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Catalog Home

Credit Catalog

Welcome to the Johnson County Community College Catalog of credit bearing courses and programs.

JCCC offers a wide variety of coursework, certificates and degrees. Career programs provide students the opportunity to prepare for specific careers and enter the job market directly. Transfer degrees may offer students the opportunity to complete 2-years of a 4-year degree at JCCC and transfer to another college or university.

This credit catalog covers the academic year 2020-2021 which includes summer 2020, fall 2020 and spring 2021 semesters.

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

Accounting (ACCT)

Courses

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.

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.

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 an increased emphasis on their interpretation, and be introduced to managerial accounting concepts.

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.

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.

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.

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.

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 cost analysis, cost allocation and budgeting reports to management.

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.

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.

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.

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

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 with a grade of "C" or higher or FL 180 with a grade of "C" or higher.

This course will focus on continued development of elementary American Sign Language skills beyond those taught in Elementary ASL I. Students will work on developing communication competencies, concentrating on comprehension and production skills. Information about the linguistic and cultural features will be included in the context of language learning experiences. 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 with a grade of "C" or higher or FL 181 with a grade of "C" or higher.

This course will focus on the development of intermediate American Sign Language communication skills. Comprehension skills and linguistic features of the language taught in context will be emphasized. 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 : ASL 122 with a grade of "C" or higher or INTR 122 with a grade of "C" or higher or FL 270 with a grade of "C" or higher.

The course will continue study of intermediate American Sign Language. It is designed to develop further intermediate communication skills in American Sign Language. Information about the linguistic and cultural features will be included in the context of language learning experiences. 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 : ASL 122 with a grade of "C" or higher or INTR 122 with a grade of "C" or higher or FL 270 with a grade of "C" or higher.

This course introduces students to the structural and grammatical principles of ASL. Students will explore concepts of equivalency between English and ASL. 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 with a grade of "C" or higher 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. INTR 145 and ASL 145 are the same course; do not enroll in both.

ASL 147 Fingerspelling I* (2 Hours)

Prerequisites : ASL 121 with a grade of "C" or higher 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. INTR 147 and ASL 147 are the same course; do not enroll in both.

ASL 150 American Sign Language Literature* (3 Hours)

Prerequisites : 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.

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.

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.

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.

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.

ANI 210 Digital Sculpting* (3 Hours)

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.

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 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.

ANI 245 Character Animation* (3 Hours)**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.

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.

ANI 258 Game Level Design* (3 Hours)**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.

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.

ANI 270 Visual Effects and Compositing* (3 Hours)**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.

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.

Anthropology (ANTH)

Courses

ANTH 125 Cultural Anthropology (3 Hours)

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 Art (3 Hours)

This course will introduce students to some of the many art forms of the various American Indian nations of the United States. Media to be explored include textiles, beadwork, quillwork, basketry, pottery, painting, sculpture, and jewelry making. In addition, larger socio-economic issues that address American Indian art in relation to trade, art markets, and legal influences on American Indian art making will be discussed. Lectures, discussions, readings, films, and gallery visits will be used to accomplish this. Special emphasis will be paid to the collection of contemporary American Indian art housed in the Nerman Museum's Indian Art Focus Areas.

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.

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)

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.

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.

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.

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.

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)

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.

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.

ART 129 Design Color (3 Hours)

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.

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)

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.

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.

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.

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.

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.

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 199 Fine Arts Symposium (1 Hour)

The purpose of this course is to introduce students to the art world. The students will see art and attend art talks from successful artists from around the country, the region, and/or the world. The Fine Art, Photo and Filmmaking Symposium has the holistic intent of teaching students the importance of learning from and participating in the art community at-large. This course requires students to attend artists' talks, studio visits, film festivals, and/or exhibitions at screenings, galleries and/or museums. Students will be better informed about the current state of the industry and what it is like to work in the field. Students will prepare for art venues, exhibitions, and lectures before attending via a faculty-led briefing on what they are about to experience and what is expected for them to learn and observe.

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.

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.

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.

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.

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.

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.

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 292 Special Topics: (1-3 Hour)

This course periodically offers specialized or advanced discipline-specific content related to the study of fine art, 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 Fine Arts curriculum. Students may repeat Special Topics in Fine Arts for credit but only on different topics.

Art History (ARTH)

Courses

ARTH 180 Art History: Ancient to Medieval (3 Hours)

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.

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)

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.

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.

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.

ARTH 200 Women, Art, and Society (3 Hours)

This course examines the various roles women have played in the history of Western art – as artists, patrons, teachers, subjects and activists. We will investigate (chronologically and thematically) the ways in which women have been depicted in art (religious, mythological and secular images of women) – beginning with the prehistoric and Egyptian periods and continuing to the present day. Additionally, we will study prominent women in history who have had significant impact on the arts as active participants in the art world from the Middle Ages to the present. Lastly, we will investigate activism of contemporary women artists working today. Artists will be studied in slide and video format in class, through the reading of primary sources, and in site visit opportunities to local museums.

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)

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)

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 an 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, BIOL 214, CHEM 214, GEOS 214, MATH 171, PHYS 214 and PSCI 214 are the same course; enroll in only one.

ASTR 215 Introduction to Teaching Math and Science II* (1 Hour)

Prerequisites : ASTR 214 with a grade of "C" or higher or BIOL 214 with a grade of "C" or higher or CHEM 214 with a grade of "C" or higher or GEOS 214 with a grade of "C" or higher or MATH 214 with a grade of "C" or higher or PHYS 214 with a grade of "C" or higher 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.

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)

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)

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 122 Industrial Code (3 Hours)

This course addresses how to reference and interpret common electrical codes found in an industrial setting. Electrical standards, such as the National Fire Protection Association (NFPA), National Electrical Code (NEC), National Electrical Manufacturers Association (NEMA) and Underwriters Laboratories (UL), will be utilized in this course.

AET 140 Actuator and Sensor Systems* (3 Hours)

Prerequisites : ELTE 110.

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.

AET 160 Programmable Logic Controllers I* (3 Hours)

Prerequisites : ELTE 110.

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.

AET 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.

AET 240 Industrial Robotics* (3 Hours)

Prerequisites : ELTE 110.

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.

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.

Automotive Technology (AUTO)

Courses

AUTO 114 Introduction to Automotive Practices (4 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, tool usage, information management and become proficient in general vehicle service and minor electrical diagnosis, while maintaining good work habits and ethics. Emphasis will be placed on learning basic skills needed to enter advanced automotive classes.

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 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)

Corequisites: AUTO 131.

Prerequisites or corequisites: AUTO 125.

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.

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.

AUTO 131 Brakes II* (1 Hour)

Corequisites: AUTO 129.

Prerequisites or corequisites: AUTO 125.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

AUTO 271 Automotive Technology 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 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.

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.

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

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 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.

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.

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 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.

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 135 Principles of Cell and Molecular Biology (4 Hours)

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.

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)

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.

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)

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.

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.

BIOL 150 Biology of Organisms* (5 Hours)

Prerequisites : (RDG 126 or College Reading Readiness) and (BIOL 125 or BIOL 127 or BIOL 135) or department approval.

This is a survey of the three domains of life. Archaea, bacteria, and eukaryotes will be presented, with emphasis on life cycles, anatomy, physiology, evolution, and ecology of the major groups.

BIOL 150H HON: Biology of Organisms* (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 161 Introduction to Biotechnology* (4 Hours)

Prerequisites : CHEM 122 with a grade of "C" or higher or (CHEM 124 with a grade of "C" or higher and CHEM 125 with a grade of "C" or higher).

Prerequisites or corequisites: BIOL 135 with 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. General manufacturing practice will be utilized throughout the course and students will use and develop Standard Operating Procedures for biotechnology related protocols. Students will learn the history and ethical uses of biotechnology and be expected to communicate topics related to biotechnology to the general public.

BIOL 205 General Genetics* (4 Hours)

Prerequisites : BIOL 135 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.

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.

BIOL 215 Introduction to Teaching Math and Science II* (1 Hour)

Prerequisites : ASTR 214 with a grade of "C" or higher or BIOL 214 with a grade of "C" or higher or CHEM 214 with a grade of "C" or higher or GEOS 214 with a grade of "C" or higher or MATH 214 with a grade of "C" or higher or PHYS 214 with a grade of "C" or higher 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.

BIOL 225 Human Physiology* (4 Hours)

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.

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.

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.

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 or corequisites: BIOL 230.

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

BIOL 235 General Nutrition* (3 Hours)

Prerequisites : CHEM 122 or (CHEM 124 and CHEM 125) and BIOL 144 or (BIOL 140 and

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.

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.

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 260 Biotechnology Methods* (5 Hours)

Prerequisites : BIOT 160 with a grade of "C" or higher and BIOT 165 with a grade of "C" or higher.

Prerequisites or corequisites: BIOT 230 with 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.

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)

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)

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.

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.

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 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 Law (BLAW)

Courses

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

This course introduces students to the organization and structure of the American legal system as it applies to business. Upon successful completion of this course, students should be able to identify potential legal problems in their businesses and recognize when to engage the services of an attorney. The application of legal ethics to business situations will be covered. The distinction between criminal law and civil tort law, and how to apply criminal law and civil law to factual situations involving businesses, will be taught. The common law and Article 2 of the Uniform Commercial Code will be applied to contracts. Intellectual property, the principles of agency, and the different forms of business organizations will be introduced.

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

A continuation of Business Law I, this course teaches students the principles of property, secured transactions, business formation, corporate law, and administrative law. Upon successful completion of this course, students should be able to identify potential legal problems in their businesses and recognize when to engage the services of an attorney. Concepts of real property, personal property, bailments, estates and trusts, and insurance law will be covered. The formation, operation, and dissolution of the different business forms will be taught. The principles of bankruptcy law, professional responsibility, shareholders' rights, employment law, and environmental law will be introduced.

Business Office Technology (BOT)

Courses

BOT 101 Keyboarding (1 Hour)

This course is for students who do not know how to correctly keyboard by touch. This course is also for students who need to improve their keyboarding speed to at least 25 words per minute. 1 hr./wk.

BOT 103 Business English and Proofreading (3 Hours)

This course will focus on reviewing and applying business English rules by composing grammatically correct sentences and proofreading and correcting grammar errors in printed and electronic documents. 3 hrs. lecture/wk.

BOT 105 Business Document Preparation and Management* (3 Hours)**Prerequisites :** BOT 101 or waiver exam.

This course will prepare students to effectively and efficiently create, format and proofread business documents, such as letters, memos, emails, tables, reports, PDFs, envelopes, labels and other administrative documents, utilizing word processing skills. File management and operating system functions are included. Students will also practice proper keyboarding technique to build speed and accuracy.

BOT 130 Business Office Procedures (3 Hours)

This course will prepare the student to apply business office procedures relevant to today's digital office. Emphasis will be on essential hard skills including operating office equipment, handling telephone systems, managing calendars, scheduling appointments, organizing meetings, arranging travel, processing mail, handling banking activities and managing records. In addition, the student will learn about the administrative professional career field. 3 hrs.lecture/wk.

BOT 141 Electronic Health Records Applications (3 Hours)

This course will prepare the student to effectively use an electronic health record and practice management program 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 150 Records Management* (3 Hours)**Prerequisites :** BOT 106 or CPCA 114 or CPCA 128 or department approval.

This course will prepare the student to store, retrieve, protect, transfer, and retain or destroy physical and electronic records. This course provides information about the records management industry, legislation, filing procedures, storage methods, needed supplies and career opportunities.

BOT 160 Legal Document Preparation and Terminology* (3 Hours)**Prerequisites :** BOT 105 and CPCA 128.**Prerequisites or corequisites:** CPCA 228.

This course will prepare the student to demonstrate the preparation of legal documents and the use of legal terminology in the proper context. The course will emphasize using legal reference resources and transcribing legal documents from dictation using proper formatting rules.

BOT 170 Introduction to 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, ICD-10, HCPCS and CPT procedural coding systems as well as payers. Students will be given hands-on coding advice for optimal insurance reimbursement.

BOT 205 Workplace Professionalism (1 Hour)

In this course students will develop and identify behaviors, values and methods that promote professionalism in the workplace.

BOT 260 Desktop Publishing for the Office* (3 Hours)**Prerequisites :** CPCA 128.

This course will prepare students to use a desktop publishing program to design, format, edit and print business office publications such as letterheads, business cards, newsletters, brochures, emails, business forms, manuals and other promotional materials using basic and advanced desktop publishing features.

BOT 265 Business Office Simulation* (3 Hours)**Prerequisites :** Department approval.

This capstone course is for students who will demonstrate advanced business office and technology skills, knowledge and abilities for working in a simulated office environment with their peers. Students will work in various office positions as a member of the team to manage projects, solve problems and make decisions.

BOT 275 Office Internship* (1 Hour)

Prerequisites or corequisites: BOT 265.

This course provides the student an opportunity to apply his/her knowledge, skills and abilities acquired in the AAS Administrative Assistant program to an appropriate work environment. The internship will require a minimum of 120 hours of workplace 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)

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.

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.

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)

Prerequisites : RDG 126 or College Reading Readiness.

Corequisites: CHEM 125.

Prerequisites or corequisites: MATH 171 or MATH 173 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.

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)

Prerequisites : RDG 126 or College Reading Readiness.

Corequisites: CHEM 124.

Prerequisites or corequisites: MATH 171 or MATH 173 or placement test.

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

CHEM 131 General Chemistry II Lecture* (4 Hours)

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.

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)

Prerequisites : CHEM 124 and CHEM 125 (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).

Corequisites: CHEM 131

The laboratory consists of qualitative and quantitative experiments designed to parallel and support General Chemistry II Lecture.

CHEM 140 Principles of Organic & Biological Chemistry* (5 Hours)

Prerequisites : (BIOL 121 or BIOL 135) and 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.

CHEM 214 Introduction to Teaching Math and Science I* (1 Hour)

Prerequisites : MATH 171 with a grade of "C" or higher or an appropriate score on a 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.

CHEM 215 Introduction to Teaching Math and Science II* (1 Hour)

Prerequisites : ASTR 214 with a grade of "C" or higher or BIOL 214 with a grade of "C" or higher or CHEM 214 with a grade of "C" or higher or GEOS 214 with a grade of "C" or higher or MATH 214 with a grade of "C" or higher or PHYS 214 with a grade of "C" or higher 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.

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.

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.

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.

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/exterior. This course is offered in the spring semester. 3 hrs. lecture/wk.

CET 125 Construction Specifications* (2 Hours)

Prerequisites or corequisites: CET 105.

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.

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.

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.

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.

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.

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.

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.

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.

College Success (COLL)

Courses

COLL 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, interests, skills, and values.

COLL 150 Job Search Skills (1 Hour)

This class presents the skills students need to conduct an effective job search, including locating job leads, writing resumés, 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.

COLL 174 Learning Strategies for Math (1 Hour)

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. College Success 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.

COLL 176 College Study Strategies (1 Hour)

Upon completion of this course, students will be able to apply a series of strategies for processing college-level information from textbooks and lectures including effective test preparation 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. College Success courses offer students opportunities to acquire the thinking and cognitive skills needed to be a successful learner, including reading textbooks, taking notes, organizing information, and preparing for tests.

COLL 178 Memory Strategies (1 Hour)

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. College Success 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.

COLL 186 Exam Strategies (1 Hour)

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. College Success 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.

COLL 200 College Success Strategies (3 Hours)

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. College Success 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.

Communication Studies (COMS)

Courses

COMS 120 Interpersonal Communication (3 Hours)

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.

COMS 121 Public Speaking (3 Hours)

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, organization, audience analysis, listening skills, and delivery techniques. Students will deliver a variety of speech types including informative and persuasive.

COMS 125 Personal Communication (3 Hours)

This course examines the theory and concepts of the most frequently used human communication skills, interpersonal communication and public speaking, in a variety of contexts. 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 also provides practice and development of skills in both areas.

COMS 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 participate in debate rounds in order to develop skills in research, argument construction, debate format, intercollegiate debate speaking style and refutation.

COMS 132 Intermediate Debate I* (3 Hours)

Prerequisites : COMS 130.

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.

COMS 155 Workplace Skills (1-2 Hour)

This course focuses on communication concepts and skills utilized in the workplace. The course demonstrates the relationships between listening; oral communication; human relations skills; problem-solving and teamwork dynamics; time and resource management; and work ethics and job interviewing; with success in a student's desired field.

COMS 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.

COMS 230 Intermediate Debate II* (3 Hours)

Prerequisites : COMS 132

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.

COMS 235 Advanced Debate* (3 Hours)

Prerequisites : COMS 230.

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.

COMS 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.

COMS 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 Communication Studies curriculum. Students may repeat Special Topics in Communication Studies for credit, but only on different topics.

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.

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.

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.

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.

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.

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.

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)

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 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.

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.

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.

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.

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.

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.

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.

CIS 270 Information Systems Internship* (3 Hours)

Prerequisites : Department approval and (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.

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 course is designed to give the student an overview of essential personal computer concepts and skills. Current topics include computer terminology, hardware components, system software, application software, file management, email and the internet. Hands-on, real-world projects will be performed to reinforce the concepts taught. 1 hr. lecture /wk.

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

This course is designed to give the student an overview of essential Macintosh (Mac) computer concepts and skills. Current topics include computer terminology, hardware components, operating system software, application software, file management, email and the internet. Hands-on, real-world projects will be performed to reinforce the concepts taught. 1 hr. lecture/wk.

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

Upon successful completion of this course, students will demonstrate proficiency with word processing software on a personal computer. Foundational word processing competencies, including creating, saving and editing documents; inserting and resizing graphic images; creating and applying styles and themes; creating headers and footers; and setting up tables will be covered. Students will also create multipage reports and incorporate desktop publishing concepts and features.

CPCA 109 Google Apps* (1 Hour)**Prerequisites or corequisites:** 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 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 Contacts, Google Calendar, Google Docs, Google Drive and Google Sites. Hands-on, practical projects will be performed to reinforce the concepts taught.

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

Upon successful completion of this course, students will demonstrate proficiency with 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.

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

This course is a continuation of CPCA 110, Spreadsheets I: MS Excel, 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.

CPCA 113 Spreadsheets I, II & III: MS Excel* (3 Hours)**Prerequisites :** CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on a waiver test.

Upon successful completion of this course, students will demonstrate advanced proficiency with spreadsheet software on the personal computer. Business decision-making worksheet models will be created and modified by entering labels, functions and formulas. Additionally, students will perform manual and automated what-if analyses, manage data in worksheets with tables and database functions, create and edit charts and use multiple worksheets to build consolidated statements. Macros, advanced formulas and data intelligence tools will be covered.

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.

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.

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.

CPCA 118 Groupware: Outlook* (1 Hour)

Prerequisites or corequisites: 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 the application to compose, send, open and reply to email; organize email; manage calendars; use contact management features; and work with tasks.

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.

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.

CPCA 123 E-Presentation: MS PowerPoint* (1 Hour)

Prerequisites or corequisites: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on a waiver test.

Upon successful completion of this course, students will demonstrate proficiency with presentation software on a personal computer. Foundational presentation competencies, including planning, creating and editing a presentation; inserting graphics and objects; creating speaker notes; creating and formatting tables; applying transitions and animations; formatting custom shapes; and creating a self-running presentation, will be covered.

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

Prerequisites or corequisites: CPCA 108 or CPCA 128.

This is a continuation of CPCA 108, Word Processing I: MS Word. After completing this course students should be able to use advanced concepts and applications of word processing software. The applications include working with templates, creating and modifying styles, customizing themes, generating a table of contents, using mail merge, linking and embedding objects, creating and editing macros, customizing Word and automating parts of a document.

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.

CPCA 134 Managing Your Macintosh* (1 Hour)

Prerequisites : CPCA 106 or an appropriate score on a waiver test.

In this career-related course, students will be introduced to essential Macintosh (Mac) computer concepts and skills. Topics include the operating system (OS) tools; third-party utility software installation and use; backup applications and usage techniques; and font management. Hands-on, practical projects will be performed to reinforce the concepts taught.

CPCA 138 Windows for Microcomputers* (1 Hour)

Prerequisites or corequisites: CPCA 105 or CPCA 106 or CPCA 128 or CIS 124 or an appropriate score on a waiver test.

This course is designed to give the student an overview of the Windows Operating System. Topics include personalizing the work environment; advanced personalization and customization techniques; advanced search techniques; managing digital media; and managing networks, security and utilities. Hands-on, real-world projects will be performed to reinforce the concepts taught.

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.

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.

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.

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.

CPCA 228 PC Applications II: MS Office* (3 Hours)

Prerequisites : CPCA 128 or (CPCA 108 and CPCA 110 and CPCA 114).

This course builds on the skills covered in CPCA 128, PC Applications: MS Office. After completing this course students should be able to use advanced concepts and applications of word processing, spreadsheet and database software. Hands-on practical projects will be performed to reinforce the concepts taught.

CPCA 290 Computer Support Specialist Internship* (2 Hours)

Prerequisites : Department 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 knowledge and skills acquired in the Computer Support Specialist program. An average of 40-60 onsite hours will be required along with class assignments for a total of 90 hrs./semester.

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 : Department 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.

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 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 201 or CS 205 or MATH 241 or an appropriate score on department waiver test or department approval.

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.

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.

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 with a grade of "B" or higher or a higher level MATH course with a grade of "C" or higher.

This course focuses on the study of topics in Discrete Structures aimed at applications in Computer Science. Students will study logic, methods of proof including induction, set theory, relations, functions and Boolean algebra. They will develop general problem-solving skills.

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 with a grade of "C" or higher.

This second course in Discrete Structures is aimed at solving problems in Computer Science. Students will study computation, induction, recursion, integers, counting, graphs and trees. They will develop general problem-solving and programming skills.

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)

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)

Corequisites: CO 100.

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 with a grade of "C" or higher and CO 111 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 with a grade of "C" or higher and CO 111 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.

Criminal Justice (CJ)

Courses

CJ 121 Introduction to Criminal Justice System (3 Hours)

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.

CJ 122 Police Operations* (3 Hours)**Prerequisites :** CJ 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.

CJ 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.

CJ 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. CJ 127 and SOC 127 are the same course. Do not enroll in both.

CJ 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.

CJ 133 Juvenile Behavior (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.

CJ 141 Criminal Law* (3 Hours)**Prerequisites :** CJ 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.

CJ 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.

CJ 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.

CJ 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.

CJ 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.

CJ 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.

CJ 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.

CJ 180 Correctional Casework* (3 Hours)**Prerequisites :** CJ 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.

CJ 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.

CJ 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.

CJ 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.

CJ 223 The World of Crime* (3 Hours)

Prerequisites : CJ 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.

CJ 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.

CJ 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.

CJ 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.

CJ 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.

CJ 265 Advanced Police Training* (12 Hours)

Prerequisites : Department approval - 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.

CJ 275 Police Leadership* (3 Hours)

Prerequisites : CJ 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.

CJ 285 Criminal Justice Internship* (3 Hours)

Prerequisites : Fifteen credit hours in CJ courses and department approval or a 2.0 or higher grade point average and department approval.

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.

CJ 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.

CJ 292 Special Topics: (1-3 Hour)

This course will be offered periodically and will focus on topical, specialized or advanced discipline-specific content related to the field of criminal justice usually not offered in the curriculum. Due to the scope of the discipline, this course may expand on current topics in the existing curriculum. Additionally, the topics may synthesize topics found in the current curriculum or explore topics not currently addressed in the Administration of Justice course offerings. Students may repeat Special Topics in Administration of Justice using a different topic as the subject of this course.

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.

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 various tools.

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.

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.

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.

DS 260 Data Mining* (3 Hours)

Prerequisites : DS 210.

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.

DS 270 Introduction to Machine Learning* (3 Hours)

Prerequisites : DS 210.

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.

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.

Dental Hygiene (DHYG)

Courses

DHYG 121 Clinical Dental Hygiene I: Pre-Clinic* (5 Hours)

Prerequisites : Admission to the Dental Hygiene Program and BIOL 225 with a grade of "C" or higher and BIOL 230 with a grade of "C" or higher and BIOL 231 with a grade of "C" or higher and CHEM 122 with a grade of "C" or higher and ENGL 121 and PSYC 130.

Corequisites: DHYG 125 and DHYG 138 and DHYG 142.

Prerequisites or corequisites: SOC 122.

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.

DHYG 121H HON: Clinical Dental Hygiene I: Pre-Clinic* (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 125 Developmental Dentistry* (2 Hours)

Prerequisites : Admission to the Dental Hygiene Program and BIOL 225 with a grade of "C" or higher and BIOL 230 with a grade of "C" or higher and BIOL 231 with a grade of "C" or higher and CHEM 122 with a grade of "C" or higher and ENGL 121 and PSYC 130.

Corequisites: DHYG 121 and DHYG 138 and DHYG 142.

Prerequisites or corequisites: SOC 122.

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

DHYG 135 Dental Materials* (2 Hours)

Prerequisites : Admission to the Dental Hygiene Program and DHYG 121 with a grade of "C" or higher and DHYG 125 with a grade of "C" or higher and DHYG 138 with a grade of "C" or higher and DHYG 142 with a grade of "C" or higher and SOC 122.

Corequisites: DHYG 140 and DHYG 146 and DHYG 148.

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.

DHYG 138 Head and Neck Anatomy* (2 Hours)

Prerequisites : Admission to the Dental Hygiene Program and BIOL 225 with a grade of "C" or higher and BIOL 230 with a grade of "C" or higher and BIOL 231 with a grade of "C" or higher and CHEM 122 with a grade of "C" or higher and ENGL 121 and PSYC 130.

Corequisites: DHYG 121 and DHYG 125 and DHYG 142.

Prerequisites or corequisites: SOC 122.

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.

DHYG 140 Clinical Dental Hygiene II* (4 Hours)

Prerequisites : Admission to the Dental Hygiene Program and DHYG 121 with a grade of "C" or higher and DHYG 125 with a grade of "C" or higher and DHYG 138 with a grade of "C" or higher and DHYG 142 with a grade of "C" or higher and SOC 122.

Corequisites: DHYG 135 and DHYG 146 and DHYG 148.

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.

DHYG 142 Dental Radiography* (2 Hours)

Prerequisites : Admission to the Dental Hygiene Program and BIOL 225 with a grade of "C" or higher and BIOL 230 with a grade of "C" or higher and BIOL 231 and CHEM 122 with a grade of "C" or higher and ENGL 121 and PSYC 130.

Corequisites: DHYG 121 and DHYG 125 and DHYG 138.

Prerequisites or corequisites: SOC 122.

This course prepares the dental hygiene student to expose, process and critique intra and extra oral 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.

DHYG 142H HON: Dental Radiography* (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 146 Periodontics* (3 Hours)**Prerequisites :** Admission to the Dental Hygiene Program and DHYG 121 with a grade of "C" or higher and DHYG 125 with a grade of "C" or higher and DHYG 138 with a grade of "C" or higher and DHYG 142 with a grade of "C" or higher and SOC 122.**Corequisites:** DHYG 135 and DHYG 140 and DHYG 148.

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

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 :** Admission to the Dental Hygiene Program and DHYG 121 with a grade of "C" or higher and DHYG 125 with a grade of "C" or higher and DHYG 138 with a grade of "C" or higher and DHYG 142 with a grade of "C" or higher and SOC 122.**Corequisites:** DHYG 135 and DHYG 140 and DHYG 146.

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.

DHYG 221 Clinical Dental Hygiene III* (6 Hours)**Prerequisites :** Admission to the Dental Hygiene Program and DHYG 135 with a "C" or higher and DHYG 140 with a "C" or higher and DHYG 146 with a grade of "C" or higher and DHYG 148 with a grade of "C" or higher and BIOL 235 with a grade of "C" or higher.**Corequisites:** DHYG 225 and DHYG 230.

This course provides the dental hygiene student with continued development in the areas of patient management, preventive dental hygiene care and proficiency in clinical techniques through practical application. Selected skills, instrument design variations and current advances in dental hygiene services will also be introduced. The student will be able to develop and implement comprehensive dental hygiene appointment plans to meet the oral health needs and promote total body wellness of each patient. Experiences with special needs patients at affiliate sites enable the student to participate as a change agent and/or patient advocate in the community and adapt to meet "special needs".

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 :** Admission to the Dental Hygiene Program and DHYG 135 with a "C" or higher and DHYG 140 with a "C" or higher and DHYG 146 with a "C" or higher and DHYG 148 with a "C" or higher and BIOL 235 with a "C" or higher.**Corequisites:** DHYG 221 and DHYG 230.

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.

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 : Admission to the Dental Hygiene Program and DHYG 135 with a grade of "C" or higher and DHYG 140 with a grade of "C" or higher and DHYG 146 with a grade of "C" or higher and DHYG 148 with a grade of "C" or higher and BIOL 235 with a grade of "C" or higher.

Corequisites: DHYG 221 and DHYG 225.

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.

DHYG 240 Dental Public Health* (2 Hours)

Prerequisites : Admission to the Dental Hygiene Program and DHYG 221 with a grade of "C" or higher and DHYG 225 with a grade of "C" or higher and DHYG 230 with a grade of "C" or higher.

Corequisites: DHYG 245 and DHYG 250.

Prerequisites or corequisites: COMS 120 or COMS 121 or COMS 125.

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 evidence-based research.

DHYG 245 Nitrous Oxide Analgesia* (1 Hour)

Prerequisites : Admission to the Dental Hygiene Program and DHYG 221 with a grade of "C" or higher and DHYG 225 with a grade of "C" or higher and DHYG 230 with a grade of "C" or higher.

