort Hays State University

Edward Lovitt
Dir., Ed. Tech./Distance Lrng.
BA Univ of Nebraska - Kearney
BS Univ of Nebraska - Kearney
MS Pittsburg State University
PHD Nova Southeastern University

Timothy Lucas
Sr. Systems Analyst
BS Friends University

Shannon Lueker
RR Welding Trainer

Ernest Luoma
Assoc. Prof. PN HOC
BS University of Central Missouri
MFA University of San Francisco
MSN MidAmerica Nazarene Univ
SPC MidAmerica Nazarene Univ

Gregory Luthi
Professor English
BA Kansas State University
MA Kansas State University
PHD Oklahoma State University

Darryl Luton
Professor Interpreter Training
BA Gallaudet University

Andrew Lutz
Asst. Prof. Info. Technology
BA Kansas State University
MA DeVry Inst of Technology

Kevin Lutz
Systems Administrator
AA Wichita State University

M

Annette Maassen-Spates
Counselor
BA University of Northern Iowa

MA University of Northern Iowa

Darla Mabrey
Access Control Assistant

Dennis MacFarland
Auto Lab Technician
BGS University of Kansas

Barbara Mahring
Prof. Pers Comp Appl/Web Appl.
AA Johnson County Comm College
AAS Kirkwood Community College
BA MidAmerica Nazarene Univ
MED MidAmerica Nazarene Univ
MS Central Michigan University
SPC MidAmerica Nazarene Univ

Cathy Mahurin
Prog Dir Career/Transfer Srvcs
MS DeVry Inst of Technology

Alexander Makarov
Assoc. Prof. Science

Gary Malek
Professor Science
BA University of Wisconsin
MS University of Wisconsin
PHD University of Kansas
SPC University of Kansas

Lori Mallory
Professor HPER
BS Bethel College
MED Wichita State University

Staci Malone
Account Planning Coor - CE

Geremew Mamo
Custodian

Kimberly Manifold
Mgr. Help Desk
BS Northwest Missouri State Univ

Valerie Mann
Asst. Prof Learning Strategies
BSE Kansas State University
MS University of Kansas
SPC Baker University

Aaron Manning
Coor. Hskp. Custodial Svcs.

Jerold Marcellus
Professor Hosp. Mgmt./CHE
AAS Johnson County Comm College
BA Bethany College
MM Kansas State University
MS Pittsburg State University
SPC Pittsburg State University

Mario Mares

Executive Sous Chef

Aimee Martin
Administrative Assistant
BS Washburn University

Brittany Martin
Student Life Coordinator
BA Ottawa University

Chad Martin
Enterprise Application Admin.
AAS Ozarks Technical Comm College
BS Missouri State University
MS Capella University

Faye Martin
Custodial Supervisor

Daniel Martinez
Professor Science
AAS Penn Valley Community College
BS Missouri Univ ScienceTechnlgy
MS Arizona State University
SPC Arizona State University

Karen Martley
VP, Continuing Educ Org Dev
BS Avila University
MS Pittsburg State University

Tafere Masresha
Custodian

John Massey
RR Welding Trainer
AAS Hutchinson Community College
BA Pittsburg State University

Janet Mathis
Data Operations Manager
BS University of Houston

Shelia Mauppin
Dean, Career/Tech Educ Trans.
BS Arkansas State University
EDD University of Texas Austin
MPA Arkansas State University
SPC Arkansas State University

Jeffrey Mayo
Systems Administrator
BBA Fort Hays State University

Rachell McAlister
Administrative Assistant

Charlotte McAnerney
Professor Cosmetology
AA Johnson County Comm College

Marc McCann
Asst. Mgr./Executive Chef
AS Pratt Community College

Theresa McChesney

Professor Mathematics
BS Westminster College
MA University of Pittsburgh

Larry McCloud
VP Academic Affairs/CAO
BA Iowa State University
MLA Baker University
PHD Univ of Missouri - Kansas City

Paul McCourt
Sr. Ed Tech Analyst
BFA Sanford-Brown College Online
MS Wilkes University

Justin McDaid
Mgr. Internal Audit
BS California State University

William McFarlane
Professor Anthropology
BA University of Central Florida
MA SUNY College at Buffalo
PHD SUNY College at Buffalo

Susan McGarvey
Administrative Assistant

Paula McLaughlin
Administrative Assistant

Wiley McMillan
Master Electrician

Mary McMullen Light
Admin. and Research Assistant
BA Univ of Missouri - Columbia

Bridget McNabb
Hospitality Purch/Lab Coor.