Corequisites: DHYG 240 and DHYG 250.

Prerequisites or corequisites: COMS 120 or COMS 121 or COMS 125.

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.

DHYG 250 Clinical Dental Hygiene IV* (6 Hours)

Prerequisites : Admission to the Dental Hygiene Program and DHYG 221 with a grade of "C" or higher and DHYG 225 with a grade of "C" or higher and DHYG 230 with a grade of "C" or higher.

Corequisites: DHYG 240 and DHYG 245.

Prerequisites or corequisites: COMS 120 or COMS 121 or COMS 125.

This course will offer continued development of competencies 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. Experiences with special patients at affiliate sites enable participation as a change agent and/or patient advocate in the community. A continued emphasis in the development and implementation of dental hygiene treatment plans to meet oral health needs and promote total body wellness for consumers. The following are required: CPR recertification, service learning and case study projects. The clinical experience is designed to continue the dental hygiene student's development in total patient care with Program Affiliate Sites. The classroom portion is designed as a seminar atmosphere for the introduction of legal and ethical concepts, practice of management concepts, current practices of dental hygiene and discussion of the roles of a dental hygienist.

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.

DIET 151 Nutrition and Meal Planning (3 Hours)

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.

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.

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.

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.

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, and locate intersections of geometric shapes. Most assignments in this course will be completed using AutoCAD software.

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.

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.

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 (2 Hours)

This course will teach how to digitally model prototype ideas that can be 3D printed. Multiple solid, reality capture, analysis and slicing programs are taught. Students will learn about the 3D printing process, how to make a digital model 3D-printable, different types of 3D printers and filaments. Students will also learn how to generate a file from the digital model 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.

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.

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.

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.

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.

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.

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.

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.

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.

DRAF 264 CAD:Interior Design* (3 Hours)**Prerequisites :** DRAF 164 with a grade of "C" or higher and ITMD 121 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.

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.

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.

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.

ECON 132H HON: Survey of Economics (1 Hour)

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. Prerequisite: Honors department approval.

ECON 230 Principles of Macroeconomics (3 Hours)

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.

ECON 230H HON: Principles of Macroeconomics (1 Hour)

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. Prerequisite: Honors department approval.

ECON 231 Principles of Microeconomics (3 Hours)

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.

ECON 231H HON: Principles of Microeconomics (1 Hour)

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. Prerequisite: Honors department approval.

Education and Early Childhood (EDUC)

Courses

EDUC 121 Introduction to Teaching* (3 Hours)

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 is required.

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.

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.

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.

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.

EDUC 231 Early Childhood Curriculum II (3 Hours)

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.

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.

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.

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.

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

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.

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.

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).

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.

ELTE 175 Low Voltage Wiring* (3 Hours)

Prerequisites or corequisites: 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.

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,

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.

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.

ELTE 223 Electrical Certification Review* (1 Hour)**Prerequisites or corequisites:** ELTE 222.

This course covers the process and requirements for becoming a certified licensed electrician. License levels and permitting, state and local requirements, and best practices for being successful on a licensing examination will be covered.

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).

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).

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. 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.

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.

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 or corequisites:** ELEC 120.

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.

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.

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.

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 addition, 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.

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.

ELEC 235 Microprocessors* (4 Hours)

Prerequisites or corequisites: 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.

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.

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.

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.

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.

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.

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.

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.

EMS 131 Emergency Medical Technician* (10 Hours)

Prerequisites : EMS 128 with a grade of "C" or higher or department approval.

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 and a copy of a 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.

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.

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.

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.

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.

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.

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.

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.

ENGR 251 Statics* (3 Hours)

Prerequisites : MATH 242.

Prerequisites or corequisites: PHYS 220.

This course introduces the student to the conditions of rest and motion of bodies under the action of forces. The principles used include vectors, force systems, equilibrium, free body diagrams, centroids, moments of inertia, trusses, frames, and shear and moment diagrams.

ENGR 254 Dynamics* (3 Hours)

Prerequisites : ENGR 251.

This course covers the application of the principles of dynamics, the branch of engineering mechanics that studies objects in motion. Topics include unbalanced force systems (Newton's second law), displacement, velocity and acceleration, work and energy, and impulse and momentum.

ENGR 254H HON: Dynamics (1 Hour)

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. Prerequisite: Honors department approval.

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.

ENGL 106 Introduction to Writing* (3 Hours)

Prerequisites : ENGL 102 or an appropriate score on an 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. This course is in a sequence of courses leading to ENGL 121.

ENGL 121 Composition I* (3 Hours)

Prerequisites : ENGL 106 or (EAP 113 and EAP 117) or an appropriate placement test score.

Composition I focuses on writing nonfiction prose suitable in its expression and content to both its occasion and its audience. Students will have an opportunity to improve in all phases of the writing process: discovering ideas, gathering information, planning and organizing, drafting, revising and editing. Each 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. By the end of the semester, students should have completed at least 20 pages (approximately 5,000 words) of revised and edited prose.

ENGL 121H HON: Composition I (1 Hour)

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. Prerequisite: Honors department approval.

ENGL 122 Composition II* (3 Hours)

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. By the end of the semester, students should have completed at least 25 pages (approximately 6,250 words) of revised and edited prose.

ENGL 122H HON: Composition II (1 Hour)

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. Prerequisite: Honors department approval.

ENGL 123 Technical Writing I* (3 Hours)

Prerequisites : ENGL 121.

This course introduces students to technical and professional writing. Students will apply the writing process, engaging rhetorical strategies, when constructing typical workplace correspondence, such as memos, letters, reports, and digital documents (including writings for social media and asynchronous presentations). By the end of the semester, students should have written approximately 5,000 words in revised and edited documents. Students will focus on effective technical writing criteria: clarity, conciseness, document design, organization, and accuracy. Accuracy specifically requires students to follow standard English grammar and punctuation rules.

ENGL 130 Introduction to Literature* (3 Hours)

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.

ENGL 130H HON: Introduction to Literature (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

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.

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.

ENGL 217H HON: Literature by Women (1 Hour)

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. Prerequisite: Honors department approval.

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.

ENGL 223 Introduction to Creative Writing* (3 Hours)**Prerequisites :** ENGL 121.

This course provides an introductory study to the craft of imaginative writing, with an emphasis on the reading and discussion of student manuscripts and of published works by contemporary writers. Students will apply close reading skills to understand the writing techniques used to craft publishable imaginative writing, and practice these techniques in their own writing. Students will study and practice writing in two major literary genres of the instructor's choice: fiction, poetry, creative nonfiction or scriptwriting.

ENGL 223H HON: Creative Writing (1 Hour)

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. Prerequisite: Honors department approval.

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. This course offers serious writing students the opportunity to continue growing as writers and readers by studying the art of writing, producing a consistent body of writing, examining one another's work and providing a supportive environment. Students may meet the written requirements of the course by writing poetry, fiction, creative nonfiction, dramatic scripts or any combination of the genres. Students will provide written and oral critiques of their classmates' work.

ENGL 224H HON: Creative Writing Workshop (1 Hour)

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. Prerequisite: Honors department approval.

ENGL 225 Creative Writing Workshop: Fiction* (3 Hours)

Prerequisites : ENGL 223.

This course offers students the opportunity to continue to develop their skills in writing and reading fiction. In addition to writing fiction of their own, students will analyze published works of fiction, and they will provide feedback on their classmates' manuscripts. In doing so, they will articulate a critical vocabulary for the craft of fiction and the writing process.

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.

ENGL 230 Introduction to Fiction* (3 Hours)

Prerequisites : ENGL 121.

In this course, students will read primarily short fiction and will learn a variety of literary perspectives. Students will learn the historical precedents of prose fiction and the similarities and differences among various narrative forms such as the short story, novel, memoir, autobiographical fiction, and graphic fiction. Students will discover the place of prose fiction in major literary movements as well as the key elements of this fiction. Students will study major authors who have contributed to the success of prose fiction, and the course will focus on helping students appreciate diverse viewpoints and perspectives.

ENGL 230H HON: Introduction to Fiction (1 Hour)

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. Prerequisite: Honors department approval.

ENGL 232 Children's Literature* (3 Hours)

Prerequisites : ENGL 121.

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.

ENGL 232H HON: Children's Literature (1 Hour)

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. Prerequisite: Honors department approval.

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.

ENGL 236 British Literature to 1800* (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.

ENGL 236H HON: British Literature to 1800 (1 Hour)

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. Prerequisite: Honors department approval.

ENGL 237 British Literature after 1800* (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.

ENGL 237H HON: British Literature after 1800 (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

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.

ENGL 251 World Literature to 1620* (3 Hours)**Prerequisites :** ENGL 121.

World Literature to 1620 introduces students to major literary works of the world, including Europe, Asia, the Middle East, the Americas, and other areas, composed from antiquity through the seventeenth century. In conducting a cross-cultural examination of global literatures within broader historical, cultural, political, and social frameworks, including the contexts of class, race and ethnicity, gender, religion, and aesthetics, students will gain a better understanding of how these works have been influential in shaping and expressing human values in our various cultures as well as a deep consideration of how contemporary understandings of the individual and society relate to those expressed in the texts.

ENGL 252 Introduction to Shakespeare (3 Hours)

Identified by a contemporary as "not of an age, but for all time," William Shakespeare is arguably the most important writer in the English language. In this introductory course, students will read and explore eight to ten plays, situating them in their literary, social and historical contexts, as well as a handful of sonnets. While the course will emphasize close readings of the texts, students will also explore various interpretations of the plays on stage, film and within the wider culture. Prerequisite: ENGL 121.

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.

ENGL 254H HON: Masterpieces of Cinema (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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 is the second writing and grammar course in the sequence of courses leading to ENGL 121.

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 is the first speaking course in a sequence of courses leading to ENGL 121.

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 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 is the third writing and grammar course in the sequence of courses leading to ENGL 121.

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.

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 is the third speaking course in a sequence of courses leading to ENGL 121.

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.

EAP 120 Reading and Vocabulary I* (3 Hours)

Prerequisites : EAP 120 or 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.

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 is the second reading course in the sequence of courses leading to ENGL 121.

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 is the third reading course in the sequence of courses leading to ENGL 121.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

Environmental Science (EVRN)

Courses

EVRN 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.

EVRN 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.

EVRN 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.

EVRN 131 Environmental Science Lab* (1 Hour)

Prerequisites or corequisites: BIOL 130 or EVRN 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. EVRN 131 students must be currently enrolled in EVRN 130 or have successfully completed BIOL/EVRN 130 within the last three years.

EVRN 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.

EVRN 155 Bioethics* (3 Hours)

Prerequisites : BIOL 121 or 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. EVRN 155 and PHIL 155 are the same courses; only enroll in one.

EVRN 255 Freshwater Ecology (4 Hours)

Freshwater Ecology describes the interaction between freshwater organisms and their environment. Structure and function of streams, lakes, wetlands, and groundwater systems will be explored. Students will learn life histories and identification skills for aquatic organisms including plankton, fish, mollusks, insects and plants. The influence of abiotic factors such as temperature, oxygen, and nutrients will be examined. Field and classroom experiments will be used to apply concepts learned. Students will study local water quality issues and aquatic management strategies to improve ecosystem health.

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.

FASH 121H HON: Fashion Fundamentals (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

FASH 124 Apparel Construction II* (4 Hours)

Prerequisites : FASH 123 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.

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 demonstrate the use of appropriate types of displays for in-store promotions.

FASH 125H HON: Visual Merchandising (1 Hour)

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. Prerequisite: Honors department approval.

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.

FASH 127H HON: Computer Aided Pattern Development (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

FASH 131H HON: Flat Pattern Development (1 Hour)

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. Prerequisite: Honors department approval.

FASH 133 Computer Aided Apparel Design (3 Hours)

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.

FASH 133H HON: Computer Aided Apparel Design (1 Hour)

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. Prerequisite: Honors department approval.

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.

FASH 143H HON: Tailoring (1 Hour)

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. Prerequisite: Honors department approval.

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.

FASH 150H HON: Textiles (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

FASH 224H HON: History of Costume (1 Hour)

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. Prerequisite: Honors department approval.

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.

FASH 231 Merchandising Planning and Control* (3 Hours)**Prerequisites :** MATH 120 or higher.

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.

FASH 235 Online Retailing (3 Hours)

Students in this course will explore the history of online retailing and learn about the challenges retailers face when making decisions to move from conventional retail methods to e-retail. This course will introduce students to the techniques that are used to develop successful online stores. Students will develop a detailed store plan and create their own store using online e-commerce tools. 3 hrs. lecture/wk.

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.

FASH 242H HON: Product Knowledge for Merchandisers (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

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.

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.

FASH 282 Fashion Internship (1 Hour)

Upon successful completion of this course, the student should be able to apply classroom knowledge to an actual employment opportunity. This course offers work experience under instructional supervision and is designed to provide practical experience in the fashion industry. Successful completion of this course requires a minimum of 180 hours on-the-job training per semester. This is a repeatable course and may be taken more than once for credit.

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.

FASH 295 Capstone: Merchandising and Marketing* (3 Hours)

Prerequisites : Department approval.

This course is a culmination of the Fashion Merchandising and Marketing program course work. It should be taken after completing at least 40 credit hours toward the AAS degree in preparation for graduation. 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. Students will prepare a resume and digital portfolio of work to be presented in a professional manner.

FASH 296 Capstone: Apparel Design and Technology* (3 Hours)

Prerequisites : Department approval.

This course is a culmination of the Apparel Design and Technology program course work. It should be taken after completing at least 40 credit hours toward the AAS degree in preparation for graduation. The student will have opportunities to apply knowledge gained in prior courses to analyze industry topics. This capstone course will review and evaluate competencies that are essential for employment in the fashion industry. Students will prepare a resume and present their digital portfolio of work in a professional manner.

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.

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.

FMS 275 Introduction to Film and Media Production* (3 Hours)

Prerequisites : FMS 100.

Prerequisites or corequisites: FMS 200.

This is an introduction to basic film and media production. In this course, you will become familiar with basic technical and aesthetic practices through hands-on production exercises and projects. You will finish the course with a solid understanding of single-camera technique, set operations, fiction and non-fiction filmmaking processes, and emerging trend in filmmaking as an art form. You will learn to how to articulate your experiences, ideas and images cinematically, and how to collaborate with your peers to produce good work. The holistic intent of the class is to create film and media that gives viewers an emotional, intellectual or visceral experience. The assignments in this course are geared toward learning to construct effective film and media experiences and learning the specific technologies and practices to translate concepts and artistic intentions to screen or projection.

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 111 Hazardous Materials Awareness and Operations* (4 Hours)

Prerequisites : Department approval.

Corequisites: FIRE 131 and FIRE 141.

This course prepares the student for the Hazardous Materials certification through Kansas Fire and Rescue Training Institute. The purpose of this course is to develop an emergency response contingency plan to deal with hazardous material or chemical emergencies in compliance with regulations in order to protect human health and the environment as well as to minimize an organization's risk. Students will also implement the various portions of the plan as required.

FIRE 126 Historical Foundations of the Fire Service (3 Hours)

Emphasis is placed on the historical evolution of the fire service as it pertains to the equipment, organizational structures, terminology, customs and traditions. Students will be involved in looking at primary and secondary documents in developing an understanding of the fire service culture. Critical analysis and historical research will be advanced in the curriculum using historical records and artifacts.

FIRE 131 Firefighter I* (5 Hours)

Prerequisites : Department approval.

Corequisites: FIRE 111 and FIRE 141.

This course provides an entry level overview of firefighter safety, fire behavior, building construction, protective clothing, equipment, firefighting techniques and rescue procedures. The students receive a solid foundation of classroom and hands-on training to prepare them for the Firefighter I certification through Kansas Fire and Rescue Training Institute.

FIRE 133 Fire Investigation (3 Hours)

An orientation and introduction to fire origin and cause, laws of arson, fire and police investigation, and a technical analysis of arson and fraud. Emphasis is placed on the collection and preservation of evidence, photography, diagrams, interviewing, and preparing for court.

FIRE 136 Fire and Emergency Management (3 Hours)

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.

FIRE 141 Firefighter II* (3 Hours)

Prerequisites : Department approval.

Corequisites: FIRE 111 and FIRE 131.

This course builds on the concepts and skills presented in FIRE 131 Firefighter I course. Students will have the opportunity to expand their understanding of fire ground operations and prevention activities reinforced by realistic exercises in various fire ground operations including: extrication, rescues, water supplies, suppression of combustible materials, emergency communications and responsibilities of the firefighter. A life safety inspection project on commercial and residential properties is an integral component of this course. The students receive a solid foundation of classroom and hands-on training to prepare them for the Firefighter II certification through Kansas Fire and Rescue Training Institute.

FIRE 152 Codes/Detection and Suppression Systems (3 Hours)

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.

FIRE 162 Firefighting Tactics* (3 Hours)

Prerequisites : Firefighter Certificate completion and/or Department approval.

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.

FIRE 201 Leadership in the Fire Service* (3 Hours)

Prerequisites : Firefighter Certificate completion and/or Department approval.

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.

FIRE 220 Fire Management (3 Hours)

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.

FIRE 222 Fire Science Law (3 Hours)

The student will have the opportunity to explore legal aspects of the fire and emergency services departments. This course discusses OSHA regulations, basic human resources concepts, employee and employer rights, HIPPA regulations from the lens of fire and emergency services administrators. Case studies of legal precedence for fire investigations are used as a method of applying concepts in this course.

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.

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.

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.

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.

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.

Foreign Language (FL)

Courses

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.

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.

FL 121H HON: Elementary German II (1 Hour)

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. Prerequisite: Honors department approval.

FL 130 Elementary Spanish I (5 Hours)

In this basic course, students will study Spanish grammar, conversation, composition and the culture of Spanish-speaking countries.

FL 131 Elementary Spanish II* (5 Hours)

Prerequisites : FL 130 with a grade of "C" or higher or two years of high-school Spanish or an 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.

FL 131H HON: Elementary Spanish II (1 Hour)

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. Prerequisite: Honors department approval.

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.

FL 140 Elementary French I (5 Hours)

In this basic course, students will study French grammar, conversation, composition and the culture of French-speaking countries.

FL 140H HON: Elementary French I (1 Hour)

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. Prerequisite: Honors department approval.

FL 141 Elementary French II* (5 Hours)

Prerequisites : FL 140 with a grade of "C" or higher or one year of high-school French or an appropriate score on the placement test.

This course continues the presentation of the material introduced in Elementary French I. Graded reading selections will be used as the basis for conversation.

FL 141H HON: Elem. French II (1 Hour)

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. Prerequisite: Honors department approval.

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.

FL 166 Elementary Chinese II* (5 Hours)

Prerequisites : FL 165 or one year of high-school Chinese.

This course offers a continuation of Elementary Chinese I, emphasizing the sounds, vocabulary, grammar, usage, characters and reading of the Chinese language. Students will develop more advanced conversational skills and cultural understanding.

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.

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.

FL 171H HON: Elementary Japanese II (1 Hour)

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. Prerequisite: Honors department approval.

FL 172 Conversational Japanese I* (2 Hours)

Prerequisites : FL 171 with a grade of "B" or higher or department approval.

This course enhances students' ability to express themselves orally in Japanese at the elementary level through vocabulary building and reiteration of essential grammatical structures. The vocabulary emphasizes everyday life situations and cultural events. Placement is recommended.

FL 182 Intermediate Japanese I* (5 Hours)

Prerequisites : FL 171 or two years of high-school Japanese.

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.

FL 183 Intermediate Japanese II* (5 Hours)

Prerequisites : FL182 or three years of high-school Japanese.

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.

FL 184 Conversational Japanese II* (2 Hours)

Prerequisites : FL 182 with a grade of "B" or higher or Department approval.

This course enhances students' ability to express themselves orally in Japanese at the intermediate level through vocabulary building and reiteration of essential grammatical structures. The vocabulary emphasizes everyday life situations and current events. Placement is recommended.

FL 192 Intermediate Chinese I* (3 Hours)

Prerequisites : FL 166.

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.

FL 193 Intermediate Chinese II* (3 Hours)

Prerequisites : FL 192.

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.

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.

FL 220H HON: Intermediate German I (1 Hour)

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. Prerequisite: Honors department approval.

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.

FL 221H HON: Intermediate German II (1 Hour)

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. Prerequisite: Honors department approval.

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.

FL 223H HON: Conversational German (1 Hour)

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. Prerequisite: Honors department approval.

FL 230 Intermediate Spanish I* (3 Hours)

Prerequisites : FL 131 with a grade of "C" or higher or three years of high-school Spanish or an 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.

FL 230H HON: Intermediate Spanish I (1 Hour)

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. Prerequisite: Honors department approval.

FL 231 Intermediate Spanish II* (3 Hours)

Prerequisites : FL 230 with a grade of "C" or higher or four years of high-school Spanish or an 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.

FL 231H HON: Intermediate Spanish II (1 Hour)

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. Prerequisite: Honors department approval.

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 an appropriate score 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.

FL 234H HON: Conversational Spanish (1 Hour)

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. Prerequisite: Honors department approval.

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.

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; can be taken in the Testing Center.

FL 241H HON: Intermediate French II (1 Hour)

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. Prerequisite: Honors department approval.

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; can be taken in the Testing Center.

FL 243H HON: Conversational French (1 Hour)

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. Prerequisite: Honors department approval.

FL 270 Intermediate American Sign Language I* (3 Hours)

Prerequisites : ASL 121 or 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. 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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

GAME 180H HON: Artificial Intelligence/Games (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

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.

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.

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.

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.

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)

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.

GEOS 130H HON: General Geology (1 Hour)

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. Prerequisite: Honors department approval.

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.

GEOS 140H HON: Physical Geography (1 Hour)

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. Prerequisite: Honors department approval.

GEOS 141 Physical Geography Lab* (2 Hours)**Prerequisites or corequisites:** GEOS 140.

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.

GEOS 145 World Regional Geography (3 Hours)

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.

GEOS 145H HON: World Regional Geography (1 Hour)

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. Prerequisite: Honors department approval.

GEOS 155 Human Geography (3 Hours)

Human Geography is an introductory course in human/cultural geography that emphasizes human relationships among one another and how they vary over space and time. Human conflicts that result from these differences will also be discussed. This course introduces students to basic concepts in human geography relating to economic activities, landscapes, languages, migrations, nations, regions, and religions. Human Geography serves as the basis for further course work in cultural, economic, political, population, and urban geography.

GEOS 214 Introduction to Teaching Math and Science I* (1 Hour)**Prerequisites :** MATH 171 with a grade of "C" or higher or an 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.

GEOS 215 Introduction to Teaching Math and Science II* (1 Hour)

Prerequisites : ASTR 214 with a grade of "C" or higher or BIOL 214 with a grade of "C" or higher or CHEM 214 with a grade of "C" or higher or GEOS 214 with a grade of "C" or higher or MATH 214 with a grade of "C" or higher or PHYS 214 with a grade of "C" or higher 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.

Global & International Studies (GIST)

Courses

GIST 101 Study Abroad Reflections* (1-3 Hour)

Prerequisites : 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)

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. Prerequisite: Honors department approval.

Graphic Design (GDES)

Courses

GDES 120 Introduction to Graphic Design* (3 Hours)

Prerequisites or corequisites: CDTP 145.

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.

GDES 125 Graphic Processes* (3 Hours)

Prerequisites : CDTP 135 and CDTP 140 and CDTP 145.

Prerequisites or corequisites: ART 124 and GDES 120.

This course covers technical processes for the graphic image through traditional and current production and printing methods. Creative approaches to image manipulation are explored to construct graphic communication for various channels.

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.

GDES 131 Drawing and Media Methods II* (3 Hours)

Prerequisites : GDES 125 and 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.

GDES 131H HON: Drawing and Media Methods II (1 Hour)

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. Prerequisite: Honors department approval.

GDES 132 Typography* (3 Hours)

Prerequisites : ART 124 and GDES 120 and CDTP 135 and CDTP 140 and CDTP 145.

Corequisites: GDES 125.

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.

GDES 132H HON: Typography (1 Hour)

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. Prerequisite: Honors department approval.

GDES 134 Layout Design* (3 Hours)

Prerequisites : GDES 125 and 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.

GDES 134H HON: Layout Design (1 Hour)

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. Prerequisite: Honors department approval.

GDES 230 Drawing and Media Methods III* (3 Hours)

Prerequisites : ART 127 and ART 129 and GDES 131 and GDES 134.

This course will provide an understanding of the application of illustration to graphic design. Visual problem-solving processes acquired in GDES 131: Drawing and Media Methods II will be further developed through problems in image composition emphasizing expressive communication. Techniques in traditional and digital media are explored.

GDES 231 Advanced Typography* (3 Hours)

Prerequisites : ART 127 and ART 129 and GDES 130 and 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.

GDES 231H HON: Advanced Typography (1 Hour)

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. Prerequisite: Honors department approval.

GDES 235 Production Methods* (3 Hours)

Prerequisites : ART 127 and ART 129 and GDES 130 and GDES 134.

This course will provide the fundamentals of preparing art for reproduction. Traditional camera-ready art techniques and digital prepress production methods will be emphasized.

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.

GDES 244 Communication Systems* (3 Hours)

Prerequisites : GDES 230 and GDES 231 and GDES 235.

This course is focused on developing an organization's visual identity through an understanding of the target audience and competitive landscape. A range of identity elements are developed and used in creating specific touchpoints across a variety of media. A comprehensive Brand Identity using traditional and digital methods is a result of this course.

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.

GDES 272 Professional Preparation* (3 Hours)

Prerequisites : GDES 230 and GDES 231 and GDES 235.

Corequisites: GDES 236 and GDES 244 and GDES 245.

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.

GDES 275 Graphic Design Internship* (1 Hour)

Prerequisites : Department 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.

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)

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. Prerequisite: Honors department approval.

HC 130 Medical Terminology for Healthcare Professions (3 Hours)

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 will 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.

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 : Department 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 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.

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.

HCI 130 Interpreting Skills II* (3 Hours)

Prerequisites : Selective admissions approval and HCI 110 with a grade of "C" or higher and HCI 120 with a grade of "C" or higher.

Corequisites: HCI 140.

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.

HCI 140 Spanish Medical Interpreting* (3 Hours)

Prerequisites : Selective admissions approval and HCI 110 with a grade of "C" or higher and HCI 120 with a grade of "C" or higher.

Corequisites: HCI 130.

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.

HCI 180 Medical Interpreting Practicum* (2 Hours)

Prerequisites : Selective admissions approval and HCI 130 with a grade of "C" or higher and HCI 140 with a grade of "C" or higher.

Prerequisites or corequisites: HCI 101 with a "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.

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.

AVHO 103 Certified Nurse Aide Refresher Course (CNA-R)* (1 Hour)

Prerequisites : Kansas CNA Certification and department approval.

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.

AVHO 104 Certified Medication Aide (CMA)* (4 Hours)

Prerequisites : An appropriate reading placement test score, 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.

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.

AVHO 106 Home Health Aide (HHA)* (1 Hour)

Prerequisites : An appropriate reading placement test score, 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.

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.

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.

AVHO 115 IV Therapy for LPNs* (3 Hours)

Prerequisites : Proof of Kansas LPN licensure, 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, and 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.

Heating, Vent., Air Conditioning (HVAC)

Courses

HVAC 105 HVAC Fundamentals* (4 Hours)

Prerequisites : Department approval.

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.

HVAC 110 Electrical Fundamentals* (4 Hours)

Prerequisites : Department approval.

This course is in electrical theory and is required for HVAC. 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.

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.

HVAC 136 Heating System Fundamentals* (3 Hours)

Prerequisites or corequisites: HVAC 105 and HVAC 110.

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.

HVAC 164 EPA 608 Refrigerant Management* (1 Hour)

Prerequisites : HVAC 105 and HVAC 110.

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.

HVAC 165 410-A Refrigerant Management* (1 Hour)

Prerequisites : HVAC 105 and HVAC 110.

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.

HVAC 167 Sheet Metal Layout and Fabrication* (3 Hours)

Prerequisites or corequisites: HVAC 105 and HVAC 110.

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.

HVAC 188 Load Calculation and Duct Design* (3 Hours)

Prerequisites : HVAC 105 and HVAC 110.

Upon successful completion of this course, students will be able to perform a load calculation for residential HVAC applications. The student should be able to determine proper sizing of residential HVAC equipment and ductwork to meet the requirements for high-quality climate control system. The students will use the Air Conditioning Contractors of America (ACCA) Manual J and current industry recognized manufactures data to determine the correct size of the HVAC equipment used in a residential applications.

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.

HVAC 210 Plumbing Fundamentals* (3 Hours)

Prerequisites : HVAC 105 and HVAC 110.

This is an introductory course in plumbing technology that is appropriate for HVAC students. Upon successful completion of this course, the student should be able to identify and repair most of the basic components in a plumbing system. Topics will include soldering and brazing, plumbing repair, sizing of water distribution lines, including drain, waste and vent (DWV) piping, and supply water lines. Instruction includes examining the International Plumbing Code (IPC) and International Fuel Gas Code (IFGC).

HVAC 220 HVAC Trade Certification Review* (2 Hours)

Prerequisites : HVAC 105 and HVAC 110.

This course will prepare students to take one of the main HVAC industry standard certification North American Technician Excellence (NATE) test, which will consists of the core fundamentals of HVAC, gas heating, air conditioning and heat pumps.

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.

HVAC 250 HVAC Installation and Start-up Procedures* (3 Hours)

Prerequisites : HVAC 105 and HVAC 110.

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.

HVAC 275 HVAC Code Review* (3 Hours)

Prerequisites : HVAC 105 and HVAC 110.