John McNally
Assoc. Prof. Nursing
BSN Pittsburg State University
MS University of Kansas

Katherine McNeil
Asst. Prof. Accounting
BBA Pittsburg State University
MBA Pittsburg State University

Susan McSpadden
Photographer
BS University of Kansas

Christine McWard
Director, Collaboration Center
BJ Univ of Missouri - Columbia
MS University of Kansas

James McWard
Professor English
AB Univ of Missouri - Columbia
BJ Univ of Missouri - Columbia
MA Univ of Missouri - Columbia

PHD University of Kansas

Barton Meadows
Assoc. Prof. Architecture
BS University of Kansas
MA University of Kansas
SPC University of Kansas

David Meenen
Counselor
BA Univ of Arkansas-Fayetteville
MS Avila University

Philip Mein
Asst. Prof. Computer Science
BS University of Kansas
MS University of Kansas

Nicholas Meisenhelter
NetLAB Support Analyst
BS DeVry University

Suneetha Menon
Asst. Prof./Director SRC
MA New Mexico State University
MS New Mexico State University

Jennifer Menon Parker
Assoc. Prof. Science
BA Avila University
MA University of Kansas

Jennifer Menzel
Professor Environ. Science
BS University of Georgia
PHD West Virginia University

Felix Mercader
Help Desk Team Leader

Angel Mercier
Prog. Dir. Art Education
BA Stephens College
MS Illinois State University

Jeffrey Merritt
Professor/Director AACtr
AA Johnson County Comm College
BA University of Kansas
MA University of Kansas

Patrica Metsinger
Administrative Assistant

Leslie Michel
Asst. Prof. EMS
BA University of Kansas

Anna Milewska
Bookstore Specialty Prog Buyer

Holly Milkowart
Professor ESL/EAP
BA University of Kansas
MA University of Kansas

Barbara Millard
Professor Marketing Mgmt.
BS Framingham State College
MBA Baker University
MS University of Tennessee
SPC Baker University

Arthur Miller
Exhibition Preparator

Deana Miller
Professor Speech
BA Southern Nazarene University
MA Southern Nazarene University

Erica Miller
Prog. Coor., Cont. Educ.
BA Washburn University

Jonathan Miller
Professor Architecture
BS Univ of Nebraska - Lincoln
MA Univ of Nebraska - Lincoln

Karen Miller
Access Services Advisor
BS Emporia State University

Robert Miller
Recruiter/Appl. Processor
BA Washburn University

Vincent Miller
Dean, Academic Support
BA University of Kansas
MA University of Pennsylvania
PHD University of Pennsylvania

Sam Mirsepasi
Sr. Support Analyst

Richard Moehring
Dean Lrner Engagement/Success
BA MidAmerica Nazarene Univ
MED University of Kansas

Michael Moloney
Lead Groundskeeper

Michael Moreland
Professor Instrumental Music
BA University of Kansas
MA Univ of Missouri - Kansas City

Kristy Moreno
Financial Aid Coordinator

Jeff Morgan
Sr. Systems Analyst
AAS Brown Mackie College

Rachel Morris
Asst. Prof. Comp. Info Systems
AS Metropolitan Community College
BS Univ of Missouri - Kansas City

George Mortell
Sr. Systems Analyst
AA Johnson County Comm College
AAS Johnson County Comm College
BA Ottawa University

Elmer Mosley
Maintenance Mechanic

Jason Mueller
Professor RR Welding
BED Pittsburg State University
MS Pittsburg State University

Gail Munoz
Administrative Assistant

Tyler Murphy
Campus Police Dispatcher

Terry Murphy-Latta
Dir., NARS
AA Metropolitan Community College
BA Univ of Missouri - Kansas City
EDD University of Kansas
MA Univ of Missouri - Kansas City

Jill Murray
Assoc. Prof. Respiratory Care
AS Johnson County Comm College
BGS University of Kansas

Michael Myers
Warehouse/Postal Srvcs Assoc.

N

Jay Nadlman
Assoc. Prof. Legal Studies
AB Washington University
JD Univ of Missouri - Kansas City

Ian Nance
Digital Design/UX

Stephen Navarro
Veteran Srvcs Outreach Asst.

Mioshi Neal-Stovall
RR Welding Trainer
AAS Johnson County Comm College
BS University of Phoenix

Julie Neemeyer
Creative Content Manager
BS University of Nebraska - Kearney

Lareesa Nelson
Business Intelligence Analyst
BS DeVry University
MS Keller Grad School of Mgmt

Linda Nelson
Administrative Assistant

Teresa Nemer

Assoc. Prof. Graphic Design
BFA Kansas City Art Institute

Mary Nero
Assistant General Counsel
BS Univ of Missouri - Columbia
JD Univ of Missouri - Columbia

Derek Nester
Sr Multimedia Eng Event Spec

Harl Newton
Custodian

Anthony Nguyen
Maintenance Mechanic

Tracey Nichols

John Nicholson
Professor Computer Science
BA University of Colorado

Marilee Nickelson
Legal Assistant

Megan Noel
Professor Business Admin.
BCE Kansas State University
MBA Baker University

Ann Nordyke
Assistant Registrar
MA Bowling Green State University

Charles Northcott
Police Officer

Connor Nyberg
Application Architect
BS Wichita State University

O

Cathleen O'Neil
Professor Mathematics
BA Texas AM University
MS University of Kansas
PHD University of Kansas

Mary O'Sullivan
Dir., Client Support Svcs.
AA Johnson County Comm College
BA MidAmerica Nazarene Univ
MBA University of Saint Mary

Habtamu Oda
Lead Housekeeper

Kelle Oestreich
Asst. Prof. Respiratory Care
BS University of Kansas

Emily Olson
Supv., Catering

Daniel Owens
Asst. Prof. Economics
BA Kansas State University
MA Univ of Missouri - Kansas City

Douglas Oyer
Access Control Coordinator

P

GeAnn Pace
Classroom Coor./Lead Teacher

Alisa Pacer
Emergency Preparedness Mgr.
BA Eastern Illinois University

Thomas Pagano
VP Info Services/CIO

Anna Page
Assoc. Prof./Director, Honors
BA Mount Marty College
MS Univ of Nebraska - Lincoln

Ronald Palcic
Professor Mathematics
AA Palomar College
BS Calif Lutheran University
MED Utah State University
SPC Utah State University

Candace Parker
Professor Nursing
BSN University of Kansas
MS University of Kansas

Robert Parker
Professor EMS
BS Northeastern University

Lisa Parra
Assoc. Prof. Read/Acad Ach Ctr
BA Univ of Missouri - Kansas City
EDS Univ of Missouri - Kansas City
MA Univ of Missouri - Kansas City
SPC Univ of Missouri - Kansas City

James Patterson
Professor Science
BS University of Central Missouri
MS Ball State University
PHD University of Kansas

Thomas Patterson
Assoc. Prof./Dir. Intl Educ
BS Dickinson State University
MA University of Texas Arlington

David Pearce
Sr. Applications Administrator
AA Johnson County Comm College

Kristina Perales
Graduation Analyst

BA Graceland University
MA University of Iowa

Mary Pereira Vinente de Matos
Administrative Assistant

Pete Peterson
Professor Psychology
BA Calif State Univ - Stanislaus
MS Calif State Univ - Stanislaus
PHD University of Kansas

Elizabeth Petre
Administrative Assistant

Beate Pettigrew
Assoc. Prof. Theatre
BFA Emporia State University
BS Emporia State University
MA University of Kansas
MFA Univ of Missouri - Kansas City
SPC Univ of Missouri - Kansas City

James Pettitt
Assoc. Prof. Psychology
BA Point Loma Nazarene College
MS Friends University
PHD Kansas State University

Linda Pickett
Transfer Articulation Analyst

Robert Pitts
Sr. Support Analyst
AA Johnson County Comm College

Robert Poe
Campus Police Dispatcher

Renee Portmann
Dir., Resp Care/Polysom Prog
BS Minnesota State Univ-Moorhead
MS University of Saint Francis

Robert Potemski
Event Manager, Perf. Venues

Preeti Potnis
Testing Specialist, Technology

Rae Power
Dining Services Assistant I

Vickki Powers
Accountant
BA Ottawa University

Aaron Prater
Assoc. Prof. Hospitality Mgmt.
AAS Johnson County Comm College
BA Univ of Missouri - Kansas City

David Prebyl
Help Desk Analyst
BS Univ of Missouri - Kansas City

Q

Loyal Quillen
Production Manager
AAS Johnson County Comm College

Leslie Quinn
Registrar
BA Univ of Arkansas-Fayetteville
MA Univ of Louisiana-Monroe

Rochelle Quinn
Assoc. Prof. Nursing
BSN College of Saint Mary
MSN University of Iowa

R

Michael Rader
Assoc. Prof. Psychology
BS Northwestern Oklahoma St Univ
MS Northwestern Oklahoma St Univ
PHD Northern Arizona University

Sheila Rader
Administrative Assistant

Laura Radke
Senior Project Manager
BS Iowa State University
MBA Univ of Missouri - Kansas City

Virginia Radom
Professor Practical Nursing
BSN Fort Hays State University
MS Central Michigan University
MSN Saint Joseph's College

Mark Raduziner
Professor Journalism/Media Com
BS Univ of Nebraska - Omaha
MA Univ of Missouri - Kansas City