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.

HVAC 278 Advanced Electrical Systems* (3 Hours)

Prerequisites : HVAC 105 and HVAC 110.

Upon successful completion of this course, students will be able to understand and apply advanced electrical theory consisting of wiring gas and electric furnaces, air conditioners and heat pumps. This class will develop diagnostic skills associated with common heating and cooling problems found in the HVAC trade. The students will be able to examine advanced electrical wiring diagrams, understand the sequence of operations for the HVAC equipment and conduct troubleshooting methods. Control theory as applied in Direct Digital Control (DDC) HVAC systems will also be examined.

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. This is a repeatable course and may be taken more than once for credit.

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.

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. 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. 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.

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.

HIST 129H HON: Early Modern Europe 1500-1789 (1 Hour)

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. Prerequisite: Honors department approval.

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.

HIST 130H HON: European History Since 1789 (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

HIST 140 U.S. History to 1877 (3 Hours)

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.

HIST 140H HON: U.S. History to 1877 (1 Hour)

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. Prerequisite: Honors department approval.

HIST 141 U.S. History Since 1877 (3 Hours)

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.

HIST 141H HON: U.S. History Since 1877 (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

HIST 145H HON: History of Ancient Rome (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

HIST 151 World History: Traditional (3 Hours)

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.

HIST 152 World History: Modern (3 Hours)

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.

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.

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.

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.

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.

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.

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.

HIST 195H HON: History of Middle East (1 Hour)

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. Prerequisite: Honors department approval.

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.

HIST 210 Environmental History of North America (3 Hours)

This course will introduce students to the environmental history of North America as well as Environmental History as a distinct sub-field of History. Students by the end of this course should be able to more clearly see connections between what they would previously have considered history and the natural systems that made that history possible. By taking an explicitly interdisciplinary focus, this course will bring fresh insights to familiar historical narratives.

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.

HIST 260 Women in U.S. History (3 Hours)

This course examines how the experiences of women have shaped United States history. Coursework will investigate the construction of gender; intersections of race, ethnicity, class, sexuality and identity with gender; women's work (paid and unpaid); politics and reform; and changing gender roles. Special attention will be paid to the divergent experiences and perspectives of diverse women in order to expand cultural understanding.

HIST 270 History Internship* (3 Hours)

Prerequisites : Department approval.

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 100 Honors Seminar* (1 Hour)

Prerequisites : Department approval.

This course will introduce students to the theory and practices of interdisciplinarity, the skills and tools required for honors coursework, and undergraduate collaborative and individual research. While closely examining a specific topic, students will develop their skills in research, reading, writing and in-depth discussion.

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.

HON 250H HON: Honors Forum: In Search of Solutions (1 Hour)

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. Prerequisite: Honors department approval.

HON 291 Independent Study* (1-7 Hour)

Prerequisites : 3.5 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.

HON 292 Special Topics:* (1-3 Hour)

Prerequisites : Department approval.

This course periodically offers specialized or advanced discipline-specific content related to diverse areas of honors pedagogy not usually taught in the curriculum to interested and qualified students within the program.

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.

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.

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.

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.

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.

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.

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.

HORT 201H HON: Introduction to Horticulture Sciences (1 Hour)

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. Prerequisite: Honors department approval.

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.

HORT 214 Woody Plants, 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 horticulturist, grounds maintenance employee, landscaper, and garden center employee in identifying plant materials used in the landscape.

HORT 215 Woody Plants, Evergreens (3 Hours)

This course places emphasis on identification, ornamental characteristics, site requirements and use of evergreen 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 taught. This course will assist the horticulturist, grounds maintenance employee, landscaper and garden center employee in identifying plant materials used in the landscape.

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.

HORT 225 Plant Problems* (3 Hours)

Prerequisites : HORT 214 and HORT 220 or department.

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).

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.

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.

HORT 255 Pest 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.

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.

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.

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 National Restaurant Association guidelines. The successful completion of the ServSafe Sanitation exam will result in a national sanitation certification.

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.

HMGT 121H HON: Perspectives of Hospitality Management (1 Hour)

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. Prerequisite: Honors department approval.

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.

HMGT 123H HON: Professional Cooking I (1 Hour)

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. Prerequisite: Honors department approval.

HMGT 126 Food Management* (4 Hours)

Prerequisites : Admission to the hospitality management program and HMGT 123 and HMGT 230 and HMGT 277.

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.

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.

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.

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.

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.

HMGT 150H HON: Seminar:Food Service Sales and Marketing (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

HMGT 203 Hotel Sales and Marketing* (3 Hours)

Prerequisites : Admission to the hospitality management program and HMGT 121.

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.

HMG 207 Hospitality Human Resource Management* (3 Hours)**Prerequisites :** HMG 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.

HMG 220 American Regional Cuisine* (3 Hours)**Prerequisites :** HMG 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.

HMG 221 Design and Facilities Management* (3 Hours)**Prerequisites :** HMG 123 and HMG 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.

HMG 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.

HMG 223H HON: Fundamentals of Baking (1 Hour)

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. Prerequisite: Honors department approval.

HMG 226 Garde Manger* (3 Hours)**Prerequisites :** HMG 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.

HMG 226H HON: Garde Manger (1 Hour)

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. Prerequisite: Honors department approval.

HMG 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.

HMG 230 Professional Cooking II* (3 Hours)**Prerequisites :** HMG 120 and HMG 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.

HMG 230H HON: Professional Cooking II (1 Hour)

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. Prerequisite: Honors department approval.

HMG 231 Advanced Food Preparation* (4 Hours)**Prerequisites :** HMG 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.

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.

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.

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.

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.

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.

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.

HMGT 268 Hospitality Managerial Accounting* (3 Hours)

Prerequisites : MATH 120 (or higher) 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.

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.

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.

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.

HMG 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.

HMG 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.

HMG 282 Culinary Arts Practicum II* (2 Hours)

Prerequisites : HMG 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.

HMG 285 Culinary Arts Practicum III* (2 Hours)

Prerequisites : HMG 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.

HMG 286 Culinary Arts Practicum IV* (2 Hours)

Prerequisites : HMG 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.

HMG 287 Culinary Arts Practicum V* (2 Hours)

Prerequisites : HMG 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.

HMG 288 Culinary Arts Practicum VI* (2 Hours)

Prerequisites : HMG 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.

HMG 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 : HMG 120 and HMG 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 retail sales in a professional pastry shop.

HMPB 160 Pastry Shop Principles I* (4 Hours)

Prerequisites : HMG 120 and HMG 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.

HMPB 233 Patisserie* (4 Hours)**Prerequisites :** HMG120 and HMG123.**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.

HMPB 252 Pastry Shop Business Basics I* (3 Hours)**Prerequisites :** HMG120 and HMG123.**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.

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 hands-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.

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.

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.

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 257 and HMPB 262.

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.

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.

HUM 122H HON: Introduction to Humanities (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

HUM 145H HON: Introduction to World Humanities I (1 Hour)

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. Prerequisite: Honors department approval.

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.

HUM 146H HON: Introduction to World Humanities II (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

HUM 155H HON: Classical Mythology (1 Hour)

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. Prerequisite: Honors department approval.

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.

HUM 156H HON: Contemporary Approaches to World Mythology (1 Hour)

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. Prerequisite: Honors department approval.

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.

HUM 165H HON: Introduction to Chinese Culture (1 Hour)

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. Prerequisite: Honors department approval.

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.

HUM 167H HON: Introduction to Japanese Culture (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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)

Networking Fundamentals is the first of four courses in the Cisco Certified Network Associate (CCNA) curriculum. This course introduces the architecture, structure, functions, components, and models of the internet and other computer networks. The principles and structure of Internet Protocol (IP) addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students will be able to build simple Local Area Network (LANs), perform basic configurations for routers and switches, and implement IP addressing schemes.

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 Routing Information Protocol (RIP), Access Control Lists (ACLs), Dynamic Host Configuration Protocol (DHCP), Network Address Translation (NAT), Virtual Local Area Networks (VLANs) and inter-VLAN routing in Internet Protocol version 4 and 6 (IPv4 and IPv6) networks. Laboratory exercises will accompany lectures.

IT 175 Cybersecurity Fundamentals* (3 Hours)**Prerequisites** : (IT 120 or IT 205) and IT 140.

This course is designed to provide students with the knowledge and skills required to install and configure systems to secure applications, networks and devices; perform threat analysis and respond with appropriate mitigation techniques; participate in risk mitigation activities; and operate with an awareness of applicable policies, laws and regulations. Students will perform these tasks to support the principles of confidentiality, integrity and availability.

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.

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.

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), VLAN Trunking Protocol (VTP), Spanning Tree Protocol (STP), Etherchannel, Hot Standby Redundancy Protocol (HSRP), Open Shortest Path First (OSPF) and Enhanced Interior Gateway Routing Protocol (EIGRP) in Internet Protocol version 4 and 6 (IPv4 and IPv6) networks.

IT 221 Windows Server* (3 Hours)**Prerequisites or corequisites:** IT 120 or IT 205.

This course is designed to provide students with the knowledge and skills required to install, manage, and maintain Windows Server. Students will perform general installation tasks, as well as create and manage images for deployment. Students will configure disk and volumes, data deduplication, high availability, disaster recovery, Storage Spaces Direct and failover clustering solutions. Students will learn to manage Hyper-V and containers, as well as maintain and monitor servers in physical and compute environments.

IT 225 Windows Active Directory Services* (3 Hours)**Prerequisites :** IT 221.

This course is designed to provide students with a fundamental understanding of Active Directory (AD) in Windows Server. Students will learn how to install, configure, manage and maintain Active Directory Domain Services (AD DS) as well as implement Group Policy Objects (GPOs). Students will implement and manage Active Directory Certificate Services (AD CS), Active Directory Federations Services (AD FS), Active Directory Rights Management Services (AD RMS) and Web Application Proxy (WAP).

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.

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.

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.

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.

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.

IT 238 Digital Forensics* (3 Hours)**Prerequisites :** (IT 120 or 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, techniques and procedures will be used in a lab environment to perform forensic investigations.

IT 239 Ethical Hacking* (3 Hours)**Prerequisites :** IT 145 and IT 230.

This course introduces 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.

IT 245 Network Infrastructure* (3 Hours)**Prerequisites :** IT 221.

This course is designed to provide students with a fundamental understanding of the networking features and functionalities in Windows Server. Students will learn how to implement and manage Domain Name System (DNS), Dynamic Host Configuration Protocol (DHCP) and IP Address Management (IPAM), as well as deploy remote access solutions such as Virtual Private Networks (VPNs) and Remote Authentication Dial-In User Service (RADIUS). Students will learn to manage Distributed File Systems (DFS) and branch cache solutions, configure high performance network features and functionality and implement Software Defined Networking (SDN) solutions such as Hyper-V Networking Virtualization (HNV) and Network Controller.

IT 247 Accessing Wide Area Networks* (3 Hours)**Prerequisites :** IT 145 and IT 209.

The focus of this course is on the Wide Area Network (WAN) technologies and network services required by converged applications in a complex network. In this course, students will learn the selection criteria of network devices and WAN technologies to meet network requirements.

IT 256 Windows Security* (4 Hours)**Prerequisites or corequisites:** IT 225 and IT 245.

This course is designed to provide students with a fundamental understanding of security in Windows Server environments. Students will learn methods and technologies used to harden server environments and secure virtual machine infrastructures using shielded and encryption-supported virtual machines and guarded fabric. Students will learn to manage the protection of Active Directory and identity infrastructures and manage privileged identities using Just in Time (JIT) and Just Enough Administration (JEA) approaches. Students will learn to implement Privileged Access Workstations (PAWs) and secure servers using a variety of methods like Local Administrator Password Solution (LAPS). Students should also be able to use threat detection solutions, such as auditing access, implementing Advanced Threat Analytics (ATA), deploying Operations Management Suite (OMS) solutions, and identifying solutions for specific Dynamic Access Control (DAC) workloads.

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 including 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. Identify career options in the interior design profession and the significance of sustainability in the built environment.

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.

ITMD 125H HON: Interior Textiles (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

ITMD 132 Materials and Resources (3 Hours)

This course focuses 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.

ITMD 181 Interior Design Software* (1 Hour)

Prerequisites or corequisites: DRAF 264 with a grade of "C" or higher.

This course will focus on procedures of computer aided software programs unique to the interior design industry. Students will learn to create floor plans, orthographic and perspective drawings.

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.

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.

ITMD 202H HON: Interior Design II (1 Hour)

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. Prerequisite: Honors department approval.

ITMD 215 Environmental Systems for the Interior Designer* (3 Hours)

Prerequisites : ITMD 185 with a grade of "C" or higher.

This course focuses 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.

ITMD 215H HON: Environmental Systems for the Interior Designer (1 Hour)

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. Prerequisite: Honors department approval.

ITMD 222 Interior Design III* (3 Hours)

Prerequisites : ITMD 202 with a grade of "C" or higher and DRAF 264 with a grade of "C" or higher.

Prerequisites or corequisites: ITMD 129 with a grade of "C" or higher and ITMD 271 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 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. The student will also demonstrate an understanding of business practices.

ITMD 222H HON: Interior Design III (1 Hour)

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. Prerequisite: Honors department approval.

ITMD 224 Interior Design IV* (3 Hours)

Prerequisites : ITMD 129 with a grade of "C" or higher and ITMD 185 with a grade of "C" or higher and ITMD 202 with a grade of "C" or higher and DRAF 264 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. This course will focus on the commercial aspect of interior design.

ITMD 224H HON: Interior Design IV (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

ITMD 233H HON: Kitchen and Bath Basics (1 Hour)

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. Prerequisite: Honors department approval.

ITMD 235 Kitchen and Bath Design* (3 Hours)

Prerequisites : ITMD 181 with a grade of "C" or higher.

Prerequisites or corequisites: ITMD 222 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.

ITMD 260 Practices and Procedures* (3 Hours)

Prerequisites : ITMD 271 with a grade of "C" or higher.

This course presents the business practices and procedures found in the interior design field. 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.

ITMD 270 Interior Design Capstone* (1 Hour)

Prerequisites or corequisites: ITMD 224 with a grade of "C" or higher and ITMD 235 with a grade of "C" or higher.

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. Students will prepare a cover letter, resume, digital and hard copy portfolio. Upon successful completion of this course, the student will be able to select and rework portfolio materials for maximum visual potential and appeal. Leadership skills for joining the workforce will be examined and applied.

ITMD 271 Budgeting and Estimating* (3 Hours)

Prerequisites : ITMD 125 with a grade of "C" or higher and ITMD 132 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 materials and labor cost. Students will use interior design business procedures and documents to complete project analysis.

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 website. 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.

Journalism/Media Communication (JOUR)

Courses

JOUR 120 Mass Media and Society (3 Hours)

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.

JOUR 120H HON: Mass Media and Society (1 Hour)

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. Prerequisite: Honors department approval.

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.

JOUR 122H HON: News Writing and Reporting (1 Hour)

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. Prerequisite: Honors department approval.

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.

JOUR 125H HON: Fundamentals of Advertising (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

JOUR 269 Journalism Internship* (1 Hour)

Prerequisites : Department approval and completion of 3 credit hours in journalism/media communications coursework 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 : Department approval and completion of 3 credit hours in journalism/media communications coursework 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 : Department approval.

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.

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.

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.

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.

LI 150 Legal Interpreting Skills II* (3 Hours)

Prerequisites : Selective admissions approval and LI 130 with a grade of "C" or higher and LI 140 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.

LI 160 Spanish Legal Interpreting* (3 Hours)

Prerequisites : Selective admissions approval and LI 130 with a "C" or higher and LI 140 with a "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.

LI 180 Legal Interpreting Practicum* (2 Hours)

Prerequisites : Selective admissions approval and LI 150 with a grade of "C" or higher and LI 160 with a grade of "C" or higher and LAW 121 with a grade of "C" or higher.

Prerequisites or corequisites: CJ 121 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. 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.

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.

LAW 132 Civil Litigation* (3 Hours)

Prerequisites : Admission to the Paralegal program 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.

LAW 132H HON: Civil Litigation (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

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.

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.

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.

LAW 162H HON: Family Law (1 Hour)

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. Prerequisite: Honors department approval.

LAW 165 Forensic Science and the 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 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.

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.

LAW 195H HON: Legal Research (1 Hour)

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. Prerequisite: Honors department approval.

LAW 201 Advanced Legal Technology* (3 Hours)

Prerequisites : (Admission to the Paralegal Program and LAW 134 with a grade of "C" or higher) or (Selected major of the Legal Administrative Assistant Certificate and CPCA 128) 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.

LAW 201H HON: Advanced Legal Technology (1 Hour)

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. Prerequisite: Honors department approval.

LAW 205 Legal Analysis and Writing* (3 Hours)

Prerequisites : Admission to the Paralegal program and LAW 195 with a grade of "C" or higher 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.

LAW 205H HON: Legal Analysis and Writing (1 Hour)

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. Prerequisite: Honors department approval.

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.

LAW 226H HON: Immigration Law (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

LAW 247H HON: Intellectual Property Law (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

LAW 269H HON: Bankruptcy Law (1 Hour)

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. Prerequisite: Honors department approval.

LAW 271 Legal Ethics, Interviewing and Investigation* (3 Hours)

Prerequisites : Admission to the Paralegal program and LAW 134 with a grade of "C" or higher or department approval.

Prerequisites or corequisites: LAW 205 with a grade of "C" or higher.

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.

LAW 271H HON: Legal Ethics, Interviewing and Investigation (1 Hour)

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. Prerequisite: Honors department approval.

LAW 275 Paralegal Internship I* (1 Hour)

Prerequisites : Admission to the Paralegal program and LAW 120 with a grade of "C" or higher and LAW 121 with a grade of "C" or higher or department 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 and LAW 275 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 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 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.

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.

MKT 121H HON: Retail Management (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

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.

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.

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.

MKT 230H HON: Marketing (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

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.

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 and statistics. 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.

MATH 114 Accelerated Prep for College Math* (5 Hours)

Prerequisites : MATH 111 with a grade of "B" or higher or an appropriate score on the math placement test.

This accelerated course includes all algebra topics needed to prepare a student for MATH 165, MATH 171, or MATH 173. The course is designed to help students acquire a solid foundation in the required skills of algebra. Students will simplify arithmetic and algebraic expressions, including those containing polynomials, rational expressions, rational exponents, radical expressions and complex numbers; solve linear inequalities; solve equations that are linear, quadratic, and quadratic in form as well as equations containing rational expressions or radicals; graph linear equations and inequalities; graph quadratic equations; and analyze linear equations, functions and non-functions.

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 algebraic expressions, polynomials, rational expressions and square root expressions; solve equations and inequalities, including linear equations and quadratic equations; and graph linear equations. This course is the second in a sequence of courses leading to MATH 116 or higher.

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 including linear, quadratic, quadratic in form, as well as those containing rational expressions or radicals; graph linear inequalities in two variables; and analyze functions and non-functions.

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 introductory approach to geometry. Topics will include lines, polygons, area, volume, circles, similarity, and congruence.

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.

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, basic geometry, and Boolean algebra.

MATH 131 Technical Mathematics II* (3 Hours)

Prerequisites : MATH 130 with a grade of "C" or higher.

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.

MATH 165 Finite Mathematics* (3 Hours)

Prerequisites : MATH 114 with a grade of "C" or higher or MATH 116 with a grade of "C" or higher or an 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.

MATH 171 College Algebra* (3 Hours)

Prerequisites : MATH 114 with a grade of "C" or higher or 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 non-functions and functions, including constant, linear, quadratic, piecewise-defined, absolute value, square root, polynomial, rational, exponential, and logarithmic functions; solve equations, including polynomial, absolute value, radical, rational, exponential, logarithmic, and systems of linear equations; solve inequalities, including absolute value, polynomial, rational, and systems of linear inequalities; and apply functions in real-world situations.

MATH 171H HON: College Algebra (1 Hour)

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. Prerequisite: Honors department approval.

MATH 172 Trigonometry* (3 Hours)

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.

MATH 172H HON: Trigonometry (1 Hour)

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. Prerequisite: Honors department approval.

MATH 173 Precalculus* (5 Hours)

Prerequisites : MATH 114 with a grade of "C" or higher or MATH 116 with a grade of "C" or higher or appropriate score on the math placement test.

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.

MATH 173H HON: Precalculus (1 Hour)

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. Prerequisite: Honors department approval.

MATH 175 Discrete Mathematics and its Applications* (3 Hours)

Prerequisites : MATH 171 with a grade of "C" or higher 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.

MATH 181 Statistics* (3 Hours)

Prerequisites : MATH 171 with a grade of "C" or higher or MATH 173 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.

MATH 181H HON: Statistics (1 Hour)

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. Prerequisite: Honors department approval.

MATH 191 Math and Physics for Games I* (4 Hours)

Prerequisites : (MATH 171 with a grade of "C" or higher 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. 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. MATH 191 and PHYS 191 are the same course; enroll in only one.

MATH 191H HON: Math and Physics for Games I (1 Hour)

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. Prerequisite: Honors department approval.

MATH 210 Mathematics for Elementary Teachers I* (3 Hours)

Prerequisites : MATH 171 with a grade of "C" or higher 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.

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.

MATH 214 Introduction to Teaching Math and Science I* (1 Hour)

Prerequisites : MATH 171 with a grade of "C" or higher or an 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, BIOL 214, CHEM 214, GEOS 214, MATH 171, PHYS 214 and PSCI 214 are the same course; enroll in only one.

MATH 215 Introduction to Teaching Math and Science II* (1 Hour)

Prerequisites : ASTR 214 with a grade of "C" or higher or BIOL 214 with a grade of "C" or higher or CHEM 214 with a grade of "C" or higher or GEOS 214 with a grade of "C" or higher or MATH 214 with a grade of "C" or higher or PHYS 214 with a grade of "C" or higher 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.

MATH 231 Business and Applied Calculus I* (3 Hours)

Prerequisites : MATH 171 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 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.

MATH 231H HON: Business and Applied Calculus I (1 Hour)

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. Prerequisite: Honors department approval.

MATH 232 Business and Applied Calculus II* (3 Hours)

Prerequisites : MATH 231 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 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.

MATH 232H HON: Business and Applied Calculus II (1 Hour)

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. Prerequisite: Honors department approval.

MATH 241 Calculus I* (5 Hours)

Prerequisites : (MATH 171 with a grade of "C" or higher 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.

MATH 241H HON: Calculus I (1 Hour)

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. Prerequisite: Honors department approval.

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.

MATH 242H HON: Calculus II (1 Hour)

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. Prerequisite: Honors department approval.

MATH 243 Calculus III* (5 Hours)

Prerequisites : MATH 242 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.

MATH 243H HON: Calculus III (1 Hour)

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. Prerequisite: Honors department approval.

MATH 246 Elementary Linear Algebra* (3 Hours)

Prerequisites : MATH 242 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.

MATH 246H HON: Elementary Linear Algebra (1 Hour)

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. Prerequisite: Honors department approval.

MATH 254 Differential Equations* (4 Hours)

Prerequisites : MATH 243 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.

MATH 254H HON: Differential Equations (1 Hour)

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. Prerequisite: Honors department approval.

MATH 285 Statistics for Business* (4 Hours)

Prerequisites : MATH 231 with a grade of "C" or higher or MATH 241 with a grade of "C" or higher.

This is a beginning course in statistical analysis using calculus, 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.

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.

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.

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.

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.

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.

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.

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.

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.

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).

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.

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.

MFAB 133 Gas Metal Arc Welding (GMAW) I* (3 Hours)

Prerequisites : MFAB 124.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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. 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.

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.

MUS 124 Basic Music for the Elementary Classroom (2 Hours)

This course is designed to prepare the future classroom teacher in the fundamentals of music and awareness of the foundations of elementary school music. Students will also engage in a series of projects that introduce integration of music in the elementary classroom. This will be accomplished through application of musical concepts through classroom recorder playing, and a repertoire of standard songs for elementary age singers. 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.

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.

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.

MUS 131 Sight-Singing and Ear Training I (2 Hours)

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.

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.

MUS 141 Music Theory: Harmony I (3 Hours)

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.

MUS 141H HON: Music Theory: Harmony I (1 Hour)

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. Prerequisite: Honors department approval.

MUS 142 Music Theory: Harmony II* (3 Hours)**Prerequisites :** MUS 141 or department approval.

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.

MUS 143 Music Theory: Harmony III* (3 Hours)**Prerequisites :** MUS 142 or department approval.

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.

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.

MUS 151 Mixed Vocal Ensemble I* (1 Hour)**Prerequisites :** Audition and department approval.

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.

MUS 152 Mixed Vocal Ensemble II* (1 Hour)**Prerequisites :** MUS 151 and department approval.

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.

MUS 153 Mixed Vocal Ensemble III* (1 Hour)**Prerequisites :** MUS 152 and department approval.

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.

MUS 154 Mixed Vocal Ensemble IV* (1 Hour)**Prerequisites :** MUS 153 and department approval.

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.

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.

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.

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.

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.

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.

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.

MUS 161 Chamber Choir I* (1 Hour)

Prerequisites : Audition and department approval.

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.

MUS 162 Chamber Choir II* (1 Hour)

Prerequisites : MUS 161 and department approval.

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.

MUS 162H HON: Chamber Choir II (1 Hour)

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. Prerequisite: Honors department approval.

MUS 163 Chamber Choir III* (1 Hour)

Prerequisites : MUS 162 and department approval.

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.

MUS 164 Chamber Choir IV* (1 Hour)

Prerequisites : MUS 163 and department approval.

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.

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.

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.

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.

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.

MUS 176 Jazz Band I* (1 Hour)

Prerequisites : Audition and department approval.

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.

MUS 177 Jazz Band II* (1 Hour)

Prerequisites : MUS 176 or department approval.

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.

MUS 178 Jazz Band III* (1 Hour)

Prerequisites : MUS 177 or department approval.

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.

MUS 179 Jazz Band IV* (1 Hour)

Prerequisites : MUS 178 or department approval.

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.

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.

MUS 187 Jazz Improvisation I* (2 Hours)

Prerequisites : Department approval.

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.

MUS 188 Jazz Improvisation II* (2 Hours)

Prerequisites : MUS 187 and department approval.

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.

MUS 191 Concert Band I* (1 Hour)

Prerequisites : Department approval.

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.

MUS 192 Concert Band II* (1 Hour)

Prerequisites : MUS 191 and department approval.

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.

MUS 193 Concert Band III* (1 Hour)

Prerequisites : MUS 192 and department approval.

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.

MUS 194 Concert Band IV* (1 Hour)

Prerequisites : MUS 193 or department approval.

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.

MUS 195 Vocal Jazz Ensemble I* (1 Hour)

Prerequisites : Audition and department approval.

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.

MUS 196 Vocal Jazz Ensemble II* (1 Hour)

Prerequisites : MUS 195 and department approval.

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.

MUS 201 Chamber Ensemble I* (1 Hour)

Prerequisites : Department approval.

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.

MUS 202 Chamber Ensemble II* (1 Hour)

Prerequisites : MUS 201 or department approval.

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.

MUS 203 Chamber Ensemble III* (1 Hour)

Prerequisites : MUS 202 or department approval.

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.

MUS 204 Chamber Ensemble IV* (1 Hour)

Prerequisites : MUS 203 or department approval.

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.

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.

MUS 222 Piano Class II* (2 Hours)

Prerequisites : MUS 221 and department approval.

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.

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.

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.

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.

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.

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 department approval.

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 department approval.

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 department approval.

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 department approval.

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 department approval.

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 department approval.

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 department approval.

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:** 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.

NDT 130 Foundations of Neurodiagnostic Technology* (3 Hours)**Prerequisites :** Admission to the Neurodiagnostic Program.**Corequisites:** NDT 125 and NDT 135.

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.

NDT 135 Pediatric Neurodiagnostic Technology I* (5 Hours)**Prerequisites :** Admission to the Neurodiagnostic Program.**Corequisites:** 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.

NDT 140 Adult Neurodiagnostic Technology I* (4 Hours)

Prerequisites : Admission to the Neurodiagnostic Program and NDT 125 with a grade of "C" or higher and NDT 130 with a grade of "C" or higher and NDT 135 with a grade of "C" or higher.

Corequisites: NDT 145 and NDT 150 and NDT 156.

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.

NDT 145 Pediatric Neurodiagnostic Technology II* (4 Hours)

Prerequisites : Admission to the Neurodiagnostic Program and NDT 125 with a "C" or higher and NDT 130 with a "C" or higher and NDT 135 with a grade of "C" or higher.

Corequisites: NDT 140 and NDT 150 and NDT 156.

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.

NDT 150 Neurodiagnostic Clinical Correlates* (2 Hours)

Prerequisites : Admission to the Neurodiagnostic Program and NDT 125 with a grade of "C" or higher and NDT 130 with a grade of "C" or higher and NDT 135 with a grade of "C" or higher.

Corequisites: NDT 140 and NDT 145 and NDT 156.

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.

NDT 156 Neurodiagnostic Clinical I* (2 Hours)

Prerequisites : Admission to the Neurodiagnostic Program and NDT 125 with a grade of "C" or higher and NDT 130 with a grade of "C" or higher and NDT 135 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.

NDT 225 Polysomnography* (5 Hours)

Prerequisites : Admission to the Neurodiagnostic Program and NDT 140 with a grade of "C" or higher and NDT 145 with a grade of "C" or higher and NDT 150 with a grade of "C" or higher and NDT 156 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.

NDT 230 Adult Neurodiagnostic Technology II* (3 Hours)

Prerequisites : Admission to the Neurodiagnostic Program and NDT 140 with a "C" or higher and NDT 145 with a "C" or higher and NDT 150 with a "C" or higher and NDT 156 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.

NDT 240 Neurodiagnostic Clinical II* (4 Hours)

Prerequisites : Admission to the Neurodiagnostic Program and NDT 140 with a grade of "C" or higher and NDT 145 with a grade of "C" or higher and NDT 150 with a grade of "C" or higher and NDT 156 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 : Admission to the Neurodiagnostic Program and NDT 225 with a grade of "C" or higher and NDT 230 with a grade of "C" or higher and NDT 240 with a grade of "C" or higher.

Corequisites: NDT 250 and NDT 256.

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.

NDT 250 Neurodiagnostic Program Capstone* (3 Hours)

Prerequisites : Admission to the Neurodiagnostic Program and NDT 225 with a grade of "C" or higher and NDT 230 with a grade of "C" or higher and NDT 240 with a grade of "C" or higher.

Corequisites: NDT 245 and NDT 256.

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.

NDT 256 Polysomnography Clinical* (4 Hours)

Prerequisites : Admission to the Neurodiagnostic Program and NDT 225 with a "C" or higher and NDT 230 with a "C" or higher and NDT 240 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.

Nursing (NURS)

Courses

NURS 100 Concepts of Nursing Care: Foundations* (8 Hours)

Prerequisites : Admission to the Nursing Program.

Corequisites: NURS 125.

Prerequisites or corequisites: BIOL 227.

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)

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. Prerequisite: Honors department approval.

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)

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. Prerequisite: Honors department approval.

NURS 150 Concepts of Nursing Care: Childbearing Family and Children* (8 Hours)

Prerequisites : Admission to the Nursing Program and 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)

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. Prerequisite: Honors department approval.

NURS 175 Concepts of Nursing Care: PN to RN Transition* (6 Hours)

Prerequisites : Admission to the Nursing Program and BIOL 144 and BIOL 227 and ENGL 121 and MATH 171 and PSYC 218.

Corequisites: 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 200 Concepts of Nursing Care: Adult Health Alterations* (10 Hours)

Prerequisites : Admission to the Nursing Program and 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)

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. Prerequisite: Honors department approval.

NURS 225 Concepts of Nursing Care: Complex Patient Care Management* (10 Hours)

Prerequisites : Admission to the Nursing Program and 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)

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. Prerequisite: Honors department approval.

NURS 234 Registered Nurse Refresher* (9 Hours)

Prerequisites : Department approval with a current or previously licensed as a registered nurse, current CPR certification for healthcare providers, current health and dental records, and 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)

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.

PHIL 121H HON: Introduction to Philosophy (1 Hour)

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. Prerequisite: Honors department approval.

PHIL 124 Logic and Critical Thinking (3 Hours)

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.

PHIL 124H HON: Logic and Critical Thinking (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

PHIL 143 Ethics (3 Hours)

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.

PHIL 143H HON: Ethics (1 Hour)

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. Prerequisite: Honors department approval.

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.

PHIL 155 Bioethics* (3 Hours)

Prerequisites : BIOL 121 or 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. EVRN 155 and PHIL 155 are the same courses; only enroll in one.

PHIL 155H HON: Bioethics (1 Hour)

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. Prerequisite: Honors department approval.

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.

PHIL 177 Feminist Theory (3 Hours)

This course is an introduction to feminist thought through some of its major theories, figures, and issues. We will address various questions regarding gender relations and inequalities, what feminism is, and how feminist concerns intersect with issues related to class, race, ethnicity, and the environment. We will consider feminist perspectives regarding contemporary ethical and political issues as well. Throughout the course, we will critically examine a range of perspectives and their applications in order to develop a deeper understanding of feminist thought in theory and practice.

PHIL 210 History of Modern Philosophy (3 Hours)

This course takes a historical approach to the development of modern philosophy and covers the period from the Renaissance to the end of the 18th century. The course covers 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.

PHIL 292 Special Topics:* (3 Hours)

Prerequisites or corequisites: PHIL 121 with a grade of "C" or higher or PHIL 143 with a grade of "C" or higher.

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 100 Photography Basics (3 Hours)

Photography Basics covers camera operation, basic workflow, and preparing images for social media. Consumer grade cameras are covered including cell phones, point and shoot, and consumer DSLRs, accompanied by discussions, readings, and/or lectures regarding the historical, ethical, critical, and theoretical concerns of the medium.

PHOT 200 Foundations in Photography (3 Hours)

Foundations in Photography covers camera operation, workflow, and digital / analog printing methods. Both digital and analog methods are explored and accompanied by lectures, readings, and discussions regarding the historical, ethical, critical, and theoretical concerns of the medium. A digital camera with full manual controls with RAW capabilities, and a 35 MM film camera with full manual controls are required. JCCC has cameras available for student check-out. Diverse artists and photographers are included in lectures and the ethical implications of photography and its representations of marginalized communities is discussed.

PHOT 201 Photography I* (4 Hours)**Prerequisites :** PHOT 200.

This is the first of the two-part foundational Photography sequence. This course provides students with a rigorous immersion into the formal, technical, and conceptual concerns and challenges of photography by way of the 4X5, large format, view camera. Embracing both the wet and digital darkrooms, students shoot and develop sheet film that is then utilized to produce both traditional and digital prints. Intermediate digital editing methods are introduced and explored. View cameras are provided.

PHOT 202 Photography II* (4 Hours)**Prerequisites :** PHOT 201.

This is the second of the two-part foundational Photography sequence. This advanced course builds upon the skills and knowledge learned in PHOT 201, Photography 1 with an additional emphasis on color, RAW workflow, and advanced methods for digital capture, manipulation, editing, and composition. Additionally, students work extensively with large-format, fine art, inkjet printers to create custom ICC printing profiles. A digital SLR (RAW capable) camera with full manual controls is required. JCCC has cameras available for student check-out. This class concentrates on both the development of craft and preparing students to more deeply examine their personal interests in the medium. Emphasis will be placed on exploring color photography historically, technically, and personally through presentations, readings, and photographing / studio work. Students will study advanced methods for digital capture, tonal and color correction, automatic file processing, large scale printing, and optimal ways to prepare digital files for a variety of reproduction processes.

PHOT 223 Studio Photography* (3 Hours)**Prerequisites :** PHOT 200.

This course provides an introduction to advanced techniques, tools, procedures and concepts of studio lighting. Students will use professional camera and studio equipment, including studio electronic flash and hand-held light/flash meters. This course also includes advanced camera techniques for total image control. Students will use studio lighting to shoot photographs that will then be printed and finished for gallery presentation. The medium is explored for both its technical and conceptual merit as a medium of fine art. Applications of digital photography as they apply to studio photographic processes will also be explored. Ethical implications of photographs will be discussed. Students will apply the above to make images for a series of advanced studio assignments.

PHOT 224 Experimental Processes* (3 Hours)**Prerequisites :** PHOT 200.

Experimental Processes is an introduction to the understanding and production of image-based works utilizing experimental approaches and alternative processes in an interdisciplinary environment. The student will be creating images using historical, experimental, and alternative mediums and processes to create visual art.

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.

PHOT 293 Photography Seminar* (3 Hours)**Prerequisites :** PHOT 202 and PHOT 223 and Department approval.

Photography Seminar is an advanced photography class designed to aid students in the development of individual creative projects and bodies of work. This course will holistically instruct on the steps in portfolio development, image sequencing, exhibition preparation, and visual literacy. Students are required to submit a proposal and gain instructor permission for enrolling in this course. This course is repeatable for credit.

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.

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 106 Lifetime Sport: (1 Hour)

This course provides a basic knowledge of a lifetime sport which can be enjoyed throughout life and can enhance one's chances of well being and add to one's total fitness program. Students will learn fundamental skills for the lifetime sport as well as history, benefits, equipment, rules, etiquette, safety, scoring and strategy. This is a repeatable course and may be taken more than once for credit.

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.

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.

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.

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 178 Performance Fitness I (1 Hour)

This course is an introductory course designed to provide basic introductory training concepts in individual skill and performance-based fitness. Physical activity tracking will be utilized in this course.

HPER 179 Performance Fitness II* (1 Hour)

Prerequisites : HPER 178.

Students will have the opportunity to learn the fundamentals of general performance fitness. Introductory aspects of performance, nutrition, and psychological development are incorporated into this class. Power and advanced power, speed, muscular strength, hypertrophy and endurance, cardiorespiratory, motor skills, and agility drills are taught and practiced. The class will include general performance-based fitness. The students will learn about the principle of year-round conditioning, including conditioning appropriate to the off-season, preparatory period, pre-competition period and competition period.

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 186 Fitness Assessment (2 Hours)

This course emphasizes the value of evidence-based fitness assessments to interpret overall personal and professional fitness. Assessments will be administered and evaluated to determine chronic risk factors and personal fitness levels. Goal setting, fitness tracking, and fitness programming will be introduced to help students discover and implement a healthy, sustainable lifestyle.

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)

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)

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.

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 209 Introduction to Kinesiology* (3 Hours)

Prerequisites or corequisites: BIOL 140 or BIOL 144.

This course is an overview of the skeletal system, muscular system, joints and nerves and how they produce human movement with an emphasis on bony landmarks, muscle origins, insertions, joint actions and innervations as it relates to proper exercise and human movement mechanics.

HPER 211 Applied Exercise Science (3 Hours)

Applied Exercise Science covers the theory and practice of individualized exercise prescription for personal training. This course introduces the student to the fundamental scientific concepts applicable to exercise and physical fitness. The foundations for personal training include: exercise science review, health risk stratification, fitness assessment, fitness program, and session design, proper execution of exercises, cuing and error correction, lifestyle coaching skills and considerations for special populations. The acute and chronic effects of exercise will be addressed with practical applications to fitness programming and instruction.

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 225 Coaching Principles: Coaching Teams and Individuals for Success (3 Hours)

Being a successful coach is an enormous challenge. In this course the student will acquire basic skills that will prepare a new coach to lead a community youth team. This course will also provide the quality principles to become an assistant high school or college coach. Combined with these basics and further coaching experience one would be qualified to successfully lead a High School or College team.

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.

HPER 242 Lifetime Fitness III* (1 Hour)

Prerequisites : HPER 241.

This course is a continuation and expansion of Lifetime Fitness II.

HPER 243 Lifetime Fitness IV* (1 Hour)

Prerequisites : HPER 242.

This course is a continuation and expansion of Lifetime Fitness III.

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 250 Introduction to Sports Management (3 Hours)

The sport industry has become a dominant influence in American society, and is evolving at a dramatic rate. Students will be introduced to the dynamic nature of sport management and the potential for successful and satisfying career opportunities in the sport industry, as well as sport principles as they apply to management, leadership style, communication, and motivation. This course serves as a foundation for students' further studies in various subject areas. The primary focus of this course will be to provide an overview of the sport industry and cover basic fundamental knowledge and skill sets of the sports manager, as well as potential job employment and career choices in the field/profession of sport management, such as sport marketing, sport law, sport facility and event management, economics of sport, and sport finance. 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.

HPER 292 Special Topics: (1-3 Hour)

This course periodically offers specialized or advanced discipline-specific content related to health, physical education, wellness or exercise, not usually taught in the curriculum, to interested and qualified students. Students may repeat Special Topics in Health and Wellness for credit but only on different topics.

Physical Science (PSCI)

Courses

PSCI 120 Physical Science (4 Hours)

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.

PSCI 214 Introduction to Teaching Math and Science I* (1 Hour)

Prerequisites : MATH 171 with a grade of "C" or higher or an 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.

PSCI 215 Introduction to Teaching Math and Science II* (1 Hour)

Prerequisites : ASTR 214 with a grade of "C" or higher or BIOL 214 with a grade of "C" or higher or CHEM 214 with a grade of "C" or higher or GEOS 214 with a grade of "C" or higher or MATH 214 with a grade of "C" or higher or PHYS 214 with a grade of "C" or higher 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.

Physics (PHYS)

Courses

PHYS 130 College Physics I* (5 Hours)

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

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 translational and rotational motion, force, work, mechanical and thermal energy, linear and angular momentum, and fluid mechanics. 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 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.

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)

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, optics, and some modern 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 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.

PHYS 133 Applied Physics* (5 Hours)

Prerequisites : MATH 130 (or higher) with a grade of "C" or higher.

This is a one-semester, comprehensive physics course intended for students enrolled in the biotechnology certificate program or an associate of applied science degree program. The course will cover all areas of applied physics, including mechanics, heat, thermodynamics, waves, electricity, magnetism, light, optics and some elements of modern physics. Emphasis will be placed on concepts and applications to real-life problems. This course includes an integrated laboratory component the completion of which is a necessary part of the total instructional package.

PHYS 191 Math and Physics for Games I* (4 Hours)

Prerequisites : (MATH 171 with a grade of "C" or higher 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. 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. MATH 191 and PHYS 191 are the same course; enroll in only one.

PHYS 191H HON: Math and Physics for Games I (1 Hour)

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. Prerequisite: Honors department approval.

PHYS 214 Introduction to Teaching Math and Science I* (1 Hour)

Prerequisites : MATH 171 with a grade of "C" or higher or an 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.

PHYS 215 Introduction to Teaching Math and Science II* (1 Hour)

Prerequisites : ASTR 214 with a grade of "C" or higher or BIOL 214 with a grade of "C" or higher or CHEM 214 with a grade of "C" or higher or GEOS 214 with a grade of "C" or higher or MATH 214 with a grade of "C" or higher or PHYS 214 with a grade of "C" or higher 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.

PHYS 220 Engineering Physics I* (5 Hours)

Prerequisites or corequisites: MATH 242.

Engineering Physics I (and associated laboratory experience) is the study of translational and rotational motion, force, work, mechanical and thermal energy, linear and angular momentum, mechanical waves, and fluid motion using the tools of algebra, trigonometry, and calculus.

PHYS 221 Engineering Physics II* (5 Hours)

Prerequisites : PHYS 220 and MATH 242.

Engineering Physics II (and associated laboratory experience) is the continuation of Engineering Physics I. It is the study of electricity, magnetism, electromagnetic waves, and optics using the tools of algebra, trigonometry, and calculus.

Plumbing (PLUM)

Courses

PLUM 110 Introduction to Plumbing Systems (3 Hours)

This is an introduction course to the plumbing trade with an emphasis on residential plumbing and installation methods. Students will be instructed on the basic fundamentals of the plumbing trade. This course is designed to provide training in the identification and use of plumbing tools and materials, plumbing print reading, math skills used in the plumbing trade, reading residential plumbing drawings and sketches, perform basic pipe sizing, copper and plastic piping practices, soldering and brazing, cutting and threading carbon steel pipe, joining cast-iron pipe and fittings, making flared and compression joints with copper tubing, PVC and CPVC fittings, fitting and cleanout requirement for DWV piping, and installing natural gas piping systems.

PLUM 125 Residential Plumbing (3 Hours)

This course introduces students to residential plumbing fixtures, faucets, drain assemblies and appliances. Students will study and practice safe installation applications of basic residential plumbing devices. The items discussed in this course will focus mainly on wood-framed structures such as single and multi-family dwellings along with the different types of materials and tools that are commonly used with these structures. This course is designed to provide an understanding of the plumbing system of a structure including water supply distribution pipes, fixtures and fixture traps, soil, waste and vent pipes, building drains and building sewers, storm water drainage and their devices, appurtenances and connections within the building and outside the building within the property lines.

PLUM 130 Print Reading and Estimating (3 Hours)

This course explores reading, interpreting, and understanding of construction drawings and developing piping sketches including plan, elevation and isometric views, size drain waste and vent piping. This course was designed for plumbing students who need to develop the ability to interpret trade prints and plan the installation of the required plumbing. The students will be taught the basics of sketching and plumbing designs on construction prints.

PLUM 140 Backflow Preventers (2 Hours)

This course is designed to provide essential information by blending theoretical and practical aspects of cross-connection controls concerning the theory of backflow prevention and the different types of backflow devices that are used to protect the public water supply. This class will provide the students with an understanding of the principles of backflow prevention, back pressure and backsiphonage along with applying the hydraulic principles and laws. Students will be able to recognize the proper backflow prevention assembly application, installation and operation. Students will be able to demonstrate how to properly install and test backflow protection devices.

PLUM 210 DWV and Water Distribution* (3 Hours)

Prerequisites or corequisites: PLUM 125.

This course introduces students to the layout and design of the drain, waste, and vent (DWV) along with how to size water distribution lines in residential homes. The students will gain practical application of using leveling instruments, shooting elevations, and grading pipes. Students will become familiar with the different types of piping utilized in water and distribution piping. This class will examine sewer treatment procedures and disposal systems; including sewers, septic tanks, calculating tank sizes, maintenance causes, and removal of sewer obstructions.

PLUM 240 Installation, Maintenance and Repair* (3 Hours)

Prerequisites or corequisites: PLUM 130.

This course is designed to convey solid plumbing practices applicable to all areas of plumbing trade including: materials, installations, maintenance, and repair. Traditional approaches will be examined to ensure that the students receive a broad exposure to all materials and practices of the work place. Emphasis will be placed on advanced concepts of the plumbing industry. This class focuses on the maintenance and repairing of plumbing fixtures and includes the scientific principles of explaining why water supply and sewage systems work and mathematical principles of plumbing. This course will allow students to learn practical application in the lab setting of the theoretical material covered in class in how to diagnose and repair common problems associated with plumbing components and systems.

PLUM 250 Commercial Plumbing* (3 Hours)

Prerequisites : PLUM 110.

This course introduces students to commercial plumbing features. Students will study and practice safe application and installation of basic commercial plumbing devices. This course is designed to provide an understanding of the plumbing system of a commercial structure including water supply distribution pipes; fixtures and fixture traps; soil, waste and vent pipes; building drains and building sewers; storm water drainage; appurtenances and connections within the building and outside the building within the property lines.

PLUM 275 Plumbing Code Review* (3 Hours)

Prerequisites or corequisites: PLUM 125.

This course is designed to assist students in the understanding and the interpretation of the current International Plumbing Code (IPC) and International Fuel Gas Code (IFGC) and the minimum requirements for plumbing materials and design. These codes are founded upon the basic principles of safety through properly designed systems, acceptable installation standards and appropriately maintained plumbing systems.

PLUM 280 Plumbing 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 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 plumbing field. Minimum 15 hrs. per week on-the-job training.

Political Science (POLS)

Courses

POLS 122 Political Science (3 Hours)

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.

POLS 122H HON: Political Science (1 Hour)

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. Prerequisite: Honors department approval.

POLS 124 American National Government (3 Hours)

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.

POLS 124H HON: American Nat. Government (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

POLS 132H HON: Introduction to Comparative Government (1 Hour)

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. Prerequisite: Honors department approval.

POLS 135 International Relations (3 Hours)

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.

POLS 135H HON: International Relations (1 Hour)

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. Prerequisite: Honors department approval.

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.

POLS 200H HON: Model United Nations (1 Hour)

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. Prerequisite: Honors department approval.

POLS 220 Introduction to Public Policy (3 Hours)

This course introduces the policymaking process. It provides an overview of key theories of public policymaking and of the actors involved in the policymaking process; it examines incentives, enhancements, and constraints that shape the policymaking process; and it equips students with the tools to analyze and evaluate the impact of public policy. Several public policy areas are examined.

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.

POLS 270 Political Science Internship* (3 Hours)

Prerequisites : Department approval.

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.

This course introduces practical nursing and roles of the practical nurse as well as profession and client-related care concepts. Emphasis is placed on the knowledge and skills needed to provide safe, quality care. The theoretical foundation for basic data collection and nursing skills are presented and an introduction to the nursing process provides the student with a framework for decision making.

PN 126 KSPN Foundations of Nursing Clinical* (2 Hours)

Prerequisites : Admission to the Practical Nursing Program.

Corequisites: PN 125.

This course introduces the skills required to practice nursing. The theoretical foundation for basic data collection and nursing skills are presented and the student is given an opportunity to demonstrate these skills in a clinical laboratory setting. Students are also given the opportunity to apply the nursing process to client-related situations.

PN 130 KSPN Nursing Care of Adults I* (4 Hours)

Prerequisites : Admission to the Practical Nursing Program and PN 125 with a grade of "C" or higher and PN 126 with a passing grade.

Corequisites: PN 132.

This course focuses on the care of adult clients experiencing common medical/surgical health alterations with predictable outcomes. Emphasis is placed on the care of clients with alterations in cardiac output and tissue perfusion, oxygenation, regulation and metabolism, and integument. Principles of pre- and post-operative care and IV therapy are also addressed.

PN 132 KSPN Nursing Care of Adult I Clinical* (2 Hours)

Prerequisites : Admission to the Practical Nursing Program and PN 125 with a "C" or higher and PN 126 with a passing grade.

Corequisites: PN 130.

This course focuses on the care of adult clients with common medical/surgical health alterations. The clinical laboratory experience gives students the opportunity to apply theoretical concepts from Nursing Care of Adults I and implement safe client care in selected settings.

PN 136 KSPN Fundamentals of Pharmacology and Safe Medication Administration* (2 Hours)

Prerequisites : Admission to the Practical Nursing Program.

This course introduces the principles of pharmacology. Emphasis is placed on nursing care related to the safe calculation and administration of medications to clients across the life span.

PN 140 KSPN Maternal Child Nursing* (2 Hours)

Prerequisites : Admission to the Practical Nursing Program.

Corequisites: PN 141.

This course provides an integrative, family-centered approach to the care of childbearing women, newborns, and children. Emphasis is placed on care of the pregnant woman and newborn, normal growth and development, and common pediatric disorders.

PN 141 KSPN Maternal Child Nursing Clinical* (1 Hour)

Prerequisites : Admission to the Practical Nursing Program.

Corequisites: PN 140.

This course provides an integrative, family-centered approach to the care of childbearing women, newborns, and children. Students observe the uncomplicated birth process and practice postpartum care as well as care of the newborn in the clinical laboratory setting. Common pediatric diseases and the growth and development process is the focus of child-related clinical laboratory experiences.

PN 145 KSPN Mental Health Nursing* (2 Hours)

Prerequisites : Admission to the Practical Nursing Program.

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 client with a mental health disorder.

PN 150 KSPN Nursing Care of Adults II* (4 Hours)

Prerequisites : Admission to the Practical Nursing Program.

Corequisites: PN 152.

This course focuses on the care of adult clients experiencing common medical/surgical health alterations with predictable outcomes. Emphasis is placed on the care of clients with alterations in cognition and sensation, mobility, elimination, immunity and hematology, and reproduction. Principles related to emergency preparedness are also addressed.

PN 152 KSPN Nursing Care of Adults II Clinical* (2 Hours)

Prerequisites : Admission to the Practical Nursing Program.

Corequisites: PN 150.

This course focuses on the care of adult clients with common medical/surgical health problems. The clinical laboratory experience gives students the opportunity to apply theoretical concepts from Nursing Care of Adults I and II and implement safe client care in selected settings. Students are also given the opportunity to practice leadership skills while managing a caseload of clients.

PN 155 KSPN Care of Aging Adults* (2 Hours)

Prerequisites : Admission to the Practical Nursing Program.

This course is designed to explore issues related to aging adults. Course content addresses the impact of ageism, alterations in physiological and psychosocial functioning, and the role of the practical nurse in caring for older adult clients across a continuum of care.

PN 175 KSPN Leadership, Roles and Issues* (1 Hour)

Prerequisites : Admission to the Practical Nursing Program.

This course provides orientation to leadership roles of the LPN and related responsibilities. It also introduces issues to students that they will encounter in the workplace.

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.

PSYC 130 Introduction to Psychology (3 Hours)

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.

PSYC 130H HON: Introduction to Psychology (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

PSYC 215 Child Development* (3 Hours)**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.

PSYC 215H HON: Child Development (1 Hour)

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. Prerequisite: Honors department approval.

PSYC 218 Human Development* (3 Hours)**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.

PSYC 218H HON: Human Development (1 Hour)

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. Prerequisite: Honors department approval.

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.

PSYC 220H HON: Social Psychology (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

PSYC 250H HON: Health Psychology (1 Hour)

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. Prerequisite: Honors department approval.

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.

Public Health (PH)

Courses

PH 142 Health Communication in a Diverse World (3 Hours)

This course provides the students with opportunities to explore the principles and application of communication at the individual, group and community level. Communication and advocacy will be studied in a variety of settings such as healthcare, schools, workplace and special populations including children, elderly, homeless, limited English-proficient patients and individuals with special needs. 3 hrs. lecture/wk.

PH 152 Health Education (3 Hours)

Students in this course will explore the importance of health, health education and health promotion at the individual, group and community level. The course emphasizes a skill-oriented focus and preparation for a health educator, including opportunities to identify and address a community need while applying basic skills of advocacy and leadership through the delivery of a course. 3 hrs. lecture/wk.

PH 162 Health Administration (3 Hours)

This course will provide an overview of the healthcare delivery system, including various levels of care providers and facilities. Students will explore administration of long-term care and public health services, including financial management, government policies and management of care. 3 hrs. lecture/wk.

Railroad Conductor (RRTC)

Courses

RRTC 123 Introduction to Conductor Service* (4 Hours)

Prerequisites : Admission to the JCCC railroad operations program.

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.

RRTC 175 Conductor Mechanical Operation* (2 Hours)

Prerequisites : Admission to the JCCC railroad operations program.

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 car mechanical policies and practices to ensure safe railroad operations.

RRTC 261 Conductor Service* (2 Hours)

Prerequisites : Admission to the JCCC railroad operations program.

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.

RRTC 263 General Code of Operating Rules* (4 Hours)

Prerequisites : Admission to the JCCC railroad operations program.

Conductors must maintain a thorough understanding of the General Code of Operating Rules (GCOR). This course provides an in-depth study of the GCOR. Upon completion of this course, the student should be able to demonstrate abilities to apply the General Code of Operating Rules to safe and efficient train movement and operations.

RRTC 267 Conductor Field Application* (4 Hours)

Prerequisites : Admission to the JCCC railroad operations program.

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 : 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.

RREL 112 Track Circuits and Systems* (4 Hours)

Prerequisites : RREL 110 and 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.

RREL 114 Traffic Control, Switch Machines & Locks* (4 Hours)

Prerequisites : RREL 112 and 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.

RREL 116 Interlocking, Classification, Crossings & Gates* (4 Hours)

Prerequisites : RREL 114 and 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.

Railroad Industrial Technology (RRIT)

Courses

RRIT 132 Thermite Welding* (3 Hours)

Prerequisites : 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.

RRIT 136 Rail and Switch Point Repair Welding* (3 Hours)

Prerequisites : BNSF Railway Training Director 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.

RRIT 142 Structural Pile Welding* (3 Hours)

Prerequisites : BNSF Railway Training Director approval and 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.

RRIT 145 Frog Welding* (3 Hours)

Prerequisites : BNSF Railway Training Director 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.

RRIT 160 Basic Welding* (3 Hours)

Prerequisites : BNSF Railway Training Director approval and JCCC department approval.

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), shielded metal arc welding (SMAW), and flux core arc welding (FCAW) equipment. The SMAW and FCAW portion of the course will concentrate on flat groove welds (1G) and horizontal fillet welds (2F). The student is required to pass welding tests in accordance with the Railroad Welding Specification for Cars and Locomotives (AWS D15.1).

RRIT 162 Structural Stick Welding* (3 Hours)

Prerequisites : BNSF Railway Training Director approval and JCCC department approval.

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).

RRIT 164 Structural Wire Welding* (3 Hours)

Prerequisites : BNSF Railway Training Director approval and JCCC department approval.

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).

RRIT 166 Mechanical Welding Air Brake Pipe* (3 Hours)

Prerequisites : Department approval.

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).

RRIT 168 Sheet Metal Welding* (3 Hours)

Prerequisites : BNSF Railway Training Director approval and JCCC department approval.

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).

Railroad Operations (RRT)

Courses

RRT 100 Introduction to the Railroad Industry (2 Hours)

This course will provide Railroad Operation majors instruction in the railroad industry from pre-employment to retirement. Current and relevant legal, ethical issues, workplace safety, team management and problem-solving skills important to the railroad industry are covered. Professional branding through social media, resume and cover letter will be produced. Self-promotion, networking, job searches and interview skills will also be covered.

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.

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.

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.

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.

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 : 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.

RRTM 131 Freight Car Repair Track Inspector* (3 Hours)

Prerequisites : RRTM 130 and 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.

RRTM 152 Freight Car Air Brakes, Basic* (2 Hours)

Prerequisites : 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.

Reading (RDG)

Courses

RDG 126 Academic Reading* (3 Hours)

Prerequisites : Appropriate test score 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.

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.

Religion (REL)

Courses

REL 120 Exploring World Religions (3 Hours)

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.

REL 120H HON: Exploring World Religions (1 Hour)

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. Prerequisite: Honors department approval.

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.

REL 125H HON: Religions of the East (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

REL 150H HON: Islam: Religion and Civilization (1 Hour)

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. Prerequisite: Honors department approval.

REL 292 Special Topics:* (3 Hours)

Prerequisites or corequisites: REL120 with a "C" or higher or REL 125 with a "C" or higher or REL 126 with a "C" or higher.

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 and BIOL 144 with a "C" or higher and CHEM 122 with a "C" or higher and ENGL 121 with a "C" or higher.

Corequisites: RC 124 and RC 131.

Prerequisites or corequisites: BIOL 230 with a "C" or higher.

This is a comprehensive study of the physiology and pathophysiology of the pulmonary, cardiovascular and renal systems as they relate to respiratory care.