Carol Ramirez
Administrative Assistant

Israel Ramirez
Diversity Recruiter

Charles Randazzo
Assoc. Prof. Electrical Tech.
BA SUNY at New Paltz

Preya Ravi
Accounting Specialist

Sun Rea
Sustainability Project Manager
BS University of Kansas

Rebekah Read
Success Advocate
BA Ottawa University

Zewednesh Reba

Custodian

Bradley Redburn
Professor Psychology
BA Wichita State University
MA Univ of Missouri - Kansas City
PHD Univ of Missouri - Kansas City

Alison Reed
Asst. Prof. Hospitality Mgmt.
AOS The Culinary Institute of America

Karen Reed
Administrative Assistant

Judith Reilly
Prog. Dir., Development
BS Kansas State University
MS University of Kansas

Heather Reinhard
Administrative Assistant

Vivian Reinhard
Assoc. Prof. Mathematics
BA Franciscan Univ of Steubenvill
MS New Mexico State University

Connie Reischman
Assoc. Prof. Health Occ.
BSN University of Kansas
MS University of Central Missouri

Simon Remigio
Sr. Network Analyst
BS Friends University

Tom Renfro
Assoc. Prof. Info. Technology
BA Southwest Baptist University
MED Midwestern Baptist Theo Sem
SPC Converse College

Yolanda Reyes
Dining Services Assistant II

Larry Reynolds
Prof./Dean Comm., Eng./Jrnlsm
AA San Jacinto College Central
BS University of Texas Austin
MA University of Kansas
PHD University of Kansas

Thomas Reynolds
Professor English
BA Washburn University
MFA Wichita State University

Kathleen Rhoades
Public Safety Officer

Richard Rhoades
Vending Services Assistant

Dwight Rhodes

Police Officer

Joy Rhodes
Professor Fash. Merch./Des.
BS Colorado State University
MBA Baker University

Rebecca Ricklefs
P-Card Prog Mgr/Procure Admin

Susan Rider
Dir., Acctg. Services Grants
BS University of Central Missouri
MS University of Kansas

Joann Riggs
Registration Specialist

Michelle Riley
Asst. Prof. Dietary Mgt/Hosp.
BS Univ of Missouri -Columbia
MS Johns Hopkins University

Mindy Ritter
Assoc. Prof. Nursing
MS Univ of Minnesota -Twin Cities

Colleen Rittmann
Administrative Assistant

Melanie Roberts
Counselor
BS Iowa State University
MA University of Iowa

Susan Roberts
Digital Copywriter/Editor

Michael Robertson
Professor Humanities
BA Florida State University
MA Florida State University
PHD Florida State University

Timothy Robinson
Sr. Support Analyst

William Robinson
Professor Mathematics
BS North Dakota State University
MS Univ of Minnesota -Twin Cities

Daniel Robles
Crime Prevention Officer

Ginna Roe
Custodian

Danielle Rogers
Classroom Coor./Lead Teacher
BA University of Kansas

Theodore Rollins
Professor English
BA Ambassador University

MA Colorado State University

Edward Ronnebaum
Assoc. Prof. Nursing
BSN Washburn University
MS Central Michigan University
PHD Univ of Missouri - Kansas City

Gloria Rosso
Counselor
MA Arizona State University

John Rothwell
Executive Sous Chef

Dianna Rottinghaus
Assoc. Prof. Read/Acad Ach Ctr
BS Kansas State University
MS University of Kansas

Janelle Rowe
Lead Student Dev. Specialist
BA College of the Ozarks

Anne Rubeck
Digital Strategist
BA University of Kansas
MA Loyola University

Christina Rudacille
Dir., Pract Nursing HOC
AAS Brown Mackie College
BSN University of Phoenix
MSN South University

Deborah Rulo
Dir., Continuing Education
BS Kansas State University

Susan Rushing
Transfer Articulation Analyst
AA Johnson County Community College

Chandra Russell
Budget Analyst
BA Ottawa University

Gregory Russell
Chief, Police Department

John Russell
Professor/Librarian
BA The College of New Jersey
MBA Kansas State University
MS Syracuse Univ Main Campus
SPC Kansas State University

S

Stephanie Sabato
Professor Graphic Design
AA Longview Community College
BFA Kansas City Art Institute
MFA Virginia Commonwealth Univ

Donna Salkil

Lead Groundskeeper
BS Kansas State University

Michelle Salvato
Professor Psychology
BA Rockhurst University
EDS University of Kansas
MS Avila University
PHD University of Kansas

Stephanie Sandgren
Creative Lead/Designer

Chad Sanner
Assoc Prof. Resp. Care/ND Tech
BS University of Kansas
MA University of Kansas

Diana Sawtelle
Financial Aid Supv-Computing
BA Ottawa University

Theresa Schlicht
Exec. Asst. to Pres. Board
AA Kansas City KS Comm College

Matthew Schmeer
Professor English
BA Univ of Missouri - St Louis
MFA Univ of Missouri - St Louis