RC 124 Fundamentals of Respiratory Care* (6 Hours)

Prerequisites : Admission to the Respiratory Care Program and BIOL 144 with a grade of "C" or higher and CHEM 122 with a grade of "C" or higher and ENGL 121 with a grade of "C" or higher.

Corequisites: RC 120 and RC 131.

Prerequisites or corequisites: BIOL 230 with a grade of "C" or higher.

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.

RC 131 Cardiopulmonary Diagnostics* (3 Hours)

Prerequisites : Admission to the Respiratory Care Program and BIOL 144 with a "C" or higher and CHEM 122 with a "C" or higher and ENGL 121 with a "C" or higher.

Corequisites: RC 120 and RC 124.

Prerequisites or corequisites: BIOL 230 with a "C" or higher.

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.

RC 136 Cardiopulmonary Diseases* (3 Hours)

Prerequisites : Admission to the Respiratory Care Program and RC 120 with a grade of "C" or higher and RC 124 with a grade of "C" or higher and RC 131 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.

RC 140 Respiratory Care Pharmacology* (2 Hours)

Prerequisites : Admission to the Respiratory Care Program and RC 120 with a grade of "C" or higher and RC 124 with a grade of "C" or higher and RC 131 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.

RC 145 Cardiopulmonary Critical Care I* (5 Hours)

Prerequisites : Admission to the Respiratory Care Program and RC 120 with a grade of "C" or higher and RC 124 with a grade of "C" or higher and RC 131 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, arterial blood gas procurement, hemodynamic monitoring, mechanical ventilation, and chest trauma. Subtopics in mechanical ventilation consist of basic terms and concepts, mechanical ventilation function, breath delivery, indications for mechanical ventilation, mode selection, and initial settings.

RC 146 Pediatric/Neonatal Respiratory Care* (2 Hours)

Prerequisites : Admission to the Respiratory Care Program and RC 120 with a grade of "C" or higher and RC 124 with a grade of "C" or higher and RC 131 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.

RC 255 Cardiopulmonary Critical Care II* (5 Hours)

Prerequisites : Admission to the Respiratory Care Program and RC 136 with a grade of "C" or higher and RC 140 with a grade of "C" or higher and RC 145 with a grade of "C" or higher and RC 146 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 management of the ventilator-patient system. Topics will include: physical examination of the mechanically ventilated patient, ventilator graphics, troubleshooting the ventilator-patient system, ventilator adjustments to achieve optimal oxygenation and ventilation, disease specific ventilator management, non-conventional modes of mechanical ventilation, and pediatric mechanical ventilation.

RC 265 Respiratory Care Program Capstone* (3 Hours)

Prerequisites : Admission to the Respiratory Care Program and RC 255 with a grade of "C" or higher and RC 271 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. In preparing for credential examination students will demonstrate knowledge and skill competency attainment expected of a skilled Respiratory Therapist. Exploration of subspecialty 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).

RC 271 Respiratory Care Clinical Experience I* (6 Hours)

Prerequisites : Admission to the Respiratory Care Program and RC 136 with a grade of "C" or higher and RC 140 with a grade of "C" or higher and RC 145 with a grade of "C" or higher and RC 146 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.

RC 272 Respiratory Care Clinical Experience II* (6 Hours)

Prerequisites : Admission to the Respiratory Care Program and RC 255 with a grade of "C" or higher and RC 271 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 and pulmonary function testing.

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)

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.

SOC 122H HON: Introduction to Sociology (1 Hour)

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. Prerequisite: Honors department approval.

SOC 125 Social Problems (3 Hours)

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.

SOC 125H HON: Social Problems (1 Hour)

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. Prerequisite: Honors department approval.

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. CJ 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.

SOC 131H HON: Sociology of Families (1 Hour)

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. Prerequisite: Honors department approval.

SOC 146 Introduction to Social Work and Social Welfare (3 Hours)

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.

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.

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.

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.

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.

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?

SOC 270 Men and Masculinities (3 Hours)

This course explores the construct of masculinity within the cultural context of the US. It will examine the experiences of men through the life course and across a variety of institutional structures. Particular focus is given to the intersection of masculinity with race, ethnicity, social class, transgenderism and sexuality. Students will critically analyze contemporary notions of masculinity in "crisis" and men's involvement in both men's movements and gender equality movements.

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.

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)

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.

THEA 120H HON: Introduction to Theater (1 Hour)

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. Prerequisite: Honors department approval.

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.

THEA 121H HON: Fundamentals of Acting (1 Hour)

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. Prerequisite: Honors department approval.

THEA 123 Improvisation for the Theater* (2 Hours)

Prerequisites : THEA 121 with a grade of "C" or higher.

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.

THEA 130 Acting I* (3 Hours)

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.

THEA 130H HON: Acting I (1 Hour)

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. Prerequisite: Honors department approval.

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.

THEA 133 Technical Practicum I (1 Hour)

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.

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.

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.

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.

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.

THEA 140 Basic Stagecraft (3 Hours)

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.

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. This course focuses on understanding foundational elements of theatrical design and developing the skills to translate text into visual content. It involves script analysis, research, creative exploration, and visual communication. Emphasis will be on the processes and practices used in designing for the performing arts.

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.

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.

THEA 230 Acting II* (3 Hours)

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)

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. Prerequisite: Honors department approval.

THEA 232 Introduction to Stage Directing and Management* (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.

THEA 233 Technical Practicum II* (1 Hour)

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.

THEA 245 Introduction to Scene Design* (3 Hours)

Prerequisites : THEA 145.

Students will further develop the technical and design techniques of Scenic Design. This includes learning the responsibilities of a Scenic Designer and practicing the process of Scenic Design for theatre from script analysis to executing final design models and drafting.

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 260 Introduction to Light, Sound and Projections (3 Hours)

Students will develop technical principles and applications of lighting, sound and projections for the stage. The class will utilize basic light, sound and projection equipment to create visual and audio landscapes. This will include creating light plots, mixing sounds, and mapping projections.

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 : Department 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.

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.

WEB 112 Professional Skills for the Digital Developer (3 Hours)

This course covers the development of a professional digital portfolio. Also, students will use technology to achieve effective 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. Professional branding through social media, resume and cover letter will be produced. Self-promotion, networking, job searches and interview skills will also be covered.

WEB 112H HON: Professional Skills for the Digital Developer (1 Hour)

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. Prerequisite: Honors department approval.

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.

WEB 116 Digital Media Concepts (2 Hours)

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.

WEB 116H HON: Digital Media Concepts (1 Hour)

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. Prerequisite: Honors department approval.

WEB 118 Digital Workflow (3 Hours)

The course introduces the terminology, planning, processes, and tools needed for web development and digital media projects. Students will be introduced to current and best practice strategies, including how to manage client expectations, develop requirements for designing in the browser, create style guides and documentation, develop techniques for handling responsive design requirements, and visualizing the points where responsive designs change.

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.

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.

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.

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.

WEB 124H HON: Web Scripting: JavaScript II (1 Hour)

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. Prerequisite: Honors department approval.

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.

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.

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.

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.

WEB 148 Server Scripting: PHP with MySQL II* (2 Hours)**Prerequisites :** WEB 128.

Students will apply Hypertext Preprocessor (PHP), Structured Query Language (SQL), and MySQL commands and skills to extend their knowledge of adding server-side functionality to webpages. Students will use the Model View Controller (MVC) pattern to build, test, debug and deploy a PHP – MySQL application. Students will work with various object and data types including dates, strings numbers, arrays, and functions. Students will also build regular expressions to scrub and validate data stored in a MySQL relational database.

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.

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.

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.

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.

WEB 231 User Experience* (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. It will also provide knowledge of how to evaluate user experience concepts using methods such as heuristic evaluation, prototyping and usability studies. Through readings, critiques, exercises and discussions, students will explore what makes the experience of an interactive media application successful.

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.

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.

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.

WEB 237 Emerging Technologies* (3 Hours)

Prerequisites : WEB 126.

This course provides a practical approach to encourage greater understanding and analysis of emerging technologies such as the web, social media, mobile apps, video games and wearables. The course focuses on how companies, organizations and individuals are using digital media to communicate and connect with all of their various stakeholder groups, including consumers. As the media environment changes with new technological capabilities to distribute and retrieve messages, companies' promotional communication strategies must adapt as well. This course exposes students to the decision-making involved in a promotional communication context in terms of both message content development and placement.

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.

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.

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.

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.

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.

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.

WEB 290H HON: Web Development and Digital Media Capstone (1 Hour)

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. Prerequisite: Honors department approval.

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.

WEB 292H HON: Special Topics:* (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.

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)

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 a historical and contemporary look at global feminism.

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.

Writing Center (WCTR)

Courses

WCTR 103 Practical Writing Skills (1 Hour)

This Writing Center course is designed to enable writers to review parts of speech, learn the elements of a sentence, and learn basic sentence patterns. Emphasis is on simple sentence composing and combining, using complex and compound sentences. Students are encouraged practice writing to develop fluency of text.

WCTR 107 Sentence Pattern Skills (1 Hour)

This Writing Center course is designed to enable writers to identify parts of speech, elements of a sentence, and basic sentence patterns. Emphasis is on simple sentence composing and combining. Students are encouraged practice writing to develop fluency of text.

WCTR 108 Composing Skills (1 Hour)

This course is designed to teach students how to write at the paragraph level. Students will learn how to choose a topic, narrow the topic, and to organize and develop the topic using supporting evidence. Emphasis will be given to revision and editing strategies emphasizing fluency of text.

WCTR 109 Proofreading Skills (1 Hour)

This course 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.

WCTR 110 English Grammar Review (1 Hour)

This course reviews parts of speech, sentence elements, sentence patterns, and common sentence level errors. This course facilitates the development of writing fluency.

WCTR 112 Research Skills (1 Hour)

This research skills course covers selectively gathering resource materials, synthesizing the information, and developing an academic essay in an agreed citation format.

WCTR 115 Revision Skills (1 Hour)

This revision skills class exposes the practicing writer to strategies and resources used to revise all writing, including business, academic, and personal writing. Revision Skills compliments courses in which writing is assigned and encourages students to use current writing activities or assignments to facilitate deeper understanding of revision practices.

WCTR 120 Writing in the Disciplines (1 Hour)

This course is designed to complement and/or support students enrolled in classes in which writing is intrinsic to the curriculum. Students will be exposed to different format styles and genres and encouraged to use revision strategies to increase writing ability.

Degree Requirements

JCCC offers four general education degrees. Each degree type has specific courses required to fulfill the requirements for earning the degree.

- Associate of Arts (p. 161)
- Associate of Science (p. 171)
- Associate of Applied Science (p. 158)
- Associate of General Studies (p. 166)

Students in all degree and certificate programs must also meet the standard JCCC Graduation Requirements (<https://www.jccc.edu/student-resources/graduation/>). 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 60 college-level credit hours, not to exceed 68 credit hours, within specified course distribution subgroups, including areas of emphasis, with a 2.0 or higher GPA.
- the 68-credit-hour maximum shall not apply to any programs having external accreditation or industry requirements that exceed the 68-credit-hour limit.

The total program hours necessary to complete the associate of applied science degree include 15 credit hours of general education requirements plus the courses listed for the specific career program. Please refer to your specific degree for a list of all requirements.

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.		
Communications		
ENGL 121	Composition I*	3
If your specific degree program requires a communications elective, select one from the following:		
BUS 150	Business Communications*	3
or COMS 120	Interpersonal Communication	
or COMS 121	Public Speaking	
or COMS 125	Personal Communication	
or COMS 180	Intercultural Communication	
or ENGL 122	Composition II*	
or ENGL 123	Technical Writing I*	
or ENGL 140	Writing for Interactive Media*	
Total Credit Hours:		3
Humanities, Associate of Applied Science		3
These courses fulfill the humanities requirements for the Associate of Applied Science (AAS) degree.		
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 236	British Literature to 1800*	3
ENGL 237	British Literature after 1800*	3
ENGL 246	American Literature I*	3

ENGL 247	American Literature II*	3
ENGL 254	Masterpieces of the Cinema*	3
THEA 120	Introduction to Theater	3
B. Foreign Language		
FL 182	Intermediate Japanese I*	5
FL 192	Intermediate Chinese I*	3
FL 193	Intermediate Chinese II*	3
FL 220	Intermediate German I*	3
FL 221	Intermediate German II*	3
FL 230	Intermediate Spanish I*	3
FL 231	Intermediate Spanish II*	3
FL 240	Intermediate French I*	3
FL 241	Intermediate French II*	3
C. History		
HIST 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: Traditional	3
HIST 152	World History: Modern	3
HIST 160	Modern Russian History	3
HIST 162	Modern Latin America	3
HIST 260	Women in U.S. History	3
D. Humanities		
ARTH 180	Art History: Ancient to Medieval	3
ARTH 182	Art History: Renaissance to Modern	3
ARTH 184	Art History: Twentieth Century	3
ARTH 188	History of Photography	3
ARTH 200	Women, Art, and Society	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 Credit Hours		3

Social Science and Economics, Associate of Applied Science 3

These courses fulfill the social science and economics requirements for the Associate of Applied Science (AAS) degree.

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
POLS 220	Introduction to Public Policy	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
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Total Credit Hours 3

Science and/or Mathematics, Associate of Applied Science 3

These courses fulfill the science and/or mathematics requirements for the Associate of Applied Science (AAS) degree.

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

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 125	General Botany	5
BIOL 127	General Zoology	5
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
EVRN 124	Oceanus: Essentials of Oceanography	3
EVRN 130	Environmental Science	3
EVRN 131	Environmental Science Lab*	1
EVRN 134	Principles of Sustainability	3
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 Credit Hours		3

3 additional credit hours to be selected from one of the above categories	3
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Total Hours:	15
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*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 60 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 total program hours necessary to complete the associate of arts degree include 30 credit hours of general education requirements plus a minimum of 30 additional credit hours of electives. Please refer to your specific degree for a list of all requirements.

General Education Area		Credit Hours
Communications, Associate of Arts		9
These courses fulfill the communications requirements for the Associate of Arts (AA) degree.		
A. English Composition		
ENGL 121	Composition I*	3
ENGL 122	Composition II*	3
B. Oral Communication		
Select one of the following:		
COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	
or COMS 125	Personal Communication	
or COMS 180	Intercultural Communication	
Total Credit Hours		9
Humanities, Associate of Arts		6
These courses fulfill the humanities requirements for the Associate of Arts (AA) degree. 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 the Cultural Diversity Requirement)	3
ENGL 217	Literature by Women* (Also meets the Cultural Diversity Requirement)	3
ENGL 227	Introduction to Poetry*	3
ENGL 230	Introduction to Fiction*	3
ENGL 235	Drama as Literature*	3
ENGL 236	British Literature to 1800*	3
ENGL 237	British Literature after 1800*	3
ENGL 246	American Literature I*	3
ENGL 247	American Literature II*	3
ENGL 254	Masterpieces of the Cinema*	3
THEA 120	Introduction to Theater	3
B. Foreign Language		
FL 182	Intermediate Japanese I*	5
FL 192	Intermediate Chinese I*	3
FL 193	Intermediate Chinese II*	3
FL 220	Intermediate German I*	3
FL 221	Intermediate German II*	3
FL 230	Intermediate Spanish I*	3
FL 231	Intermediate Spanish II*	3
FL 240	Intermediate French I*	3
FL 241	Intermediate French II*	3
C. History		
HIST 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 the Cultural Diversity Requirement)	3
HIST 137	African American Studies (Also meets the Cultural Diversity Requirement)	3

HIST 140	U.S. History to 1877	3
HIST 141	U.S. History Since 1877	3
HIST 151	World History: Traditional (Also meets the Cultural Diversity Requirement)	3
HIST 152	World History: Modern (Also meets the Cultural Diversity Requirement)	3
HIST 160	Modern Russian History (Also meets the Cultural Diversity Requirement)	3
HIST 162	Modern Latin America (Also meets the Cultural Diversity Requirement)	3
HIST 260	Women in U.S. History (Also meets the Cultural Diversity Requirement)	3
D. Humanities		
ARTH 180	Art History: Ancient to Medieval (Also meets the 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
ARTH 200	Women, Art, and Society (Also meets the Cultural Diversity Requirement)	3
HUM 122	Introduction to Humanities	3
HUM 145	Introduction to World Humanities I (Also meets the Cultural Diversity Requirement)	3
HUM 146	Introduction to World Humanities II (Also meets the Cultural Diversity Requirement)	3
HUM 155	Classical Mythology	3
HUM 156	Contemporary Approaches to World Mythology (Also meets the Cultural Diversity Requirement)	3
HUM 165	Introduction to Chinese Culture	3
HUM 167	Introduction to Japanese Culture (Also meets the 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 the Cultural Diversity Requirement)	3
MUS 128	History of Rock and Roll Music (Also meets the Cultural Diversity Requirement)	3
REL 120	Exploring World Religions (Also meets the Cultural Diversity Requirement)	3
REL 125	Religions of the East (Also meets the Cultural Diversity Requirement)	3
REL 126	Religions of the West (Also meets the 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 Credit Hours		6

Social Science and Economics, Associate of Arts 6

These courses fulfill the social science/economics requirements for the Associate of Arts (AA) degree.

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 the 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 the Cultural Diversity Requirement)	3
ANTH 165	Linguistic Anthropology (Also meets the 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 the Cultural Diversity Requirement)	3
POLS 135	International Relations (Also meets the Cultural Diversity Requirement)	3
POLS 175	Environmental Policy and Law	3
POLS 192	Political Theory (Also meets the Cultural Diversity Requirement)	3
POLS 220	Introduction to Public Policy	3
D. Psychology		
PSYC 121	Applied Psychology	3
PSYC 130	Introduction to Psychology	3
E. Sociology		
SOC 122	Introduction to Sociology (Also meets the Cultural Diversity Requirement)	3
SOC 125	Social Problems (Also meets the Cultural Diversity Requirement)	3
SOC 131	Sociology of Families	3
F. Gender and Ethnic Studies		
WGS 201	Global Women's Studies (Also meets the Cultural Diversity Requirement)	3
Total Credit Hours		6

Science and Mathematics, Associate of Arts 9

These courses fulfill the science and mathematics requirements for the Associate of Arts (AA) degree.

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 125	General Botany	5
BIOL 127	General Zoology	5
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
EVRN 124	Oceanus: Essentials of Oceanography	3
EVRN 130	Environmental Science	3
EVRN 131	Environmental Science Lab*	1
EVRN 134	Principles of Sustainability	3

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 the 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 Credit Hours		9

Cultural Diversity, Associate of Arts

1 course

These courses fulfill the cultural diversity requirements for the Associate of Arts (AA) degree.

Cultural Diversity Courses

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 Art	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 Medieval (Also meets a General Education Requirement)	3
ARTH 186	Art History: Introduction to Asian Art	3
ARTH 200	Women, Art, and Society (Also meets a General Education Requirement)	3
BIOL 132	Introduction to Public Health	3
BUS 235	Introduction to International Business	3
CJ 223	The World of Crime*	3
COMS 180	Intercultural Communication (Also meets a General Education Requirement)	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 232	Children's Literature*	3
ENGL 244	Literature of American Popular Music*	3
FMS 100	Intro to Film	3
FMS 200	Intro to Filmmaking and Media Aesthetics	3
GEOS 145	World Regional Geography (Also meets a 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: Traditional (Also meets General Education Requirement)	3
HIST 152	World History: Modern (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
HIST 260	Women in U.S. History (Also meets a General Education Requirement)	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 (Also meets a General Education Requirement)	3
HUM 167	Introduction to Japanese Culture (Also meets a General Education Requirement)	3
JOUR 220	International Media	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
PHIL 177	Feminist Theory	3
PHOT 200	Foundations in Photography	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
SOC 270	Men and Masculinities	3
WGS 201	Global Women's Studies (Also meets a 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 60 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 total program hours necessary to complete the associate of general studies degree include 30 credit hours of general education requirements plus a minimum of 30 additional credit hours of electives. Please refer to your specific degree for a list of all requirements.

General Education Area

The Arts, Associate of General Studies

Credit Hours

3

These courses fulfill the arts requirements for the Associate of General Studies (AGS) degree.

Select one course from the following list.

The Arts

ARTH 180	Art History: Ancient to Medieval	3
ARTH 182	Art History: Renaissance to Modern	3
ARTH 184	Art History: Twentieth Century	3
ARTH 188	History of Photography	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 Credit Hours		3

Communication Skills, Associate of General Studies 6

These courses fulfill the communication skills requirements for the Associate of General Studies (AGS) degree.

One course from each of the following categories counts toward the six required hours.

Writing

ENGL 121	Composition I*	3
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Speaking

COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	
or COMS 125	Personal Communication	
or COMS 180	Intercultural Communication	

Total Credit Hours 6

Culture and Ethics, Associate of General Studies 6

These courses fulfill the culture and ethics requirements for the Associate of General Studies (AGS) degree.

One course from each of the following categories counts toward the six required hours.

Historical Perspective

ENGL 130	Introduction to Literature*	3
ENGL 230	Introduction to Fiction*	3
ENGL 235	Drama as Literature*	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: Traditional	3
HIST 152	World History: Modern	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 254	Masterpieces of the Cinema*	3
FL 182	Intermediate Japanese I*	5
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
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
POLS 220	Introduction to Public Policy	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 Credit Hours		6

Mathematics, Associate of General Studies 3

These courses fulfill the math requirements for the Associate of General Studies (AGS) degree.

Select one course from the following list.

Mathematics

MATH 120	Business Mathematics*	3
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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 Credit Hours		3

Modes of Inquiry, Associate of General Studies 6

These courses fulfill the modes of inquiry requirements for the Associate of General Studies (AGS) degree.

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 125	General Botany	5
BIOL 127	General Zoology	5
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
EVRN 124	Oceanus: Essentials of Oceanography	3
EVRN 130	Environmental Science	3
EVRN 131	Environmental Science Lab*	1
EVRN 134	Principles of Sustainability	3
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 Credit Hours		6

Computer Skills, Associate of General Studies 3

These courses fulfill the computer skills requirements for the Associate of General Studies (AGS) degree.

Select one course from the following list.

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 CDTF course

LIBR 125 Introduction to Library Research 1

or MATH 181 Statistics*

Total Credit 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.

Select one course from the following list.

Global Issues/Diversity

ANTH 125 Cultural Anthropology 3

ANTH 130 World Cultures 3

ANTH 134 Native Americans 3

ARTH 186 Art History: Introduction to Asian Art 3

ARTH 200 Women, Art, and Society 3

BUS 235 Introduction to International Business 3

CJ 127 Criminology 3

COMS 180 Intercultural Communication 3

ENGL 217 Literature by Women* 3

EVRN 130 Environmental Science 3

EVRN 131 Environmental Science Lab* 1

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 165 Elementary Chinese I 5

FL 166	Elementary Chinese II*	5
FL 170	Elementary Japanese I	5
FL 171	Elementary Japanese II*	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: Traditional	3
HIST 152	World History: Modern	3
HIST 160	Modern Russian History	3
HIST 162	Modern Latin America	3
HIST 260	Women in U.S. History	3
HUM 137	Introduction to Russian Culture	3
HUM 145	Introduction to World Humanities I	3
HUM 146	Introduction to World Humanities II	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
Total Credit Hours		3

Total Hours:	30
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*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 60 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 total program hours necessary to complete the associate of science degree include 33 credit hours of general education requirements plus a minimum of 27 additional credit hours of electives. Please refer to your specific degree for a list of all requirements.

General Education Area

Credit Hours

Communications, Associate of Science

9

These courses fulfill the communication skills requirements for the Associate of Science (AS) degree.

A. Communications

ENGL 121	Composition I*	3
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B. Communications Elective

Select two from the following:		6
BUS 150	Business Communications*	
COMS 120	Interpersonal Communication	
COMS 121	Public Speaking	
COMS 125	Personal Communication	
COMS 180	Intercultural Communication (Also meets the Cultural Diversity Requirement)	
ENGL 122	Composition II*	
ENGL 123	Technical Writing I*	
ENGL 140	Writing for Interactive Media*	
Total Credit Hours		9

Humanities, Associate of Science 6

These courses fulfill the humanities requirements for the Associate of Science (AS) degree.

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 the Cultural Diversity Requirement)	3
ENGL 217	Literature by Women* (Also meets the Cultural Diversity Requirement)	3
ENGL 227	Introduction to Poetry*	3
ENGL 230	Introduction to Fiction*	3
ENGL 235	Drama as Literature*	3
ENGL 236	British Literature to 1800*	3
ENGL 237	British Literature after 1800*	3
ENGL 246	American Literature I*	3
ENGL 247	American Literature II*	3
ENGL 254	Masterpieces of the Cinema*	3
THEA 120	Introduction to Theater	3

B. Foreign Language

FL 182	Intermediate Japanese I*	5
FL 192	Intermediate Chinese I*	3
FL 193	Intermediate Chinese II*	3
FL 220	Intermediate German I*	3
FL 221	Intermediate German II*	3
FL 230	Intermediate Spanish I*	3
FL 231	Intermediate Spanish II*	3
FL 240	Intermediate French I*	3
FL 241	Intermediate French II*	3

C. History

HIST 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 the Cultural Diversity Requirement)	3
HIST 137	African American Studies (Also meets the Cultural Diversity Requirement)	3
HIST 140	U.S. History to 1877	3
HIST 141	U.S. History Since 1877	3
HIST 151	World History: Traditional (Also meets the Cultural Diversity Requirement)	3
HIST 152	World History: Modern (Also meets the Cultural Diversity Requirement)	3
HIST 160	Modern Russian History (Also meets the Cultural Diversity Requirement)	3
HIST 162	Modern Latin America (Also meets the Cultural Diversity Requirement)	3
HIST 260	Women in U.S. History (Also meets the Cultural Diversity Requirement)	3

D. Humanities

ARTH 180	Art History: Ancient to Medieval (Also meets the 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
ARTH 200	Women, Art, and Society (Also meets the Cultural Diversity Requirement)	3
HUM 122	Introduction to Humanities	3
HUM 145	Introduction to World Humanities I (Also meets the Cultural Diversity Requirement)	3
HUM 146	Introduction to World Humanities II (Also meets the 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 the 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 the Cultural Diversity Requirement)	3
MUS 128	History of Rock and Roll Music (Also meets the Cultural Diversity Requirement)	3
REL 120	Exploring World Religions (Also meets the Cultural Diversity Requirement)	3
REL 125	Religions of the East (Also meets the Cultural Diversity Requirement)	3
REL 126	Religions of the West (Also meets the 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 Credit Hours		6

Social Science and Economics, Associate of Science 6

These courses fulfill the social science/economics requirements for the Associate of Science (AS) degree.

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

A. Anthropology

ANTH 125	Cultural Anthropology (Also meets the Cultural Diversity Requirement)	3
ANTH 126	Physical Anthropology	3
ANTH 130	World Cultures (Also meets the Cultural Diversity Requirement)	3
ANTH 142	World Prehistory (Also meets the Cultural Diversity Requirement)	3
ANTH 165	Linguistic Anthropology (Also meets the 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 the Cultural Diversity Requirement)	3
POLS 135	International Relations (Also meets the Cultural Diversity Requirement)	3
POLS 175	Environmental Policy and Law	3
POLS 192	Political Theory (Also meets the Cultural Diversity Requirement)	3
POLS 220	Introduction to Public Policy	3

D. Psychology

PSYC 121	Applied Psychology	3
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PSYC 130	Introduction to Psychology	3
E. Sociology		
SOC 122	Introduction to Sociology (Also meets the Cultural Diversity Requirement)	3
SOC 125	Social Problems (Also meets the Cultural Diversity Requirement)	3
SOC 131	Sociology of Families	3
F. Gender and Ethnic Studies		
WGS 201	Global Women's Studies (Also meets the Cultural Diversity Requirement)	3
Total Credit Hours		6
Science and Mathematics, Associate of Science		12
These courses fulfill the science and mathematics requirements for the Associate of Science (AS) degree.		
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
B. Science		
(Life Science)		
BIOL 121	Introductory Biology for Non-Majors	4
BIOL 125	General Botany	5
BIOL 127	General Zoology	5
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
EVRN 124	Oceanus: Essentials of Oceanography	3
EVRN 130	Environmental Science	3
EVRN 131	Environmental Science Lab*	1
EVRN 134	Principles of Sustainability	3
GEOS 130	General Geology	5
GEOS 140	Physical Geography	3
GEOS 141	Physical Geography Lab*	2

GEOS 145	World Regional Geography (Also meets the 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 Credit Hours		12

Cultural Diversity, Associate of Science

1 course

These courses fulfill the cultural diversity requirements for the Associate of Science (AS) degree.

Cultural Diversity Courses

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 Art	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 Medieval	3
ARTH 186	Art History: Introduction to Asian Art	3
ARTH 200	Women, Art, and Society (Also meets a General Education Requirement)	3
BIOL 132	Introduction to Public Health	3
BUS 235	Introduction to International Business	3
CJ 223	The World of Crime*	3
COMS 180	Intercultural Communication (Also meets a General Education Requirement)	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 232	Children's Literature*	3
ENGL 244	Literature of American Popular Music*	3
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: Traditional (Also meets a General Education Requirement)	3
HIST 152	World History: Modern (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
HIST 260	Women in U.S. History (Also meets a General Education Requirement)	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
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
PHIL 177	Feminist Theory	3
PHOT 200	Foundations in Photography	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
SOC 270	Men and Masculinities	3
WGS 201	Global Women's Studies	3
WGS 220	The Many Women of Islam	3

Total Hours:	33
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*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:

- Demonstrate information literacy by finding, interpreting, evaluating, and using sources.
- Apply problem-solving strategies using appropriate disciplinary or cross-disciplinary methods.
- Communicate effectively in a variety of contexts.
- Demonstrate knowledge of the broad diversity of the human experience and the individual's connection to the global society.
- Process numeric, symbolic, and graphic information to draw informed conclusions.
- Comprehend, analyze, and synthesize written, visual and aural material.

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. 181)

American Sign Language/Deaf Studies

American Sign Language Studies Certificate (p. 182)

Animation

Animation-Entertainment and Game Art Design, AAS (p. 183)

Automation Engineer Technology

Automation Engineer Technology, AAS (p. 184)

Automotive Technology

Automotive Technology, AAS (p. 185)

Automotive Technology Maintenance and Light Repair Certificate (p. 186)

Automotive Technology Repair Certificate (p. 187)

Business Administration

Business Administration, AAS (p. 188)

Business Office Technology

Administrative Assistant, AAS (p. 189)

Administrative Assistant Certificate (p. 191)

Legal Administrative Assistant Certificate (p. 192)

Medical Office Specialist Certificate (p. 192)

Computer Information Systems

Associate of Science with Emphasis in Information Systems Technology (p. 194)

Computer Information Systems, AAS (p. 195)

Computer Information Systems - Software Developer Certificate (p. 197)

Computer Support Specialist, AAS (p. 199)

Computer Support Specialist A+ Certificate (p. 197)

Computer Support Specialist Networking+/Security+ Certificate (p. 198)

Data Analytics Certificate (p. 200)

Desktop Publishing Applications Specialist Certificate (p. 200)

Personal Computer Applications Specialist Certificate (p. 201)

Construction Management

Construction Management Certificate (p. 203)

Construction Management Technology, AAS (p. 204)

Cosmetology

Cosmetology, AAS (p. 207)

Cosmetology Certificate (p. 206)

Cosmetology Instructor Training Certificate (p. 206)

Esthetics, AAS (p. 208)

Esthetics Certificate (p. 207)

Nail Technology Certificate (p. 209)

Criminal Justice

Associate of Arts with Emphasis in Criminal Justice (p. 209)

Police Academy Certificate (p. 211)

Dental Hygiene

Dental Hygiene, AAS (p. 211)

Drafting Technology

Computer-Aided Drafting and Design Technology, AAS (p. 212)

Early Childhood Education

Associate of Science with Emphasis in Early Childhood Education (p. 214)

Electrical Technology

Electrical Technology, AAS (p. 215)

Electrical Technology Certificate (p. 217)

Electronics Technology

Electronics Technology, AAS (p. 218)

Electronics Technology Certificate (p. 217)

Emergency Medical Science (EMS)

Emergency Medical Science, AAS (p. 219)

Emergency Medical Technician Certificate (p. 221)

Mobile Intensive Care Technician Certificate (p. 222)

Fashion Merchandising and Design

Apparel Design and Technology, AAS (p. 222)

Fashion Merchandising and Marketing, AAS (p. 224)

Visual Merchandising Certificate (p. 224)

Fire Services Administration

Fire Science, AAS (p. 227)

Fire Administration Certificate (p. 226)

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Game

Game Development, AAS (p. 228)

General Sciences

General Sciences, AS (p. 230)

General Studies

General Studies, AGS (p. 231)

Graphic Design

Graphic Design, AAS (p. 232)

Health Care Interpreting

Health Care Interpreting Certificate (p. 234)

Health Information Systems

Associate of Science with Emphasis in Health Information Systems (p. 235)

Health Information Systems Implementation and Support Specialist Certificate (p. 237)

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Health Occupations

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Home Health Aide Certificate (p. 240)

Heating, Ventilation and Air Conditioning Technology

Heating, Ventilation, and Air Conditioning (HVAC) Technology AAS (p. 240)

Heating, Ventilation, and Air Conditioning Technology Certificate (p. 242)

Horticulture

Horticultural Sciences, AAS (p. 243)

Horticultural Sciences Certificate (p. 242)

Hospitality Management

Chef Apprenticeship, AAS (p. 245)

Dietary Manager Certificate (p. 246)

Food and Beverage Management, AAS (p. 247)

Hotel & Lodging Management, AAS (p. 249)

Pastry/Baking Certificate (p. 250)

Information Technology

Cybersecurity Certificate (p. 251)

Information Technology - Networking, AAS (p. 251)

Interior Design

- Floral Design Certificate (p. 253)
- Interior Design, AAS (p. 254)
- Interior Design Assistant Certificate (p. 253)
- Kitchen & Bath Design Certificate (p. 256)
- Interior Staging Certificate (p. 255)

Legal Interpreting

- Legal Interpreting Certificate (p. 257)

Legal Studies

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- Paralegal Certificate (p. 259)

Liberal Arts

- Liberal Arts, AA (p. 260)

Marketing and Management

- Marketing Management, AAS (p. 262)
- Digital Marketing Certificate (p. 261)
- Sales and Customer Relations Certificate (p. 263)

Medical Information and Revenue Management

- Medical Coding Specialist Certificate (p. 264)

Metal Fabrication/Welding

- Metal Fabrication/Welding Technology, AAS (p. 265)
- Metal Fabrication/Welding Certificate (p. 267)

Neurodiagnostic Technology

- Neurodiagnostic Technology, AAS (p. 268)

Nursing

- Nursing - Registered Nurse, AAS (p. 269)
- Practical Nursing Certificate (p. 270)

Plumbing Technology

- Plumbing Technology Certificate (p. 271)

Railroad Industrial Technology

- Railroad Structural Welding Certificate (p. 272)
- Railroad Track Welding Certificate (p. 273)
- Railroad Mechanical Welding Certificate (p. 272)

Railroad Operations

- Railroad Operations, AAS (p. 273)
- Railroad Conductor Certificate (p. 274)

Railroad Freight Car Certificate (p. 274)

Railroad Signal Certificate (p. 275)

Recording Arts

Recording Arts Certificate (p. 275)

Respiratory Care

Respiratory Care, AAS (p. 276)

Sustainable Agriculture

Sustainable Agriculture Certificate (p. 277)

Web Technologies

Web Development and Digital Media, AAS (p. 279)

Digital Media Certificate (p. 278)

Web Development Certificate (p. 280)

Web Technologies Certificate (p. 281)

Accounting

Accounting, AAS (p. 181)

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 (aking06@jccc.edu) or a JCCC counselor.

(Major Code 2400; State CIP Code 52.0302)

- Accounting (<http://www.jccc.edu/academics/credit/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, BLAW, 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. 158)

Fourth Semester

Business Electives		6
NOTE: Business electives are any courses with the BUS, BLAW, ENTR, ECON or MKT prefix.		
ACCT 278	Accounting Internship*	1
ACCT 285	Accounting Capstone*	3
BLAW 261	Business Law I*	3
Social Science and/or Economics Elective ^		3
Total Hours		16

^ See all AAS general education electives (p. 158)

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

American Sign Language/Deaf Studies

American Sign Language Studies Certificate (p. 182)

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 3240; State CIP Code 16.1603)

ASL/Deaf Studies (<https://www.jccc.edu/academics/credit/foreign-language/asl-deaf-studies/>)

First Semester

ASL 120	Elementary American Sign Language I	3
ASL 145	Introduction to the Deaf Community*	3
Total Hours		6

Second Semester

ASL 121	Elementary American Sign Language II*	3
Total Hours		3

Third Semester

ASL 122	Intermediate American Sign Language I*	3
ASL 147	Fingerspelling I*	2
Total Hours		5

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

Total Program Hours: 23

Animation

Animation-Entertainment and Game Art Design, AAS (p. 183)

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. 158)

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. 158)

Total Program Hours: 64-65

Automation Engineer Technology

Automation Engineer Technology, AAS (p. 184)

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)

Automation Engineer Technology (<http://www.jccc.edu/academics/credit/automation-engineer-technology/>)

Associate of Applied Science Degree

Fall Semester

Technical Electives		3
NOTE: Technical electives are any courses with AUTO, CET, DRAF, ELEC, ELTE, HVAC, INDT or MFAB prefix		
AET 110	Industrial Maintenance	3
AET 122	Industrial Code	3
ELTE 110	AC/DC Circuits*	4
MATH 130	Technical Mathematics I* (or higher)	3
Total Hours		16

Spring Semester

AET 120	Industrial Fluid Power	3
AET 185	LAN Cabling and Installation	3

COMS 155	Workplace Skills	1
INDT 125	Industrial Safety/OSHA 30	3
MFAB 124	Introduction to Welding	3
MATH 131	Technical Mathematics II* (or higher)	3
Total Hours		16

Fall Semester

AET 140	Actuator and Sensor Systems*	3
AET 160	Programmable Logic Controllers I*	3
ELTE 225	Industrial Wiring I*	3
ENGL 121	Composition I*	3
Humanities/Art Elective^		3
Total Hours		15

^ See all AAS general education electives (p. 158)

Spring Semester

Technical Electives		3
NOTE: Technical electives are any courses with AUTO, CET, DRAF, ELEC, ELTE, HVAC, INDT or MFAB prefix.		
AET 240	Industrial Robotics*	3
AET 260	Programmable Logic Controllers II*	3
ELTE 250	Industrial Wiring II*	3
Social Science and/or Economics Elective		3
Total Hours		15

^ See all AAS general education electives (p. 158)

Total Program Hours: 62

Automotive Technology

Automotive Technology, AAS (p. 185)

Automotive Technology Maintenance and Light Repair Certificate (p. 186)

Automotive Technology Repair Certificate (p. 187)

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/credit/automotive-technology/>)

Associate of Applied Science Degree

First Semester

AUTO 114	Introduction to Automotive Practices	3-4
or AUTO 125	Introduction to Automotive Shop Practices	
AUTO 129	Brakes I*	3
AUTO 131	Brakes II*	1

AUTO 156	Electrical I*	3
ENGL 121	Composition I*	3
Humanities Elective ^		3
Total Hours		16-17

^ See all AAS general education electives (p. 158)

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
INDT 125	Industrial Safety/OSHA 30	3
Total Hours		16

Third Semester

AUTO 205	Engine Performance II*	3
AUTO 208	Electrical III*	3
AUTO 209	Manual Drive Train and Axles*	4
MATH 120	Business Mathematics* (or higher)	3
Social Science or Economic Elective ^		3
Total Hours		16

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

^ See all AAS general education electives (p. 158)

Fourth Semester

Technical/Related Electives (see below)		3
AUTO 201	ASE Certification Review*	1
AUTO 215	Engine Performance III*	3
AUTO 221	Heating and Air Conditioning*	4
AUTO 250	Automatic Transmissions and Transaxles*	4
ENGL 123	Technical Writing I*	3
Total Hours		18

Technical/Related Electives

AUTO 121	Small Engine Service	3
AUTO 130	Diesel Fundamentals*	2
AUTO 235	Hybrid & Alternative Fuels Vehicles Repair & Maintenance*	3
AUTO 271	Automotive Technology Internship*	3
AUTO 291	Independent Study*	1-7

Total Program Hours: 66-67

Automotive Technology Maintenance and Light Repair 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 and steering, brakes, electrical, and heating and air conditioning.

(Major Code 6740; State CIP Code 47.0604)

Automotive Technology (<http://www.jccc.edu/academics/credit/automotive-technology/>)

First Semester

AUTO 114	Introduction to Automotive Practices	3-4
or AUTO 125	Introduction to Automotive Shop Practices	
AUTO 129	Brakes I*	3
AUTO 131	Brakes II*	1
AUTO 156	Electrical I*	3
ENGL 121	Composition I*	3
Total Hours		13-14

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: 26-27

Automotive Technology Repair 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 basic diagnostic and repair services in the automotive industry. These technicians perform the repair work being done in repair shops across the nation. Classes included will increase an individual's technical knowledge of bumper-to-bumper maintenance, diagnostics and repairs in the critical areas of engine systems, automatic transmission/transaxle, manual drive train and axles, engine performance, suspension & steering, brakes, electrical, and heating & air conditioning.

(Major Code 3060; State CIP Code 47.0604)

Automotive Technology (<http://www.jccc.edu/academics/credit/automotive-technology/>)

First Semester

AUTO 129	Brakes I*	3
AUTO 114	Introduction to Automotive Practices	3-4
or AUTO 125	Introduction to Automotive Shop Practices	
AUTO 131	Brakes II*	1
AUTO 156	Electrical I*	3
ENGL 121	Composition I*	3
Total Hours		13-14

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

Third Semester

AUTO 205	Engine Performance II*	3
AUTO 208	Electrical III*	3
AUTO 209	Manual Drive Train and Axles*	4
MATH 120	Business Mathematics*	3
Total Hours		13

Fourth Semester

AUTO 201	ASE Certification Review*	1
AUTO 215	Engine Performance III*	3
AUTO 221	Heating and Air Conditioning*	4
AUTO 250	Automatic Transmissions and Transaxles*	4
Total Hours		12

Total Program Hours: 51-52

Business Administration

Business Administration, AAS (p. 188)

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/credit/business-administration/>)

Associate of Applied Science Degree

First Semester

CIS/CS/CPCA/CDTP Electives (not including CPCA 105 or CPCA 106)		4
Note: CPCA 121 is recommended		
BUS 121	Introduction to Business	3
BUS 225	Human Relations	3
ENGL 121	Composition I*	3
MATH 120	Business Mathematics* (or higher)	3
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. 158)

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
BLAW 261	Business Law I*	3
ECON 231	Principles of Microeconomics	3
MKT 230	Marketing	3
PHIL 140	Business Ethics	3
Total Hours		18

Fourth Semester

ACCT 222	Managerial Accounting*	3
BUS 123	Personal Finance	3
or BUS 215	Savings and Investments	
BUS 243	Human Resource Management	3
or BUS 235	Introduction to International Business	
BLAW 263	Business Law II*	3
EVRN 130	Environmental Science	3
Total Hours		15

Total Program Hours: 64

Business Office Technology

Administrative Assistant, AAS (p. 189)

Administrative Assistant Certificate (p. 191)

Legal Administrative Assistant Certificate (p. 192)

Medical Office Specialist Certificate (p. 192)

Administrative Assistant, AAS

This degree program prepares students for administrative professional positions in business offices. Emphasis is on the development of communication, decision-making, and problem-solving skills; and the use of current web tools and software application programs. Additional studies in records management, human resources, accounting, social media marketing, and general education are included as well as a capstone course and office internship. The program provides training for students in entry-level positions as well as for those who are upgrading existing skills.

(Major Code 2680; State CIP Code 52.0401)

- Business Office Technology (<http://www.jccc.edu/academics/credit/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 101	Keyboarding	0-1
Total Hours		0-1

First Semester (Medical Option)

BOT 103	Business English and Proofreading	3
BOT 105	Business Document Preparation and Management*	3
BOT 130	Business Office Procedures	3
CPCA 128	PC Applications: MS Office	3
HC 130	Medical Terminology for Healthcare Professions	3
Total Hours		15

First Semester (Legal Option)

BOT 103	Business English and Proofreading	3
BOT 105	Business Document Preparation and Management*	3
BOT 130	Business Office Procedures	3
CPCA 128	PC Applications: MS Office	3
LAW 121	Introduction to Law	3
Total Hours		15

First Semester (Administrative Option)

BOT 103	Business English and Proofreading	3
BOT 105	Business Document Preparation and Management*	3
BOT 130	Business Office Procedures	3
BUS 121	Introduction to Business	3
CPCA 128	PC Applications: MS Office	3
Total Hours		15

Second Semester (Medical Option)

BOT 141	Electronic Health Records Applications	3
BOT 170	Introduction to Medical Coding and Billing*	3
BOT 205	Workplace Professionalism	1
CPCA 118	Groupware: Outlook*	1
CPCA 121	Introduction to Project Management*	1
CPCA 228	PC Applications II: MS Office*	3
MIRM 142	Legal and Ethical Issues in Healthcare	3
Total Hours		15

Second Semester (Legal Option)

BOT 160	Legal Document Preparation and Terminology*	3
BOT 205	Workplace Professionalism	1
CPCA 118	Groupware: Outlook*	1
CPCA 121	Introduction to Project Management*	1
CPCA 228	PC Applications II: MS Office*	3
HC 130	Medical Terminology for Healthcare Professions	3
LAW 201	Advanced Legal Technology*	3
Total Hours		15

Second Semester (Administrative Option)

BOT 205	Workplace Professionalism	1
BOT 260	Desktop Publishing for the Office*	3
BUS 140	Principles of Supervision	3
or BUS 141	Principles of Management	
BUS 225	Human Relations	3
CPCA 118	Groupware: Outlook*	1

CPCA 121	Introduction to Project Management*	1
CPCA 228	PC Applications II: MS Office*	3
Total Hours		15

Third Semester

ENGL 121	Composition I*	3
BOT 150	Records Management*	3
MKT 146	Introduction to Social Media Marketing	3
MATH 120	Business Mathematics* (or higher)	3
Humanities Elective ^		3
Total Hours		15

^ See all AAS general education electives (p. 158)

Fourth Semester

ACCT 111 or ACCT 121	Small Business Accounting Accounting I	3
BOT 265	Business Office Simulation*	3
BOT 275	Office Internship*	1
BUS 243	Human Resource Management	3
BUS 150	Business Communications*	3
Social Science and/or Economics Elective ^		3
Total Hours		16

^ See all AAS general education electives (p. 158)

Total Program Hours: 61-62

Administrative Assistant Certificate

This certificate program prepares students for administrative assistant positions in business offices. Emphasis is on the development of communication, decision-making, and problem-solving skills; and the use of current web tools and software application programs. The program provides training for students in entry-level positions as well as for those who are upgrading existing skills.

(Major Code 5320; State CIP Code 52.0401)

Business Office Technology (<http://www.jccc.edu/academics/credit/business-office-technology/>)

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 101	Keyboarding	0-1
Total Hours		0-1

First Semester

BOT 103	Business English and Proofreading	3
BOT 105	Business Document Preparation and Management*	3
BOT 130	Business Office Procedures	3
CPCA 128	PC Applications: MS Office	3
BUS 121	Introduction to Business	3
Total Hours		15

Second Semester

BOT 205	Workplace Professionalism	1
CPCA 118	Groupware: Outlook*	1
CPCA 121	Introduction to Project Management*	1
CPCA 228	PC Applications II: MS Office*	3
BOT 260	Desktop Publishing for the Office*	3
BUS 140	Principles of Supervision	3
or BUS 141	Principles of Management	
BUS 225	Human Relations	3
Total Hours		15

Total Program Hours: 30-31

Legal Administrative Assistant Certificate

This certificate program prepares students for legal office positions in law firms, courthouses, and business legal offices. Emphasis is on learning legal terminology and preparing legal documents as well as developing communication, decision-making, and problem-solving skills; and the use of current web tools and software application programs. The program provides training for students in entry-level positions as well as for those who are upgrading existing skills.

(Major Code 5050; State CIP Code 22.0301)

Bus (<http://www.jccc.edu/academics/credit/business-office-technology/>) Business Office Technology

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 101	Keyboarding	0-1
Total Hours		0-1

First Semester

BOT 103	Business English and Proofreading	3
BOT 105	Business Document Preparation and Management*	3
BOT 130	Business Office Procedures	3
CPCA 128	PC Applications: MS Office	3
LAW 121	Introduction to Law	3
Total Hours		15

Second Semester

BOT 160	Legal Document Preparation and Terminology*	3
BOT 205	Workplace Professionalism	1
CPCA 118	Groupware: Outlook*	1
CPCA 121	Introduction to Project Management*	1
CPCA 228	PC Applications II: MS Office*	3
HC 130	Medical Terminology for Healthcare Professions	3
LAW 201	Advanced Legal Technology*	3
Total Hours		15

Total Program Hours: 30-31

Medical Office Specialist Certificate

This certificate program prepares students for medical office positions in hospitals, clinics, and physician offices. Emphasis is on learning medical terminology and working with electronic health records as well as developing communication, decision-making, problem-solving skills; and the use of

current web tools and software application programs. The program provides training for students in entry-level positions as well as for those who are upgrading existing skills.

(Major Code 5310; State CIP Code 51.0710)

Business Office Technology (<http://www.jccc.edu/academics/credit/business-office-technology/>)

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 101	Keyboarding	0-1
Total Hours		0-1

First Semester

BOT 103	Business English and Proofreading	3
BOT 105	Business Document Preparation and Management*	3
BOT 130	Business Office Procedures	3
CPCA 128	PC Applications: MS Office	3
HC 130	Medical Terminology for Healthcare Professions	3
Total Hours		15

Second Semester

BOT 141	Electronic Health Records Applications	3
BOT 170	Introduction to Medical Coding and Billing*	3
BOT 205	Workplace Professionalism	1
CPCA 118	Groupware: Outlook*	1
CPCA 121	Introduction to Project Management*	1
CPCA 228	PC Applications II: MS Office*	3
MIRM 142	Legal and Ethical Issues in Healthcare	3
Total Hours		15

Total Program Hours: 30-31

Computer Information Systems

Associate of Science with Emphasis in Information Systems Technology (p. 194)

Computer Information Systems, AAS (p. 195)

Computer Information Systems - Software Developer Certificate (p. 197)

Computer Support Specialist, AAS (p. 199)

Computer Support Specialist A+ Certificate (p. 197)

Computer Support Specialist Networking+/Security+ Certificate (p. 198)

Data Analytics Certificate (p. 200)

Desktop Publishing Applications Specialist Certificate (p. 200)

Personal Computer Applications Specialist Certificate (p. 201)

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. 171).

- Programming (<http://www.jccc.edu/academics/credit/programming/>)

(Major Code 2940; State CIP Code 24.0101)

Associate of Science

First Semester

CS 134	Programming Fundamentals	4
COMS 121	Public Speaking	3
ENGL 121	Composition I*	3
MATH 171	College Algebra*	3
PSYC 130	Introduction to Psychology	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 & CHEM 125	General Chemistry I Lecture* 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. 171)

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. 171)

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. 171)

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/credit/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. 158)

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
COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	

or COMS 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. 158)

Third Semester

Full Semester Courses:

Technical 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 114	Web Scripting: JavaScript I*	2
Total Hours		16

Fourth Semester

Technical Elective (see below)		3
Note: WEB 124 is recommended, a minimum of 6 total hours is required for Technical Electives.		
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

Technical Electives

ACCT 121	Accounting I	3
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 124	Web Scripting: JavaScript II*	2

WEB 126	Technical Interface Skills*	3
WEB 128	Server Scripting: PHP with MySQL*	2

Total Program Hours: 64

Computer Information Systems-Software Developer Certificate

The Computer Information Systems - Software Developer 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/credit/software-development/>)

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 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.		
WEB 114	Web Scripting: JavaScript I*	2
Total Hours		9

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: 31

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)

Computer Support (<http://www.jccc.edu/academics/credit/computer-support/>)

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 & CPCA 110 & CPCA 123	Word Processing I: MS Word* and Spreadsheets I: MS Excel 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)

Computer Support (<http://www.jccc.edu/academics/credit/computer-support/>)

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 & CPCA 110 & CPCA 123	Word Processing I: MS Word* and Spreadsheets I: MS Excel 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

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 & CPCA 110 & CPCA 123	Word Processing I: MS Word* and Spreadsheets I: MS Excel 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. 158)

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. 158)

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)

Data Analytics (<http://www.jccc.edu/academics/credit/data-analytics/>)

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 Desktop Publishing Chair or the Dean of the Arts & Design, Humanities and Social Sciences division.

Suggested/Sample Course Sequence for One Year Completion

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)

Desktop Publishing (<http://www.jccc.edu/academics/credit/desktop-publishing/>)

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	0-1
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 110	Spreadsheets I: MS Excel*	1
CPCA 111	Spreadsheets II: MS Excel*	1
CPCA 123	E-Presentation: MS PowerPoint*	1
CPCA 125	Word Processing II: MS Word*	1
CPCA 141	Internet I*	1
CPCA 151	Internet II*	1
CPCA 161	Introduction to Web Pages using HTML*	1

Total Program Hours: 14-15

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/credit/personal-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
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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
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Third Five Week Session

Continuation of CPCA 115-Database II: MS Access

CPCA Elective (see list below)		1
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Total Hours		5
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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, 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 Access		
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, 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 Technology, AAS (p. 204)

Construction Management Certificate (p. 203)

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/credit/construction-management/>)

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 or ACCT 121	Small Business Accounting Accounting I	3
CET 129	Construction Management	3
CET 227	Construction Cost Estimating*	3
COMS 155	Workplace Skills	1
INDT 150	Construction Safety/OSHA 30	3
Total Hours		15

Management Electives

BUS 141	Principles of Management	3
BUS 145	Small Business Management	3
BUS 243	Human Resource Management	3
BLAW 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 for general contractors and subcontractors in the commercial construction industry. 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/credit/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 or ACCT 121	Small Business Accounting Accounting I	3
CET 123	Building Codes	3
CET 129	Construction Management	3
CET 205	Advanced Construction Methods*	3
COMS 155	Workplace Skills	1

Social Science and/or Economics Elective ^	3
Total Hours	16

^ See all AAS general education electives (p. 158)

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. 158)

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
BLAW 261	Business Law I*	3
CET 271	Construction Management Internship I*	3
COMS 120	Interpersonal Communication	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

Total Program Hours: 63

Cosmetology

Cosmetology, AAS (p. 207)

Cosmetology Certificate (p. 206)

Cosmetology Instructor Training Certificate (p. 206)

Esthetics, AAS (<http://catalog.jccc.edu/degreecertificates/cosmetology/esthetics-aas/>)

Esthetics Certificate (p. 207)

Nail Technology Certificate (p. 209)

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/credit/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/credit/cosmetology/>)

Required Course

CO 212	Cosmetology Instructor Training*	9
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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 complete 15 additional required credits within five years after completing the aforementioned certificate in order to receive a degree from Johnson County Community College. 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

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		15

^ See all AAS general education electives (p. 158)

Total Program Hours: 60

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/credit/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**Esthetics, 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 esthetics certificate program. A student must complete 15 additional required credits within five years after completing the aforementioned certificate in order to receive a degree from Johnson County Community College. Students must also meet JCCC admissions, residency and graduation requirements.

(Major Code 3000; State CIP Code 12.0409)

Cosmetology (<http://www.jccc.edu/academics/credit/cosmetology/>)**Professional Licensure Courses**

CO 100	Esthetics*	16
CO 101	Esthetics Clinical	1
CO 102	Intermediate Esthetics*	9
CO 103	Intermediate Esthetics Clinical*	5
CO 104	Esthetics Essentials*	3
CO 105	Esthetics Essentials Clinical*	2
CO 106	Advanced Esthetics*	7
CO 107	Advanced Esthetics Clinical*	3
Total Hours		46

General Education Requirements

ENGL 121	Composition I*	3
Communication Elective ^		3
Humanities Elective ^		3
Social Science Elective ^		3
Science and/or Math Elective ^		3
Total Hours		15

^ See all AAS general education electives (<http://catalog.jccc.edu/degree/requirements/associate-applied-science/>)

Total Program Hours: 61

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 12.0410)

Cosmetology (<http://www.jccc.edu/academics/credit/cosmetology/>)

Required Course

CO 109	Nail Technology*	16
Total Hours		16

Total Program Hours: 16

Criminal Justice

Associate of Arts with Emphasis in Criminal Justice (p. 209)

Police Academy Certificate (p. 211)

Associate of Arts with Emphasis in Criminal Justice

The Criminal 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 CJ 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 a Criminal 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. 161).

(Major Code 2990; State CIP Code 24.0101)

- Criminal Justice (<http://www.jccc.edu/academics/credit/criminal-justice/>)

Associates of Arts Degree

First Semester

ENGL 121	Composition I*	3
CJ 121	Introduction to Criminal Justice System	3
CJ 124	Criminal Justice and Corrections	3
CJ 127	Criminology	3
Humanities Elective (cannot be a philosophy course) ^		3
Total Hours		15

^ See all AA general education electives (p. 161)

Second Semester

ENGL 122	Composition II*	3
CJ 141	Criminal Law*	3
CJ 235	Community Based Corrections	3
COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	
or COMS 125	Personal Communication	
MATH 171	College Algebra* (or higher)	3
Total Hours		15

Third Semester

Criminal Justice Program Elective (see below)		3
CJ 150	Criminal Procedure	3
PSYC 130	Introduction to Psychology	3
PHIL 124	Logic and Critical Thinking	3
Science and/or Math Elective ^		3
Total Hours		15

^ See all AA general education electives (p. 161)

Fourth Semester

Criminal Justice Program Elective (see below)		5
CJ 255	Ethics and Criminal Justice	3
Science course with Lab ^		4
Social Science Elective (cannot be a psychology course) ^		3
Total Hours		15

^ See all AA general education electives (p. 161)

CJ Program Electives

CJ 122	Police Operations*	3
CJ 130	Crime Prevention	3
CJ 133	Juvenile Behavior	3
CJ 143	Crime Analysis	3
CJ 145	Fundamentals Private Security	3
CJ 148	Physical and Sexual Violence within the Family	3
CJ 154	Fundamentals of Criminal Investigation	3
CJ 170	Drugs and Crime	3
CJ 180	Correctional Casework*	3
CJ 201	Police Interrogation	3
CJ 215	Understanding Terrorism	3
CJ 221	Forensic Science and Crime Scene Investigation	3
CJ 223	The World of Crime*	3
CJ 228	Criminal Justice Communications*	2
CJ 230	Criminal Behavior*	3
CJ 275	Police Leadership*	3
CJ 285	Criminal Justice Internship*	3
CJ 292	Special Topics:	1-3

Total Program Hours: 60

NOTE: If you are certified under the Kansas Law Enforcement Training Act, you are eligible to receive assessment of prior learning credit for select courses.