Joshua Schmerge
Faculty, Biology
BS University of Wyoming
MS University of Kansas
PHD University of Kansas

Blake Schmidtberger
Doc. Srvs Operations Assistant

Bradley Schmit
Maintenance Mechanic

Teresa Schmitz
Supv. Registration Specialist

Kathy Schoenwandt
Bookstore Merchandise Buyer

Nellie Schuckman
Administrative Assistant

Heather Schull
Assoc. Prof. Nursing
BSN Washburn University
MSN Univ of Missouri - Kansas City

Sheila Schurz
Administrative Assistant

Betsy Schwab
Testing Center Specialist

Jim Schwab
Head Coach, Women Soccer

Mindi Schwartz
TAACCCT Research Analyst
AAS Johnson County Comm College
BSN University of Kansas

Thomas Scofield
Mgr. Tech. Support Svcs.
AA Johnson County Comm College
BS Rockhurst University
MBA MidAmerica Nazarene Univ
MED MidAmerica Nazarene Univ
SPC MidAmerica Nazarene Univ

Alison Scott
Account Planning Coor - Credit

Angela Sears
Assoc. Prof. Nursing
BSN University of Kansas
MSN University of Kansas

Cynthia Seers
Campus Police Dispatcher

Heather Seitz
Assoc. Prof. Science
BS Univ of Nebraska - Lincoln
PHD University of North Carolina

Marilyn Senter
Professor English
BED Univ of Missouri - Columbia
MA Univ of Missouri - Kansas City

David Setser
Professor Electronics
BA University of Central Missouri
BS Missouri Univ ScienceTechnlgy
MBA Univ of Missouri - Kansas City

Stuart Shafer
Professor Sustainable Agri.
BA Western Michigan University
MA University of Kansas
SPC University of California/San Diego

Penny Shaffer
Prog. Dir. Health/Human Svcs.
ADN Johnson County Comm College
BA MidAmerica Nazarene Univ
MA Webster University

Lori Shank
Asst. Prof. Nursing
BSN Rockhurst University
MSN University of Mary

Cheryl Shaw
Admin. Research Asst.

Stephen Shaw
Custodian

Kent Shelley
Coach/Professor

AA Pratt Community College
BGS University of Kansas
MS Emporia State University

Margaret Shelley
Asst. Dean, Enrollment Mngmt
BS Kansas State University
MS Emporia State University

Abebech Shemelis
Custodian

Gretchen Sherk
TAACCCT Grant Project Director
BED University of Kansas
EDD University of Kansas
EDS University of Kansas
MS University of Kansas

Marilyn Sherman
Financial Aid Coordinator

Andrew Shoman
Police Officer

Marilyn Shopper
Professor Human Science
AA Cottey College
BS Univ of Missouri - Columbia
EDD University of Kansas
MS University of Central Missouri

Tamela Shults

Kitzeln Siebert
Asst. Prof. Mathematics
BS Ohio State University
MS Ohio State University

Kevin Siems
Maintenance Mechanic

Robert Simmons
Maintenance Mechanic

Gurbhushan Singh
BS Avila Unviersity
EDD Baker University
MBA Avila University

Elaine Sinn
Administrative Assistant

Kenneth Sissom
Dir., Police Academy
BA Park University
MA Washburn University

Rhonda Slattery
Administrative Assistant

Lori Slavin
Professor Science
BS Pittsburg State University
PHD Kent State University Main

Charles Sloan
Sr. Support Analyst
AA Johnson County Comm College
AAS Johnson County Comm College
BA Ottawa University

Gebdao Smail
Dining Svcs. Supv/Serving

Dianne Smethers
Administrative Assistant

Allison Smith
Professor Art History
BA University of Kansas
MA American University
PHD Univ of Minnesota -Twin Cities

Carol Smith
Prof. Personal Comp/Web App.
BS Emporia State University

David Smith
Professor Hospitality Mgmt.
BA Ottawa University
MLA Baker University

Ivori Smith
Financial Aid Coordinator

Joshua Smith
Prog. Dir., Cont. Educ.
BBA Univ of Missouri - Kansas City
MBA Baker University

Mary Smith
Prof/Director Com. Based Lrng
BSN University of Kansas
MSN University of Kansas

Ryan Smith
Graduation Analyst

Suzanne Smith
Asst. Prof. Info. Systems
BS Phillips University
MS Kansas State University

Thomas Smith
Research Project Coordinator
BA Univ of Missouri - Columbia

Robert Sobieraj
Professor Hospitality Mgmt.
AS Johnson Wales University
BS University of New Haven
MBA University of New Haven
SPC Univ of Missouri - Columbia