Police Academy Certificate

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

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

(Major Code 4880; State CIP Code 43.0103)

Johnson County Regional Police Academy (<http://www.jccc.edu/academics/credit/police-academy/>)

Required Course

CJ 265	Advanced Police Training*	12
Total Hours		12

Total Program Hours: 12

Dental Hygiene

Dental Hygiene, AAS (p. 211)

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. The U.S. Bureau of Labor Statistics suggests the dental hygiene profession is expected to grow 20 percent from 2016 to 2026, much faster than that for all occupations. 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 find 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 79-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.

For more information about the career paths of the dental hygiene professional, see the American Dental Hygiene Association website (<http://www.adha.org/professional-roles/>).

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 225	Human Physiology*	4
BIOL 230 & BIOL 231	Microbiology* and Microbiology Lab*	5
Total Hours		24

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 138	Head and Neck Anatomy*	2
DHYG 142	Dental Radiography*	2
SOC 122	Introduction to Sociology	3
Total Hours		14

Spring Semester

DHYG 135	Dental Materials*	2
DHYG 140	Clinical Dental Hygiene II*	4
DHYG 146	Periodontics*	3
DHYG 148	Dental Health Education*	2
Total Hours		11

Summer Semester

BIOL 235	General Nutrition*	3
Humanities Elective ^		3
Total Hours		6

^ See all AAS general education electives (p. 158)

Fall Semester

DHYG 221	Clinical Dental Hygiene III*	6
DHYG 225	General and Oral Pathology*	3
DHYG 230	Dental Therapeutics*	3
Total Hours		12

Spring Semester

DHYG 240	Dental Public Health*	2
DHYG 245	Nitrous Oxide Analgesia*	1
DHYG 250	Clinical Dental Hygiene IV*	6
COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	
or COMS 125	Personal Communication	
Total Hours		12

Total Program Hours: 79

Drafting Technology

Computer-Aided Drafting and Design Technology, AAS (p. 212)

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)

Drafting Technology (<http://www.jccc.edu/academics/credit/drafting-technology/>)

Associate of Applied Science Degree

First Semester

Full Semester Course

MATH 130 or MATH 171	Technical Mathematics I* College Algebra*	3
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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
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Second Semester

Full Semester Courses

DRAF 135	Graphic Analysis*	3
DRAF 211	Engineering Design Problems*	3
ENGL 121	Composition I*	3
MATH 131 or MATH 172	Technical Mathematics II* Trigonometry*	3

First Eight Week Session

DRAF 145	Introduction to Parametric Design: Inventor*	2
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Second Eight Week Session

DRAF 245	Advanced Parametric Design: Inventor*	2
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Total Hours		16
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Third Semester

Full Semester Courses

DRAF 222	Mechanical Design and Drafting*	3
DRAF 225	Civil Drafting*	3
ENGL 123 or ENGL 122	Technical Writing I* Composition II*	3

First Eight Week Session

DRAF 143	Introduction to BIM Building Information Modeling*	2
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Second Eight Week Session

DRAF 243	Advanced BIM: Revit*	2
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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. 158)

Technical Electives

CET 105	Construction Methods	3
CET 160	Green Building Fundamentals	3
COMS 155	Workplace Skills	1
DRAF 140	Topics in CAD I:	2
DRAF 152	3D Modeling with SketchUp	2
DRAF 162	3D Printing	2
DRAF 242	Topics in CAD II*	2
DRAF 271	Drafting Internship I*	3
DRAF 272	Drafting Internship II*	3

Total Program Hours: 64

Early Childhood Education

Associate of Science with Emphasis in Early Childhood Education (p. 214)

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. 171).

(Major Code 2100; State CIP Code 24.0101)

Early Childhood Education (<http://www.jccc.edu/academics/credit/early-childhood-education/>)

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

COMS 121	Public Speaking	3
or COMS 120	Interpersonal Communication	
Note: COMS 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: EVRN 130 and EVRN 131 are recommended		
Total Hours		16

^ See all AS general education electives (p. 171)

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. 171)

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. 171)

Total Program Hours: 63

Electrical Technology

Electrical Technology, AAS (p. 215)

Electrical Technology Certificate (p. 217)

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 Certificate is a 30 credit-hour program that is completed in two semesters. Designed to give students the basic skills to gain entry-level employment as a residential or commercial electrician, the curriculum emphasizes hands-on training integrated with knowledge of theory and study of the National Electrical Code. 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. Totalling 64 credit-hours, this program prepares students to work in the electrical trade in estimating, industrial power and control, and solar photovoltaic installation.

(Major Code 2260; State CIP Code 46.0302)

- Electrical Technology (<http://www.jccc.edu/academics/credit/electrical-technology/>)

Associate of Applied Science Degree

Fall Semester

ELTE 110	AC/DC Circuits*	4
ELTE 115	Print Reading*	2
ELTE 122	National Electrical Code I*	4
ELTE 125	Residential Wiring*	4
COMS 155	Workplace Skills	1
Total Hours		15

Spring Semester

ELTE 175	Low Voltage Wiring*	3
ELTE 200	Commercial Wiring*	4
ELTE 222	National Electrical Code II*	4
ELTE 223	Electrical Certification Review*	1
INDT 125	Industrial Safety/OSHA 30	3
Total Hours		15

Note: Students are eligible for the Electrical Technology Certificate upon completion of the first two semesters.

Summer Semester

ELTE 150	Solar Electric Systems*	4
Total Hours		4

Fall Semester

ELTE 202	Electrical Estimating*	3
ELTE 225	Industrial Wiring I*	3
ENGL 121	Composition I*	3
MATH 130	Technical Mathematics I* (or higher)	3
Humanities Elective		3
Total Hours		15

Spring Semester

Technical Electives		3
Note: Technical Electives are any courses with the ELTE, AET, HVAC, MFAB, INDT, AUTO, ELEC, DRAF or CET prefix.		
ELTE 250	Industrial Wiring II*	3
AET 160	Programmable Logic Controllers I*	3
MATH 131	Technical Mathematics II* (or higher)	3
Social Science and/or Economics Elective^		3
Total Hours		15

^ See all AAS general education electives (p. 158)

Total Program Hours: 64

Electrical Technology Certificate

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 Certificate is a 30 credit-hour program that is completed in two semesters. Designed to give students the basic skills to gain entry-level employment as a residential or commercial electrician, the curriculum emphasizes hands-on training integrated with knowledge of theory and study of the National Electrical Code. 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. Totalling 64 credit-hours, this program prepares students to work in the electrical trade in estimating, industrial power and control, and solar photovoltaic installation.

(Major Code 5110; State CIP Code 46.0302)

Electrical Technology (<http://www.jccc.edu/academics/credit/electrical-technology/>)

Fall Semester

ELTE 110	AC/DC Circuits*	4
ELTE 115	Print Reading*	2
ELTE 122	National Electrical Code I*	4
ELTE 125	Residential Wiring*	4
COMS 155	Workplace Skills	1
Total Hours		15

Spring Semester

ELTE 175	Low Voltage Wiring*	3
ELTE 200	Commercial Wiring*	4
ELTE 222	National Electrical Code II*	4
ELTE 223	Electrical Certification Review*	1
INDT 125	Industrial Safety/OSHA 30	3
Total Hours		15

Total Program Hours: 30

Electronics Technology

Electronics Technology, AAS (p. 218)

Electronics Technology Certificate (p. 217)

Electronics Technology Certificate

This certificate is designed to prepare the student for an exciting and well-paying career as an electronics technician by education in the basic information and skills necessary to perform the assigned duties of a technician in a safe and professional manner. Electronics technology plays a vital role in much of modern technology. Electronic technicians must be proficient at installing, maintaining and troubleshooting a wide range of digital and analog systems. Students will work with excellent facilities and some of the latest laboratory equipment. Completers of the certificate will have the opportunity for employment in one of today's most challenging and exciting career fields.

(Major Code 6220; State CIP Code 47.0101)

Electronics Technology (<http://www.jccc.edu/academics/credit/electronics-technology/>)

First Semester

ELEC 120	Introduction to Electronics	3
ELEC 125	Digital Electronics I	4
ELEC 134	DC Circuits*	4
ELEC 186	CompTIA A+ Essentials	3
Total Hours		14

Second Semester

ELEC 225	Digital Electronics II*	3
ELEC 234	AC Circuits*	4
ELEC 235	Microprocessors*	4
ELEC 236	Semiconductor Devices*	4
ELEC 240	Electronic Communication Systems*	4
Note: Enrolling in 19 credit hours will require a course overload registration override. Please contact Counseling.		
Total Hours		19

Total Program Hours: 33

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/credit/electronics-technology/>)

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. 158)

Third Semester

Technical Elective (see below)		3
ELEC 234	AC Circuits*	4
ELEC 236	Semiconductor Devices*	4
ELEC 235	Microprocessors*	4
COMS 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. 158)

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
BIOL 144	Human Anatomy and Physiology*	5
COLL 150	Job Search Skills	1
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
HC 130	Medical Terminology for Healthcare Professions	3

Total Program Hours: 64

Emergency Medical Science (EMS)

Emergency Medical Science, AAS (p. 219)

Emergency Medical Technician Certificate (p. 221)

Mobile Intensive Care Technician Certificate (p. 222)

Emergency Medical Science, AAS

Emergency Medical Science (<http://www.jccc.edu/academics/credit/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/credit/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:

ENGL 121	Composition I*	3
Humanities Elective ^		3
NOTE: PHIL 121 recommended		
Social Science/Economics Elective ^		3
NOTE: SOC 122 or PSYC 130 recommended		
SELECT ONE OF THE FOLLOWING OPTIONS:		
Option 1:		
BIOL 144	Human Anatomy and Physiology*	5
Science and/or Math Elective		3
OR		
Option 2:		
BIOL 140	Human Anatomy (and)	4
BIOL 225	Human Physiology*	4

^ See all AAS general education electives (p. 158)

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: 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/credit/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/credit/emergency-medical-science/>)

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

Fashion Merchandising and Design

Apparel Design and Technology, AAS (p. 222)

Fashion Merchandising and Marketing, AAS (p. 224)

Visual Merchandising Certificate (p. 224)

Apparel Design and Technology, AAS

Students that pursue an AAS in Apparel Design and Technology will study the creative process from concept through to production using industry standard technology solutions. The program prepares students for a rewarding career in the fashion industry by developing both the creative fashion skills and analytical problem solving abilities required for success in the industry.

JCCC's Fashion Merchandising and Design department prides itself on updating course materials and student learning outcomes to align with the current industry. Graduates of JCCC's Apparel Design and Technology AAS degree program are well prepared with skills in garment construction, technical drawing, patternmaking, draping, fit analysis and garment specifications. The Apparel Design and Technology program features the integration

of industry standard technology solutions such as Adobe Photoshop, Adobe Illustrator, Gerber Accumark and Gerber Yunique PLM throughout the curriculum.

Apparel Design and Technology graduates are challenged to create and develop a collection of original designs for the annual FM&D fashion show. Participation in the annual fashion show provides students with opportunities for industry networking while at the same time developing content for their digital portfolios. Required internships give students industry related job experiences and help to build lasting business partnerships. Travel for credit and study abroad programs provide invaluable experiential learning opportunities that students can add to their academic resume and portfolio.

Whether your goals are to obtain an entry level position or to further your education at a 4 year design school, you will be prepared for success and have a solid foundation with an Apparel Design and Technology AAS 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 Merchandising & Design (<http://www.jccc.edu/academics/credit/fashion-merchandising-design/>)

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
<hr/>	
Total Hours	3

^ See all AAS general education electives (p. 158)

Third Semester

FASH 180	Draping*	3
FASH 190	Apparel Fit, Alterations and Analysis*	3
FASH 224	History of Costume	3
FASH 270	Apparel Product Development*	3
FASH 282	Fashion Internship	1
Humanities Electives ^		3
Total Hours		16

^ See all AAS general education electives (p. 158)

Fourth Semester

FASH 127	Computer Aided Pattern Development*	4
FASH 255	Apparel Specification Technology*	3
FASH 275	Fashion Portfolio Development*	1

FASH 296	Capstone: Apparel Design and Technology*	3
FASH 282	Fashion Internship	1
Social Science and/or Economics Elective ^		3
Total Hours		15

^ See all AAS general education electives (p. 158)

Total Program Hours: 67

Visual Merchandising Certificate

Students that pursue a Visual Merchandising Certificate will study the importance of visual merchandising and its impact on the success of the retailer. Through analysis of the store layout, lighting, fixtures, props, window, and in-store displays students learn the importance of the customer retail experience. Students will learn how to create effective visual displays to promote products and increase retail sales. This certificate prepares students for an entry level position in retail visual merchandising while at the same time creates a seamless pathway into the Fashion Merchandising and Marketing AAS degree program.

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

(Major Code 7200; State CIP Code 52.1902)

Fashion Merchandising & Design (<http://www.jccc.edu/academics/credit/fashion-merchandising-design/>)

First Semester

FASH 121	Fashion Fundamentals	3
FASH 122	Aesthetics for Merchandising and Design	3
FASH 125	Visual Merchandising	3
FASH 242	Product Knowledge for Merchandisers	3
BOT 205	Workplace Professionalism	1
Total Hours		13

Second Semester

Fashion Elective (see below)		3
FASH 225	Store Planning*	3
FASH 277	Fashion Seminar: Career Options	2
FASH 282	Fashion Internship	1
MKT 121	Retail Management	3
Total Hours		12

Fashion Electives

FASH 123	Apparel Construction I	4
FASH 130	Fashion Illustration I	3
FASH 133	Computer Aided Apparel Design	3
FASH 150	Textiles	3
FASH 215	Field Study: MAGIC Trade Show*	1
FASH 224	History of Costume	3
FASH 268	Field Study: The Market Center*	3

Total Program Hours: 25

Fashion Merchandising and Marketing, AAS

Students that pursue an AAS in Fashion Merchandising and Marketing will study the whole supply chain from manufacturing and buying to promoting and selling of fashion products. The program prepares students for a rewarding career in the fashion industry by developing both the creative fashion skills and analytical problem solving abilities required for success in the industry.

The fashion merchandising and marketing related fields are rapidly changing. We have seen a significant shift in the way that people shop and buy merchandise and the industry continues to adjust to meet the needs of the consumer. JCCC's Fashion Merchandising and Design department prides

itself on updating course materials and student learning outcomes to align with the current industry. Graduates of JCCC's Fashion Merchandising and Marketing AAS degree program are well prepared with current skills in assortment planning, store layout, visual display, management, marketing, branding as well as digital skills related to social media and online retailing.

Through collaboration and teamwork, JCCC's graduates learn about the industry from highly skilled faculty with many years of experience. Required internships give students industry related job experiences and help to build lasting business partnerships. Travel for credit and study abroad programs provide invaluable experiential learning opportunities that students can add to their academic resume and portfolio.

Whether your goals are to obtain an entry level position or to further your education at a 4 year institution, you will be prepared for success and have a solid foundation with a Fashion Merchandising and Marketing AAS degree from JCCC.

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

(Major Code 3120; State CIP Code 52.1902)

Fashion Merchandising & Design (<http://www.jccc.edu/academics/credit/fashion-merchandising-design/>)

Associate of Applied Science Degree

Fall Semester

FASH 121	Fashion Fundamentals	3
FASH 122	Aesthetics for Merchandising and Design	3
FASH 125	Visual Merchandising	3
BOT 205	Workplace Professionalism	1
ENGL 121	Composition I*	3
Communications Elective ^		3
NOTE: COMS 121 is Recommended		
Total Hours		16

^ See all AAS general education electives (p. 158)

Spring Semester

FASH 150	Textiles	3
FASH 225	Store Planning*	3
FASH 282	Fashion Internship	1
MATH 120	Business Mathematics* (or higher)	3
MKT 134	Professional Selling	3
FASH 277	Fashion Seminar: Career Options	2-3
or FASH 268	Field Study: The Market Center*	
Total Hours		15-16

Summer Semester

Humanities Elective ^		3
Total Hours		3

^ See all AAS general education electives (p. 158)

Fall Semester

FASH 242	Product Knowledge for Merchandisers	3
FASH 282	Fashion Internship	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

Spring Semester

FASH 224	History of Costume	3
FASH 231	Merchandising Planning and Control*	3
FASH 235	Online Retailing	3
FASH 295	Capstone: Merchandising and Marketing*	3
MKT 202	Consumer Behavior	3
FASH 282 or FASH 215	Fashion Internship Field Study: MAGIC Trade Show*	1
Total Hours		16

Total Program Hours: 66-67

Fire Services Administration

F (<http://catalog.jccc.edu/degreecertificates/fireservicesadministration/fire-svcs-admin-aa/>) Fire Science, AAS (<http://catalog.jccc.edu/degreecertificates/fireservicesadministration/fire-science-aas/>)

Fire Administration Certificate (p. 226)

Firefighter Certificate (p. 228)

Fire Administration Certificate

The certificate in Fire Administration is offered as a step in the process of receiving an Associate in Applied Science degree in Fire Science.

All courses within the certificate provide knowledge that can be utilized immediately by the firefighter and provide their fire department with a well rounded employee. Curriculum covers each division of emergency services that will be of immediate use to the organization.

When ready and available, the student will be able to complete their AAS 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.

(Major Code 3220; State CIP Code 43.0203)

Fire Science (<http://www.jccc.edu/academics/credit/fire-science/>)

First Semester

EMS 128	EMS First Responder	5
FIRE 111	Hazardous Materials Awareness and Operations*	4
FIRE 131	Firefighter I*	5
FIRE 141	Firefighter II*	3
Total Hours		17

Second Semester

EMS 131	Emergency Medical Technician*	10
FIRE 136	Fire and Emergency Management	3
FIRE 162	Firefighting Tactics*	3
Total Hours		16

Third Semester

FIRE 152	Codes/Detection and Suppression Systems	3
FIRE 201	Leadership in the Fire Service*	3
FIRE 220	Fire Management	3
FIRE 222	Fire Science Law	3
ENGL 121	Composition I*	3

MATH 116	Intermediate Algebra* (or higher)	3
Total Hours		18

Total Program Hours: 51

Fire Science, AAS

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 employment and provide education for advancement to company-level officers.

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 the metro area.

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.

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. You may fulfill technical education requirements through the advanced standing credit process.

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

For more information, call 913-469-4405.

(Major Code 3210; State CIP Code 43.0203)

Fire Science (<http://www.jccc.edu/academics/credit/fire-science/>)

First Semester

EMS 128	EMS First Responder	5
FIRE 111	Hazardous Materials Awareness and Operations*	4
FIRE 131	Firefighter I*	5
FIRE 141	Firefighter II*	3
Total Hours		17

Second Semester

EMS 131	Emergency Medical Technician*	10
FIRE 136	Fire and Emergency Management	3
FIRE 162	Firefighting Tactics*	3
Total Hours		16

Third Semester

FIRE 152	Codes/Detection and Suppression Systems	3
FIRE 201	Leadership in the Fire Service*	3
FIRE 220	Fire Management	3
FIRE 222	Fire Science Law	3
ENGL 121	Composition I*	3
MATH 116	Intermediate Algebra* (or higher)	3
Total Hours		18

Fourth Semester

FIRE 126	Historical Foundations of the Fire Service	3
or FIRE 133	Fire Investigation	
Humanities Elective ^		3

Science and/or Math Elective ^	3
Social Science Elective ^	3
Total Hours	12

^ See all AAS general education electives (p. 161)

Total Program Hours: 63

Firefighter Certificate

The Firefighting Certificate is designed to prepare students for employment in fire services and is embedded in the Associate of Applied Science degree program in Fire Science. Upon completion of this certificate students will be prepared to take state certification exams in Hazmat Awareness, Hazmat Operations, Firefighter I, Firefighter II and Emergency Medical Technician.

(Major Code 3230; State CIP Code 43.0203)

Fire Science (<http://www.jccc.edu/academics/credit/fire-science/>)

First Semester

EMS 128	EMS First Responder	5
FIRE 111	Hazardous Materials Awareness and Operations*	4
FIRE 131	Firefighter I*	5
FIRE 141	Firefighter II*	3
Total Hours		17

Second Semester

EMS 131	Emergency Medical Technician*	10
Total Hours		10

Total Program Hours: 27

Game

Game Development, AAS (p. 228)

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/credit/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. 158)

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. 158)

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 and 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. 158)

Fourth Semester (Game Programming Option)

COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	
or COMS 125	Personal Communication	
GAME 250	Game Capstone*	4
GAME 255	Mobile Game Programming*	4
Game Elective (see list below)		3
Humanities Elective		3
NOTE: HUM 155 or HUM 156 is recommended		
Total Hours		17

^ See all AAS general education electives (p. 158)

Fourth Semester (Game Design Option)

COMS 120	Interpersonal Communication	4
or COMS 121	Public Speaking	
or COMS 125	Personal Communication	
ENGL 150	Digital Narratives*	3
GAME 238	Serious Game Design*	3
GAME 250	Game Capstone*	4
Game Elective (see list below)		3
Total Hours		17

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 (p. 230)

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 60 college-level credit hours, with 33 hours of general education requirements and 27 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. 171).

(Major Code 1010; State CIP Code 24.0101)

Associate of Science Degree

First Semester

Electives		6
ENGL 121	Composition I*	3
Communications Elective ^		3
Humanities Elective ^		3
Total Hours		15

^ See all AS general education electives (p. 171)

Second Semester

Electives		6
MATH 171	College Algebra* (or higher)	3
Communications Elective ^		3
Social Science/Economics Elective ^		3
Total Hours		15

^ See all AS general education electives (p. 171)

Third Semester

Electives	9
Humanities Elective ^	3
Science course with Lab ^	4
Total Hours	16

^ See all AS general education electives (p. 171)

Fourth Semester

Electives	6
Science and/or Mathematics Elective ^	5
Social Science/Economics Elective ^	3
Total Hours	14

^ See all AS general education electives (p. 171)

Total Program Hours: 60

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 (p. 231)

General Studies, AGS

The associate of general studies degree from JCCC requires a minimum of 60 college-level credit hours within specified course categories, 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		6
ENGL 121	Composition I*	3
Communications Skills - Speaking ^		3
Global Issues/Diversity ^		3
Total Hours		15

^ See all AGS general education electives (p. 166)

Second Semester

Electives	6
Culture & Ethics-Historical Perspective ^	3
Modes of Inquiry-Scientific ^	3

Computer Skills ^	3
Total Hours	15

^ See all AGS general education electives (p. 166)

Third Semester

Electives	9
Mathematics ^	3
The Arts ^	3
Total Hours	15

^ See all AGS general education electives (p. 166)

Fourth Semester

Electives	9
Culture & Ethics-Cultural Perspective ^	3
Modes of Inquiry-Social ^	3
Total Hours	15

^ See all AGS general education electives (p. 166)

Total Program Hours: 60

Graphic Design

Graphic Design, AAS (p. 232)

Graphic Design, AAS

The graphic design field is highly competitive for both salaried and freelance positions. There is a demand for designers 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 have an opportunity to have their work critiqued by a team of professionals every year. 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.

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 digital production and is reserved for students enrolling in the Qualifier semester courses.

It is recommended that you enroll in these CDTP classes in sequence in the Qualifier semester.

(Major Code 2290; State CIP Code 50.0409)

Graphic Design (<http://www.jccc.edu/academics/credit/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 125	Graphic Processes*	3
GDES 130	Drawing and Media Methods I*	3
GDES 132	Typography*	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. 158)

Fall Semester

GDES 230	Drawing and Media Methods III*	3
GDES 231	Advanced Typography*	3
GDES 235	Production Methods*	3
Humanities Electives ^		3
Total Hours		12

^ See all AAS general education electives (p. 158)

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. 158)

Technical/Studio Electives

ANI 130	Motion Graphics and Effects*	3
ARCH 210	Design History & Society	3
ART 130	Drawing I	3
ART 135	Painting I	3
ART 172	Watercolor Painting	3
CDTP 155	Desktop Photo Manipulation II: Photoshop*	1
CDTP 160	Desktop Publishing II: InDesign*	1
CDTP 165	Desktop Illustration II: 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		3
WEB 110	HTML and CSS	3

WEB 125	Digital Video Tools	1
WEB 233	Visual Storytelling	3

Total Program Hours: 67

Health Care Interpreting

Health Care Interpreting Certificate (p. 234)

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)

Health Care Interpreting (<http://www.jccc.edu/academics/credit/health-care-interpreting/>)

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 (p. 235)

Health Information Systems Implementation and Support Specialist Certificate (p. 237)

Health Information Systems Workflow Management and Training Specialist Certificate (p. 238)

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/credit/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
COMS 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. 171)

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. 171)

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. 171)

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/credit/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/credit/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 (p. 238)

Certified Medication Aide Update Certificate (p. 239)

Certified Nurse Aide Certificate (p. 239)

Certified Nurse Aide Refresher Certificate (p. 240)

Home Health Aide Certificate (p. 240)

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)

- Certified Medication Aide (<http://www.jccc.edu/academics/credit/nursing/certified-medication-aide/>)

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)

Certified Medication Aide (<http://www.jccc.edu/academics/credit/nursing/certified-medication-aide/>)

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)

Certified Nurse Aide (<http://www.jccc.edu/academics/credit/nursing/certified-nurse-aide/>)

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)

Certified Nurse Aide (<http://www.jccc.edu/academics/credit/nursing/certified-nurse-aide/>)

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)

Home Health Aide (<http://www.jccc.edu/academics/credit/nursing/home-health-aide/>)

Required Course

AVHO 106	Home Health Aide (HHA)*	1
Total Hours		1

Total Program Hours: 1

Heating, Ventilation and Air Conditioning Technology

Heating, Ventilation, and Air Conditioning (HVAC) Technology AAS (p. 240)

Heating, Ventilation, and Air Conditioning Technology Certificate (p. 242)

Heating, Ventilation, and Air Conditioning (HVAC) Technology AAS

Modern Heating, Ventilation and Air Conditioning (HVAC) operations depend on 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 a certificate program. The 61-credit-hour associate of applied science degree program focuses on developing an awareness of basic mathematical and

scientific principles of HVAC. The curriculum was developed 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 AAS 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. The HVAC program at JCCC is nationally accreditation from the Partnership for Air-Conditioning, Heating, Refrigeration Accreditation (PAHRA), and you'll benefit when you tell prospective employers you completed a PAHRA-accredited program.

The requirements of the Heating, Ventilation and Air Conditioning (HVAC) AAS program will consist of four semesters. The first two semesters of the HVAC program will be focusing on the student's completing their HVAC certificate which consist of 32 hours. Afterwards, the HVAC students will complete their third and fourth semesters will consist of additional 14 hours of HVAC classes and 15 hours of general education classes.

(Major Code 3020; State CIP Code 47.0201)

Heating, Ventilation and Air Conditioning Technology (<http://www.jccc.edu/academics/credit/hvac/>)

Associate of Applied Science

First Semester

HVAC 105	HVAC Fundamentals*	4
HVAC 110	Electrical Fundamentals*	4
HVAC 136	Heating System Fundamentals*	3
HVAC 167	Sheet Metal Layout and Fabrication*	3
INDT 125	Industrial Safety/OSHA 30	3
Total Hours		17

Second Semester

HVAC 164	EPA 608 Refrigerant Management*	1
HVAC 188	Load Calculation and Duct Design*	3
HVAC 201	Cooling Systems*	3
HVAC 278	Advanced Electrical Systems*	3
HVAC 250	HVAC Installation and Start-up Procedures*	3
HVAC 280	HVAC Internship*	3

Note: If the 1 hour internship for certificate was completed, students can take a 2 hour internship to complete the 3 hour course requirement.

COMS 155	Workplace Skills	1
Total Hours		17

Third Semester

ENGL 121	Composition I*	3
HVAC 231	HVAC Rooftop Units*	3
HVAC 210	Plumbing Fundamentals*	3
Social Science and/or Economics Elective ^		3
Humanities Elective ^		3
Total Hours		15

^ See all AAS general education electives (p. 158)

Fourth Semester

HVAC 165	410-A Refrigerant Management*	1
HVAC 220	HVAC Trade Certification Review*	2
HVAC 275	HVAC Code Review*	3
MATH 120	Business Mathematics* (or higher)	3
Communications Elective ^		3
Total Hours		12

^ See all AAS general education electives (p. 158)

Total Program Hours: 61

Heating, Ventilation, and Air Conditioning Technology Certificate

The certificate program is designed to prepare HVAC graduates for the HVAC job skills needed to service and maintain heating and air conditioning equipment. Students who elect to complete the certificate learn the theory of operation, how to service, repair and design gas furnaces, central air conditioners, heat pumps, rooftop systems. The instructional format is reinforced by working on actual equipment in the laboratory. By completing this program, it will allow students to seek employment in the HVAC 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/credit/hvac/>)

First Semester

HVAC 105	HVAC Fundamentals*	4
HVAC 110	Electrical Fundamentals*	4
HVAC 136	Heating System Fundamentals*	3
HVAC 167	Sheet Metal Layout and Fabrication*	3
INDT 125	Industrial Safety/OSHA 30	3
Total Hours		17

Second Semester

HVAC 164	EPA 608 Refrigerant Management*	1
HVAC 188	Load Calculation and Duct Design*	3
HVAC 201	Cooling Systems*	3
HVAC 250	HVAC Installation and Start-up Procedures*	3
HVAC 278	Advanced Electrical Systems*	3
HVAC 280	HVAC Internship*	1-3

Note: Only a 1 credit hour internship is required for the certificate program.