Samuel Sommerville
Professor Foreign Language
MA University of Kansas

Joseph Sopcich
President CEO
BA University of Notre Dame

MBA University of Notre Dame
PHD University of Kansas

Michael Souder
Dean, Continuing Education
BS United States Military Academy
MS Naval Postgraduate School

Carol Sparks
Administrative Assistant

Dean Spaulding
Maintenance Supervisor

Adam Spoolstra
Assoc. Prof. Accounting
BS Northern Illinois University
MS Northern Illinois University

Brandon Sprague
RR Lab Technician

Kevin Spykerman
Offset/Digital Technician

Lekha Sreedhar
Professor Horticulture

Kimberly Stabbe
Professor Dental Hygiene
BS University of South Dakota
MS Univ of Missouri - Kansas City

Melinda Stadler
Classroom Coor./Lead Teacher
BS Kansas State University
MA Univ of Missouri - Kansas City

Larry Stanfield
Warehouse/Postal Srvcs. Assoc.

Justin Stanley
Assoc Prof Speech/Debate Coach
BS Missouri State University
MA Univ of Missouri - St Louis

Kristin Stanley
Success Advocate

Bradley Staupp
Sr App. Admin, Desktop Mgmt
BA MidAmerica Nazarene Univ

Kim Steinmetz
Prog Dir Int'l Immigrant Srv
BA Truman State University
MS University of Central Missouri

Kerri Stephenson
Professor Foreign Language
BA Univ of Nebraska - Kearney
MA Middlebury College
SPC Univ of Missouri - Columbia

Melissa Stephenson

Dining Services Assistant I

Kevin Steuber
Sr. Network Analyst

Stephanie Steury
Bookstore AP/AR Specialist

Loralee Stevens
Business Liaison Consultant
BS Baker University
EDD University of Kansas
MS Emporia State University

Dan Stinson
Police Officer

Jackeline Stinson
Custodian

Jill Stinson
Professor HPER
AA Cowley Co Community College
BS University of Kansas
ME University of Kansas

Michael Stithem
Operations Dir., OHEC
BS Kansas State University
ME University of Kansas

William Stockton
Professor History
BA Drake University
MA Brandeis University
PHD Brandeis University

Stephen Storkel
Supv., Computer Lab
BS Willamette University
MA Iowa State University

Stacey Storme
Professor Interpreter Training
BA University of Denver
MED Northeastern University

Daniel Stout
Assoc Prof Speech/Asst. Debate
BS Kansas State University
MA Kansas State University

Felix Sturmer
Professor Hospitality Mgmt.

Lisa Sullivan
Benefits Specialist
BS Kansas State University

Angela Sunderland
Assoc. Prof. Computer Science
BS Avila University
MA Avila University

Mark Swails
Assoc. Prof./Librarian

BA Emory University
MA Emory University
MLS University of North Carolina

Adrian Swan
Mgr. Multimedia Services

Patricia Swartzel
Classroom Coor./Lead Teacher

Maria Sweeney
Administrative Assistant

Susan Swisher
Administrative Assistant

Ronald Symansky
Professor Interpreter Trng
BA Gallaudet University
MA New York University
SPC Gallaudet University

Frank Syracuse
Professor Economics
AB John Carroll University
MBA Avila University

T

Daniel Tamire
Lead Housekeeper

Bernice Taylor
Science - Lab Technician

Michelle Taylor
Sr Research Data Analyst
BBA Washburn University
MBA Penn State University Park

Terri Teal
Professor Vocal Music
BS Louisiana College
MM University of North Texas
PHD University of Kansas
SPC University of Kansas

Candace Tellinghuisen
Public Safety Officer

Adam Terry
Acad Thea Tech Dir/Designer
BFA Viterbo University
MFA Univ of Missouri - Kansas City
SPC Univ of Missouri - Kansas City

Mary Thibault
Supv. HCDC
BA Univ of Missouri - Kansas City
MA Univ of Missouri - Kansas City

Karen Thomas
Mgr. Acctg Grants
BS University of Central Missouri

Leaven Thomas

RR Welding Trainer

Nancy Thomas
Asst. Prof. Fire Science
BS Park University
MS Capella University
PHD Capella University

Ashawnte Thompson
Bookstore Sales Supervisor
AA Johnson County Comm College

Gretchen Thum
Asst. Prof. Journalism
BS University of Kansas
MA Univ of Missouri - Kansas City
MS University of Kansas
SPC Univ of Missouri - Kansas City

Jessica Tipton
Assoc. Prof./Librarian
BS Kansas State University
EDS University of Central Missouri
MA Univ of Missouri - Columbia
SPC University of Central Missouri

Hanna Tiruneh
Admin. Support Coordinator

Gail Tracy
Fin. Aid Process/Reg. Supv.
AB Ripon College

Richard Tremain
Assoc. Prof. Metal Fabrication
BS Pittsburg State University
MS Pittsburg State University
SPC Pittsburg State University

James Trezvant
Housekeeping Warehouser

Emma Tsega
Custodian

Robert Tucker
Maintenance Mechanic

Anne Turney
Mgr. Student Life/Ldrshp Dev.

V

Mark Van Gorp
Assoc. Prof. Computer Science
MS University of Colorado
PHD Iowa State University

Ava Van Roekel
Dining Services Assistant I

Ashley Vasquez
Asst. Prof. Speech
BA Park University
MA Park University

Jennifer Vasquez
Professor/Fac. Esthetics

Pamela Vassar
Asst. Dean, Student Life
BED Truman State University
MS Western Illinois University

Judith Vaughn
Professor/Librarian
BS University of Kansas
MA Univ of Missouri - Columbia

Philip Veer
Professor Mathematics
BS Friends University
MS Emporia State University

Hema Venkata Ramani
Admin. Asst./Acctg. Clerk

Edward Vesey
Police Officer

Jean Ann Vickers
Professor Science
BA Baylor University
MA Baylor University

Julie Vivas
Mgr. Employee Relations
BA University of Cal/San Diego
JD University of the Pacific
LLM University of the Pacific
MS Colorado State University

Michael Vochatzer
Senior Offset/Digital Tech.

Janelle Vogler
Exec Dir Audit/Advisory Svcs.
BS Kansas State University

W

Elisa Waldman
Dir., SBDC
BA Harvard University
JD George Washington University

Shun Wang
Professor Mathematics
BA Washington State University
MS Washington State University

Darrell Wapp
RR Welding Trainer
BS Kansas State University
MS Kansas State University

William Wargin
Police Officer

Sandra Warner
Deputy CIO/Dir. ACS
BA University of Kansas

MBA Univ of Missouri - Kansas City

Amy Warner Koch
Counselor
BA Hastings College
MA Univ of Nebraska - Lincoln

Margaret Warren
Custodian

Charles Watson
Assoc. Prof. Science
BS Miami University
PHD University of Arizona

Larry Weaver
Assoc. Prof. Science
AA Johnson County Comm College
BS University of Kansas
MA Indiana University-Bloomington
MS Indiana University-Bloomington
PHD Indiana University-Bloomington

Perla Weaver
Asst. Prof. Computer Science
MS Kansas State University
SPC Avila University

Frederick Webb
Professor Business Admin.
BS Baker University
MBA Avila University

Randall Weber
VP, Student Success/CSAO
BS University of Kansas
EDD Baker University
MS University of Kansas

Richard Weis
Professor/Director, HPER
BS Oklahoma State University
MED Wichita State University

Alexander Wells
Counselor
BS Northwest Missouri State Univ
MS Avila University

Steven Werkmeister
Professor English
BA Univ of Nebraska - Lincoln
MA Univ of Nebraska - Lincoln
SPC Univ of Nebraska - Lincoln

Michael West
Dean, Business Technology
BS Univ of Missouri - Columbia
MBA Univ of Missouri - Columbia

Stephanie Whitehead
Transcript Analyst

Samantha Wigginton
Campus Police Dispatcher

AA Johnson County Comm College

Cheryl Wilkerson
Administrative Assistant

Christal Williams
Dir., Financial Aid
BS Avila University
MBA Avila University
MS Avila University

Deborah Williams
Professor Science
BS Kansas State University
JD University of Kansas
MA University of Kansas
MS Kansas State University
PHD University of Kansas

Whitney Williamson
Museum Registrar
BFA University of Kansas
MA University of Kansas

Adrienne Wilson
Prog Dir, Events/Communication
BFA University of Kansas

Nancy Wilson
Professor Graphic Design
BFA Kansas City Art Institute
MFA University of Kansas

Steven Wilson
Professor Mathematics
BA University of Chicago
MT University of Chicago
SPC University of South Carolina

Tanya Wilson
General Counsel
BA Univ of Southern California
JD University of Kansas

Tondalaya Wilson
Police Officer

Jennifer Winchester
Prog. Dir., Cont. Educ.
BA MidAmerica Nazarene Univ

Kathy Wing
Mgr. Compensation/HR Systems
BA Univ of Missouri - Kansas City
BS University of Central Missouri
MA University of Saint Mary

John Winter
Custodial Supervisor

Sharon Wirsig
Supv., Testing Services

Stephen Wnek
Professor EMS
BA Clark University

MA Univ of Missouri - Kansas City

Damte Woldetsadik
Lead Housekeeper

Daniel Woldetsadik
Lead Housekeeper

Dianne Wolf
Kitchen Supv. HCDC

Christina Wolff
Assoc. Prof. Foreign Language
BA University of Kansas
MA University of Kansas

Luanne Wolfgram
Professor Biotechnology
BS University of Wisconsin
PHD Johns Hopkins University

Mark Woods
Maintenance Mechanic

Christopher Worthington
Senior Buyer
AA Johnson County Comm College
BA MidAmerica Nazarene Univ

Brian Wright
Professor Political Science
BA Duquesne University
MA Duquesne University
PHD Kent State University

Gwen Wright
Asst. Prof. Human Sciences
BS Missouri State University
MS Kansas State University

So Ying Wu
Administrative Assistant

Y

Genet Yargal
Custodian

Patrick Yeung
Sr. Client Tech. Analyst
AA Penn Valley Community College
BBA Univ of Missouri - Kansas City
MS University of Kansas

Debra Young
Degree Audit Coor/Curr Liaison
BA Ottawa University

Myra Young
Professor Speech
BS Northwest Missouri State Univ
MA University Northern Colorado
SPC University of Kansas

Stephen Young

Greenhouse Manager

Z

Zachary Zahringer
Sr. Ed Tech Analyst

Paula Zarrelli
Facilities Scheduling Coor.

Kelsey Zimmerlee
Digital Technician

Gerald Zimmerman
Mgr. Benefits
BA Kansas State University
MBA Kansas State University

Brian Zirkle
Assoc. Prof. Sociology
BA Wichita State University
MA University of Kansas
PHD University of Kansas

Mark Zolton
Internet/Web Architect
BS Kansas State University

Leon Zook
Stationary Engineer

Kena Zumalt
Veteran Services Coordinator

Past Catalogs

PDF Archives

2014
Spring (http://catalog.jccc.edu/pdf/2014-spring.pdf)

2013
Fall (http://catalog.jccc.edu/pdf/2013-fall.pdf)
Spring (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Spring_2013.pdf)

2012
Fall (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Fall_2012.pdf)
Spring (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Spring_2012.pdf)

2011
Fall (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Fall_2011.pdf)
Spring (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Spring_2011.pdf)

2010
Fall (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Fall_2010.pdf)
Spring (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Spring_2010.pdf)

2009
Fall (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Fall_2009.pdf)
Spring (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Spring_2009.pdf)

2008
Fall (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Fall_2008.pdf)
Spring (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Spring_2008.pdf)

2007
Fall (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Fall_2007.pdf)
Spring (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Spring_2007.pdf)

2006
Fall (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Fall_2006.pdf)
Spring (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Spring_2006.pdf)

2005
Fall (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Fall_2005.pdf)
Spring (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Spring_2005.pdf)

2004
Fall (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Fall_2004.pdf)
Spring (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Spring_2004.pdf)

Fall 2003 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_Fall_2003.pdf)

2002-2003 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_2002-2003.pdf)

2001-2002 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_2001-2002.pdf)

2000-2001 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_2000-2001.pdf)

1999-2000 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1999-2000.pdf)

1998-1999 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1998-1999.pdf)

1997-1998 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1997-1998.pdf)

1996-1997 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1996-1997.pdf)

1995-1996 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1995-1996.pdf)

1994-1995 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1994-1995.pdf)

1993-1994 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1993-1994.pdf)

1992-1993 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1992-1993.pdf)

1990-1992 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1990-1992.pdf)

1988-1989 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1988-1989.pdf)

1987-1988 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1987-1988.pdf)

1986-1987 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1986-1987.pdf)

1985-1986 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1985-1986.pdf)

1984-1985 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1984-1985.pdf)

1983-1984 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1983-1984.pdf)

1982-1983 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1982-1983.pdf)

1981-1982 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1981-1982.pdf)

1980-1981 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1980-1981.pdf)

1979-1980 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1979-1980.pdf)

1978-1979 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1978-1979.pdf)

1977-1978 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1978-1979.pdf)

1976-1977 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1976-1977.pdf)

1975-1976 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1975-1976.pdf)

1974-1975 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1974-1975.pdf)

1973-1974 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1973-1974.pdf)

1972-1973 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1972-1973.pdf)

1971-1972 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1971-1972.pdf)

1969-1970 (http://catalog.jccc.edu/pastcatalogspdf/JCCC_archive_1969-1970.pdf)

Archived Sites

2015-16 Academic Year (http://catalog.jccc.edu/archives/2015-16)

Spring 2015 (http://catalog.jccc.edu/archives/spring2015)
     Addendum - Spring 2015 (http://catalog.jccc.edu/pastcatalogspdf/legal-admin-asst-addendum-spring-15.pdf)

Fall 2014 (http://catalog.jccc.edu/archives/fall2014)

Spring 2014 (http://catalog.jccc.edu/archives/spring2014)

Fall 2013 (http://catalog.jccc.edu/archives/2013)

Index

A

M

N

O

P

R

S

T

V

W