COMS 155	Workplace Skills	1
Total Hours		15-17

Total Program Hours: 32-34

Horticulture

Horticultural Sciences, AAS (p. 243)

Horticultural Sciences Certificate (p. 242)

Horticultural Sciences Certificate

The 31-credit-hour certificate granted by Johnson County Community College is a program designed to prepare students for entry into the rapidly advancing, diverse horticultural industry. The coursework provides a solid science foundation for propagation, production and managing plants, both food and essential, in controlled environments and the field. The curriculum is designed to provide students with invaluable hands-on learning experience. Upon completion of this certificate, students will possess the knowledge and skills to be successful at entry-level or higher positions in most specializations within Horticulture, including crop production, nursery management, landscape maintenance, golf course management, private and public gardens management, garden center operations, wholesale greenhouse growing, greenhouse operations and other related occupations.

Horticultural Sciences Certificate can be completed through a combination of face-to-face, hybrid, and online classes in one year. Horticultural Sciences Certificate is stackable with the AAS Horticultural Sciences degree.

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/credit/horticultural-sciences/>)

Fall Semester

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

Spring Semester

Horticulture Electives (see below)		3
HORT 205	Plant Propagation*	3
HORT 215	Woody Plants, Evergreens	3
HORT 225	Plant Problems*	3
HORT 255	Pest Management	3
Total Hours		15

Horticulture Electives

HORT 115	Home Horticulture	2
HORT 135	Landscape Design	3
HORT 150	Fruits, Vegetables and Herb Crops	2
HORT 165	Arboriculture	3
HORT 240	Turfgrass II*	3
HORT 260	Horticulture Soils	3
HORT 265	Landscape Construction	3
HORT 270	Horticulture Internship*	3

Total Program Hours: 31

Horticultural Sciences, AAS

The 61 -credit hour horticultural sciences AAS degree program is designed to prepare students with the knowledge and skills for a successful career in the horticulture industry. The curriculum is designed to prepare students for entry or management positions in the rapidly advancing, diverse horticultural industry. The coursework, in addition to providing a solid science foundation for propagation, production, and managing plants, also provides students with invaluable hands-on learning experience, both in controlled environments and the field. The curriculum emphasizes best management practices including integrated pest management, that will conserve and protect our irreplaceable natural resources. Upon completion of the associate of applied science degree, students will possess the knowledge and skills to be successful at entry-level or higher positions in most specializations within Horticulture, including crop production, nursery management, landscape maintenance, golf course management, private and public gardens management, garden center operations, wholesale greenhouse growing, greenhouse operations, landscape design and maintenance, certified commercial pesticide application, arborist, plant science technicians, and other related occupations.

The Associate of Applied Science degree can be completed in two years through a combination of face-to-face, hybrid, and online classes. With an AAS degree, students have the option of transferring to Kansas State University.

Suggested/Sample Course Sequence

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

(Major Code 2150; State CIP Code 01.0601)

Horticultural Sciences (<http://www.jccc.edu/academics/credit/horticultural-sciences/>)

Associate of Applied Science

Fall Semester

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

Spring Semester

Horticulture Electives (see below)		3
HORT 205	Plant Propagation*	3
HORT 215	Woody Plants, Evergreens	3
HORT 225	Plant Problems*	3
HORT 255	Pest Management	3
Total Hours		15

Summer Semester

HORT 160	Garden Center Operations	3
Total Hours		3

Fall Semester

Horticulture Electives (see below)		6
ENGL 121	Composition I*	3
Science Elective ^		3
Note: BIOL 125 is recommended		
Social Science/Economics Elective ^		3
Total Hours		15

^ See all AAS general education electives (p. 158)

Spring Semester

Horticulture Electives (see below)		3
HORT 270	Horticulture Internship*	3
MATH 116	Intermediate Algebra* (or higher)	3
Humanities ^		3
Total Hours		12

^ See all AAS general education electives (p. 158)

Horticulture Electives

HORT 115	Home Horticulture	2
HORT 135	Landscape Design	3
HORT 150	Fruits, Vegetables and Herb Crops	2
HORT 165	Arboriculture	3
HORT 240	Turfgrass II*	3
HORT 260	Horticulture Soils	3
HORT 265	Landscape Construction	3

Total Program Hours: 61

Hospitality Management

Chef Apprenticeship, AAS (p. 245)

Dietary Manager Certificate (p. 246)

Food and Beverage Management, AAS (p. 247)

Hotel & Lodging Management, AAS (p. 249)

Pastry/Baking Certificate (p. 250)

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/credit/hospitality-culinary/chef-apprenticeship/>)

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 281	Culinary Arts Practicum I*	2
MATH 120	Business Mathematics* (or higher)	3
Total Hours		12

Second Semester

Computer Elective (any CPCA course)		1
DIET 151	Nutrition and Meal Planning	3
HMGT 230	Professional Cooking II*	3
HMGT 273	Hospitality Cost Accounting*	3
HMGT 282	Culinary Arts Practicum II*	2
Total Hours		12

Summer

ENGL 121	Composition I*	3
COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	
or COMS 125	Personal Communication	
Total Hours		6

Third Semester

HMGT 220	American Regional Cuisine*	3
HMGT 271	Seminar in Hospitality Management: Purchasing	3
HMGT 285	Culinary Arts Practicum III*	2

Humanities Elective ^	3
Total Hours	11

^ See all AAS general education electives (p. 158)

Fourth Semester

HMG 223	Fundamentals of Baking	3
HMG 226	Garde Manger*	3
HMG 277	Seminar in Hospitality Management: Menu Design & Planning*	3
HMG 286	Culinary Arts Practicum IV*	2
Total Hours		11

Fifth Semester

HMG 231	Advanced Food Preparation*	4
HMG 279	Beverage Control	3
HMG 287	Culinary Arts Practicum V*	2
PSYC 121 or PSYC 130	Applied Psychology Introduction to Psychology	3
Total Hours		12

Sixth Semester

Hospitality Program Elective (see list below)		3
HMG 128	Supervisory Management	3
HMG 228	Advanced Hospitality Management*	3
HMG 288	Culinary Arts Practicum VI*	2
Total Hours		11

Hospitality Program Electives

FL 135	Basic Spanish for Hospitality Management	3
HMG 100	ACF Junior Culinarian	3
HMG 130	Hospitality Law	3
HMG 165	Food Industry Compliance & Safety	3
HMG 167	Local Food Production	3
HMG 207	Hospitality Human Resource Management*	3
HMG 238	Advanced Garde Manger*	3
HMG 240	Advanced Baking*	4
HMG 245	Travel for Credit*	3
HMG 248	Confectionery Arts	3
HMG 250	Introduction to Catering	3
HMG 268	Hospitality Managerial Accounting*	3
HMG 270	Meat and Fish Identification and Fabrication*	3
HMG 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/credit/hospitality-culinary/dietary-manager/>)

First Semester

DIET 100	Foodservice Management for Dietary Managers	3
DIET 151	Nutrition and Meal Planning	3
HMG120	Food Service Sanitation	1
HMG128	Supervisory Management	3
HMG123	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
HMG1207	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/credit/hospitality-culinary/food-beverage-management/>)

Associate of Applied Science Degree

First Semester

HMG120	Food Service Sanitation	1
HMG121	Perspectives of Hospitality Management	3
HMG123	Professional Cooking I*	3
HMG271	Seminar in Hospitality Management: Purchasing	3
ENGL 121	Composition I*	3
MATH 120	Business Mathematics* (or higher)	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
COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	
or COMS 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. 158)

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/credit/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. 158)

Third Semester

COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	
or COMS 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/academics/credit/hospitality-culinary/pastry-baking/bak-admission-process.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/credit/hospitality-culinary/pastry-baking/>)

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

Cybersecurity Certificate (p. 251)

Information Technology - Networking, AAS (p. 251)

Cybersecurity Certificate

The Cybersecurity Certificate at Johnson County Community College prepares students to step into the role of Security Analyst. They will be responsible for protecting computers, networks, and data from unauthorized access, change, or destruction. Upon completion, students will have strong foundational skills in Cyber Defense, Network Security, Ethical Hacking, Digital Forensics, and Scripting.

(Major Code 4670; State CIP Code 11.0901)

- Networking & Cybersecurity (<http://www.jccc.edu/academics/credit/networking-cybersecurity/>)

First Semester

IT 120	CompTIA A+ Practical Applications	3
or IT 205	Implementing Windows Client	
IT 140	Networking Fundamentals	4
IT 230	Linux Fundamentals	3
Total Hours		10

Second Semester

IT 145	Routing and Switching Essentials*	3
IT 175	Cybersecurity Fundamentals*	3
IT 221	Windows Server*	3
IT 231	Linux Administration*	3
IT 238	Digital Forensics*	3
Total Hours		15

Third Semester

IT 201	Network Security Fundamentals*	4
IT 239	Ethical Hacking*	3
Total Hours		7

Total Program Hours: 32

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 & Cybersecurity (<http://www.jccc.edu/academics/credit/networking-cybersecurity/>)

Associate of Applied Science Degree

First Semester

ENGL 121	Composition I*	3
IT 140	Networking Fundamentals	4
IT 205	Implementing Windows Client	3

or IT 120	CompTIA A+ Practical Applications	
IT 230	Linux Fundamentals	3
Social Science and/or Economics Elective [^]		3
Total Hours		16

[^] See all AAS general education electives (p. 158)

Second Semester

IT 145	Routing and Switching Essentials*	3
IT 221	Windows Server*	3
IT 231	Linux Administration*	3
MATH 171	College Algebra* (or higher)	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
COMS 121	Public Speaking	3
or COMS 125	Personal Communication	
Humanities Elective [^]		3
Total Hours		16

[^] See all AAS general education electives (p. 158)

Technical Electives

CIS 142	Beginning Programming using Python	4
CPCA 121	Introduction to Project Management*	1
ELEC 185	LAN Cabling and Installation	3
ELEC 186	CompTIA A+ Essentials	3
IT 175	Cybersecurity Fundamentals*	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 (p. 253)

Interior Design, AAS (p. 254)

Interior Design Assistant Certificate (p. 253)

Kitchen & Bath Design Certificate (p. 256)

Interior Staging Certificate (p. 255)

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)

Floral Design (<http://www.jccc.edu/academics/credit/floral-design/>)

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
Total Hours		12

Electives

BUS 145	Small Business Management	3
ENTR 131	Financial Management for Small Business*	2
ENTR 160	Legal Issues for Small Business	2
ENTR 220	Entrepreneurial Marketing*	2
HORT 201	Introduction to Horticultural Science	4
HORT 220	Herbaceous Plants	3
ITMD 127	Elements of Floral Design	1
MATH 120	Business Mathematics*	3
MKT 230	Marketing	3

Total Program Hours: 25-27

Interior Design Assistant Certificate

The interior design assistant certificate is a program designed for students employed in or seeking positions assisting in the profession of interior design. 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 employment.

One required internship helps develop technical, creative and business skills. Faculty have worked in the field, which equips them to offer valuable firsthand knowledge of what it takes to succeed.

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

(Major Code 3040; State CIP Code 50.0408)

Interior Design (<http://www.jccc.edu/academics/credit/interior-design/>)

First Semester

ITMD 121	Interior Design I	3
ITMD 125	Interior Textiles	3
ITMD 132	Materials and Resources	3
ITMD 230	History of Interior Design I	3
DRAF 164	Architectural Drafting/Residential Interior Design	3
MATH 120	Business Mathematics* (or higher)	3
Total Hours		18

Second Semester

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
ITMD 271	Budgeting and Estimating*	3
ITMD 282	Interiors Internship I*	1
DRAF 264	CAD:Interior Design*	3
Total Hours		16

Total Program Hours: 34

Interior Design, AAS

The Interior Design AAS degree focuses on interior design career preparation. The Interior Design AAS degree provides the educational start to apply for the National Council of Interior Design Qualification, NCIDQ, exam and the Leadership in Energy and Environmental Design, LEED, Green Associate Certification exam. Interior Design AAS degree graduates are qualified to take the Associate Kitchen and Bath Design, AKBD, 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 Affiliated program.

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

(Major Code 2750; State CIP Code 50.0408)

Interior Design (<http://www.jccc.edu/academics/credit/interior-design/>)

Associate of Applied Science Degree

First Semester

ITMD 121	Interior Design I	3
ITMD 125	Interior Textiles	3
ITMD 132	Materials and Resources	3
ITMD 230	History of Interior Design I	3
DRAF 164	Architectural Drafting/Residential Interior Design	3

MATH 120	Business Mathematics* (or higher)	3
Total Hours		18

Second Semester

ITMD 202	Interior Design II*	3
ITMD 181	Interior Design Software*	1
ITMD 185	Construction Methods, Building Systems and Regulations for the Interior Designer*	3
ITMD 231	History of Interior Design II	3
ITMD 271	Budgeting and Estimating*	3
DRAF 264	CAD:Interior Design*	3
Total Hours		16

Third Semester

ITMD 222	Interior Design III*	3
ITMD 129	Design Communication*	3
ITMD 215	Environmental Systems for the Interior Designer*	3
ITMD 260	Practices and Procedures*	3
ITMD 282	Interiors Internship I*	1
ENGL 121	Composition I*	3
Total Hours		16

Fourth Semester

ITMD 224	Interior Design IV*	3
ITMD 235	Kitchen and Bath Design*	3
ITMD 270	Interior Design Capstone*	1
ITMD 284	Interiors Internship II*	1
Humanities Elective^		3
Note: ARTH 180, ARTH 182, ARTH 184 is recommended		
Social Science and/or Economics Elective^		3
General Education Elective^		3
Total Hours		17

^ See all AAS general education electives (p. 158)

Total Program Hours: 67

Interior Staging Certificate

The interior staging certificate is a 15-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/credit/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

MATH 120	Business Mathematics* (or higher)	3
Total Hours		15

Total Program Hours: 15

Kitchen & Bath Design Certificate

Kitchen & Bath Design Certificate prepares graduates for careers in kitchen and bath design. Kitchen & Bath Design Certificate graduates are qualified to take the Associate Kitchen and Bath Design, AKBD, 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. JCCC's interior design program is recognized by the National Kitchen and Bath Association as an NKBA Affiliated program.

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

(Major Code 3140; State CIP Code 50.0408)

Interior Design (<http://www.jccc.edu/academics/credit/interior-design/>)

First Semester

ITMD 121	Interior Design I	3
ITMD 125	Interior Textiles	3
ITMD 132	Materials and Resources	3
ITMD 230	History of Interior Design I	3
DRAF 164	Architectural Drafting/Residential Interior Design	3
MATH 120	Business Mathematics* (or higher)	3
Total Hours		18

Second Semester

ITMD 202	Interior Design II*	3
ITMD 181	Interior Design Software*	1
ITMD 185	Construction Methods, Building Systems and Regulations for the Interior Designer*	3
ITMD 231	History of Interior Design II	3
ITMD 271	Budgeting and Estimating*	3
DRAF 264	CAD:Interior Design*	3
Total Hours		16

Third Semester

ITMD 222	Interior Design III*	3
ITMD 129	Design Communication*	3
ITMD 215	Environmental Systems for the Interior Designer*	3
ITMD 260	Practices and Procedures*	3
ITMD 282	Interiors Internship I*	1
ENGL 121	Composition I*	3
Total Hours		16

Fourth Semester

ITMD 235	Kitchen and Bath Design*	3
ITMD 284	Interiors Internship II*	1
Total Hours		4

Total Program Hours: 54

Legal Interpreting

Legal Interpreting Certificate (p. 257)

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 CJ 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)

Legal Interpreting (<http://www.jccc.edu/academics/credit/legal-interpreting/>)

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

Spring Semester

LI 180	Legal Interpreting Practicum*	2
CJ 121	Introduction to Criminal Justice System	3
Total Hours		5

Total Program Hours: 20

Legal Studies

Associate of Arts with Emphasis in Paralegal (p. 257)

Paralegal Certificate (p. 259)

Associate of Arts with Emphasis in Paralegal

The prerequisite courses must each be completed with a grade of "C" or higher prior to admission to the paralegal program. A minimum of 18 hours of legal specialty courses must be taken at Johnson County Community College. JCCC, as an American Bar Association-approved paralegal program, requires its students to take at least nine semester credits through synchronous instruction. Please contact Gwenda Hawk (ghawk@jccc.edu) for more information.

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

The paralegal program at JCCC:

- Has a challenging curriculum
- Requires that you possess excellent communication skills, analytical ability and a high level of motivation
- Is approved by the American Bar Association
- Is a selective admission program based on various academic and testing criteria

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

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 24.0101)

Paralegal (<http://www.jccc.edu/academics/credit/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
COMS 120	Interpersonal Communication	3
or COMS 121	Public Speaking	
or COMS 125	Personal Communication	
Humanities Elective ^		3
Mathematics Electives ^		3
Total Hours		12

^ See all AA general education electives (p. 161)

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. 161)

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. 161)

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. 161)

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 an associate of arts or science degree or a baccalaureate degree from an accredited postsecondary institution to apply to the Paralegal Certificate program. The prerequisite courses must each be completed with a grade of "C" or higher either prior to admission to the paralegal program or during the first semester in the Paralegal Certificate program. A minimum of 18 hours of legal specialty courses must be taken at Johnson County Community College. JCCC, as an American Bar Association-approved paralegal program, requires its students to take at least nine semester credits through synchronous instruction. Please contact Gwenda Hawk (ghawk@jccc.edu) for more information.

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

The paralegal program at JCCC:

- Has a challenging curriculum
- Requires that you possess excellent communication skills, analytical ability and a high level of motivation
- Is approved by the American Bar Association
- Is a selective admission program based on various academic and testing criteria

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/credit/paralegal/>)

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 (p. 260)

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 60 college-level credit hours, with 30 hours of general education requirements and a minimum of 30 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. 161).

(Major Code 1000; State CIP Code 24.0101)

Associate of Arts

First Semester

Electives		6
ENGL 121	Composition I*	3
Oral Communication ^		3
Humanities Elective ^		3
Total Hours		15

^ See all AA general education electives (p. 161)

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. 161)

Third Semester

Electives	9
Humanities Elective ^	3
Science course with Lab ^	4
Total Hours	16

^ See all AA general education electives (p. 161)

Fourth Semester

Electives	9
Science and/or Mathematics Elective ^	2
Social Science Elective ^	3
Total Hours	14

^ See all AA general education electives (p. 161)

Total Program Hours: 60

Marketing and Management

Marketing Management, AAS (p. 262)

Digital Marketing Certificate (p. 261)

Sales and Customer Relations Certificate (p. 263)

Digital Marketing Certificate

The Digital Marketing certificate is a program designed to introduce students to digital and multi-channel marketing. Students will learn the technical skills and marketing strategy knowledge they need to identify, engage, and develop successful relationships with customers in today's digital environment.

(Major Code 5470; State CIP Code 52.1401)

Marketing and Management (<http://www.jccc.edu/academics/credit/marketing-management/>)**First Semester**

MKT 146	Introduction to Social Media Marketing	3
MKT 205	eMarketing	3
MKT 230	Marketing	3
or MKT 202	Consumer Behavior	
or MKT 240	Advertising and Promotion	
Total Hours		9

Second Semester

CDTP 135	Desktop Photo Manipulation I: Photoshop	1
MKT 134	Professional Selling	3
or MKT 180	Experiential Marketing	
MKT 275	Marketing Analytics and CRM (Customer Relationship Management)	3
WEB 110	HTML and CSS	3
or FASH 235	Online Retailing	
Total Hours		10

Total Program Hours: 19**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/credit/marketing-management/>)**Associate of Applied Science Degree****First Semester**

MKT 230	Marketing	3
MKT 134	Professional Selling	3
ENGL 121	Composition I*	3
MATH 120	Business Mathematics* (or higher)	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
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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
or COMS 121	Public Speaking	
or COMS 120	Interpersonal Communication	
or COMS 125	Personal Communication	
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. 158)

Fourth Semester

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
BLAW 261	Business Law I*	3
WEB 110	HTML and CSS	3
or FASH 235	Online Retailing	
Total Hours		16

Total Program Hours: 63

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/credit/marketing-management/>)

First Semester

MKT 121	Retail Management	3
MKT 134	Professional Selling	3
MKT 230	Marketing	3
MKT 205	eMarketing	3
COMS 121	Public Speaking	3
or COMS 120	Interpersonal Communication	
or COMS 125	Personal Communication	
Total Hours		15

Second Semester

MKT 146	Introduction to Social Media Marketing	3
MKT 202	Consumer Behavior	3
MKT 221	Sales Management*	3
MKT 234	Services Marketing*	3
or MKT 290	Capstone: Marketing Management*	
MKT 275	Marketing Analytics and CRM (Customer Relationship Management)	3
MKT 284	Marketing Management Internship I	1
Total Hours		16

Total Program Hours: 31

Medical Information and Revenue Management

Medical Coding Specialist Certificate (p. 264)

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/credit/medical-information-revenue-management/>)

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 (p. 265)

Metal Fabrication/Welding Certificate (p. 267)

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/credit/welding/>)

Associate of Applied Science Degree

First Semester

ENGL 121	Composition I*	3
MATH 130	Technical Mathematics I* (or higher)	3
MFAB 124	Introduction to Welding	3
MFAB 128	Basic Machine Tool Technology	3
MFAB 180	Blueprint and Symbols Reading for Welders	2
MFAB 240	Metallurgy	2
Total Hours		16

Second Semester

ENGL 123	Technical Writing I*	3
HPER 200	First Aid and CPR	2
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
Social Science Elective ^		3
Total Hours		17

^ See all AAS general education electives (p. 158)

Third Semester (Structural Option)

INDT 125	Industrial Safety/OSHA 30	3
MFAB 205	Shielded Metal Arc Welding (SMAW) II*	3
MFAB 210	Gas Metal Arc Welding (GMAW) II*	3
MFAB 215	Fabrication Practices I*	3
MFAB 220	Flux Core Arc Welding (FCAW)*	3
COMS 155	Workplace Skills	1
Total Hours		16

Third Semester (Manufacturing Option)

INDT 125	Industrial Safety/OSHA 30	3
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
MFAB 241	Gas Tungsten Arc Welding (GTAW) II*	3
COMS 155	Workplace Skills	1
Total Hours		16

Fourth Semester (Structural Option)

Related Electives (see below)		6
Note: INDT 150 is strongly recommended as an elective		
MFAB 250	Fabrication Practices II*	3
MFAB 259	Shielded Metal Arc Welding (SMAW) III*	3
Humanities Elective ^		3
Total Hours		15

^ See all AAS general education electives (p. 158)

Fourth Semester (Manufacturing Option)

Related Electives (see below)		6
Note: INDT 150 is strongly recommended as an elective		
MFAB 140	Maintenance Repair Welding*	3
MFAB 152	Manufacturing Materials and Processes	3
Humanities Elective ^		3
Total Hours		15

^ See all AAS general education electives (p. 158)

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
CET 105	Construction Methods	3
CIS 124	Introduction to Computer Concepts and Applications	3
ENTR 142	Business Plan	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/credit/welding/>)

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
COMS 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 (p. 268)

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 the pathophysiology of neuroscience, legal and ethical concepts of healthcare, safe and effective care environment, and professional standards 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 admissions program with limited enrollment. Prospective students are encouraged to visit the program website or contact JCCC program personnel for additional information. Call 913-469-2583 or email rc-ndt@jccc.edu.

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/credit/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
HC 130	Medical Terminology for Healthcare Professions	3
Social Science/Economics Elective ^		3
General Education Elective ^		3
Total Hours		17

^ See all AAS general education electives (<http://catalog.jccc.edu/degree/requirements/associate-applied-science/>)

First Semester

NDT 125	Introduction to Neurodiagnostic Technology*	4
NDT 130	Foundations of Neurodiagnostic Technology*	3
NDT 135	Pediatric Neurodiagnostic Technology I*	5
Total Hours		12

Second Semester

NDT 140	Adult Neurodiagnostic Technology I*	4
NDT 145	Pediatric Neurodiagnostic Technology II*	4
NDT 150	Neurodiagnostic Clinical Correlates*	2
NDT 156	Neurodiagnostic Clinical I*	2
Total Hours		12

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 256	Polysomnography Clinical*	4
Humanities Elective ^		3
Total Hours		13

^ See all AAS general education electives (<http://catalog.jccc.edu/degree/requirements/associate-applied-science/>)

Total Program Hours: 66

Nursing

Nursing - Registered Nurse, AAS (p. 269)

Practical Nursing Certificate (p. 270)

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/credit/nursing/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. 158)

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. 158)

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.

For application deadlines and other details, see admission requirements (<https://www.jccc.edu/academics/credit/nursing/practical-nurse/pn-admission-requirements.html>).

Evening-weekend option

The evening-weekend program, which can be completed in 14 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/credit/nursing/practical-nurse/lpn-evening-weekend.html>)

For application deadlines and other details, see admission requirements (<https://www.jccc.edu/academics/credit/nursing/practical-nurse/pn-admission-requirements.html>).

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)

Practical Nurse (<http://www.jccc.edu/academics/credit/nursing/practical-nurse/>)

Prerequisite Courses

BIOL 144	Human Anatomy and Physiology*	5-8
or BIOL 140 & BIOL 225	Human Anatomy and Human Physiology	
PSYC 130	Introduction to Psychology	3
PSYC 218	Human Development*	3
HC 130	Medical Terminology for Healthcare Professions	3
Total Hours		14-17

First Semester

PN 125	KSPN Foundations of Nursing*	4
PN 126	KSPN Foundations of Nursing Clinical*	2
PN 136	KSPN Fundamentals of Pharmacology and Safe Medication Administration*	2
PN 140	KSPN Maternal Child Nursing*	2
PN 141	KSPN Maternal Child Nursing Clinical*	1
PN 145	KSPN Mental Health Nursing*	2
Total Hours		13

Second Semester

PN 130	KSPN Nursing Care of Adults I*	4
PN 132	KSPN Nursing Care of Adult I Clinical*	2
PN 150	KSPN Nursing Care of Adults II*	4
PN 152	KSPN Nursing Care of Adults II Clinical*	2
PN 155	KSPN Care of Aging Adults*	2
PN 175	KSPN Leadership, Roles and Issues*	1
Total Hours		15

Total Program Hours: 42-45

Plumbing

Plumbing Technology Certificate (p. 271)

Plumbing Technology Certificate

The Plumbing Technology certificate program will provide students with an opportunity to develop marketable skills in the plumbing career field that is very rewarding. The plumbing certificate is a program designed to offer students an opportunity to acquire the fundamental skills and knowledge used in the plumbing trade.

The plumbing technology certificate prepares graduates to enter the plumbing industry. The core principles and concepts of the plumbing systems are cornerstones of each course. Classroom instruction and learning theories lead to individual and team building projects. The Occupational Outlook Handbook reports that "job opportunities are expected to be excellent, as demand for skilled pipe layers, pipe fitters, and steamfitters is expected to outpace the supply of worker trained in this craft." Completion of the plumbing certificate program provides students with the educational background and the experiences needed to enter the plumbing career field.

(Major Code 3200; State CIP Code 46.0503)

First Semester

PLUM 110	Introduction to Plumbing Systems	3
PLUM 125	Residential Plumbing	3
PLUM 130	Print Reading and Estimating	3
PLUM 140	Backflow Preventers	2
INDT 125	Industrial Safety/OSHA 30	3
COMS 155	Workplace Skills	1
Total Hours		15

Second Semester

PLUM 210	DWV and Water Distribution*	3
PLUM 240	Installation, Maintenance and Repair*	3
PLUM 250	Commercial Plumbing*	3
PLUM 275	Plumbing Code Review*	3
PLUM 280	Plumbing Internship*	3
Total Hours		15

Total Program Hours: 30**Railroad Industrial Technology**

Railroad Structural Welding Certificate (p. 272)

Railroad Track Welding Certificate (p. 273)

Railroad Mechanical Welding Certificate (p. 272)

Railroad Mechanical Welding Certificate

JCCC's railroad industrial technology certificate program is open to BNSF employees and/or approved students.

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 mechanical 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 D15.1, and perform welding operations as needed.

(Major Code 3190; State CIP Code 49.0208)

Railroad Science (<http://www.jccc.edu/academics/credit/railroad-science/>)**Required Courses**

RRIT 160	Basic Welding*	3
RRIT 162	Structural Stick Welding*	3
RRIT 164	Structural Wire Welding*	3
RRIT 166	Mechanical Welding Air Brake Pipe*	3
or RRIT 168	Sheet Metal Welding*	
Total Hours		12

Total Program Hours: 12**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/or D15.1, and perform welding operations as needed.

(Major Code 4530; State CIP Code 49.0208)

Railroad Science (<http://www.jccc.edu/academics/credit/railroad-science/>)

Required Courses

RRIT 142	Structural Pile Welding*	3
RRIT 160	Basic Welding*	3
RRIT 162	Structural Stick Welding*	3
RRIT 164	Structural Wire 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/credit/railroad-science/>)

Required Courses

RRIT 132	Thermite Welding*	3
RRIT 136	Rail and Switch Point Repair Welding*	3
RRIT 145	Frog Welding*	3
RRIT 160	Basic Welding*	3
Total Hours		12

Total Program Hours: 12

Railroad Operations

Railroad Operations, AAS (p. 273)

Railroad Conductor Certificate (p. 274)

Railroad Freight Car Certificate (p. 274)

Railroad Signal Certificate (p. 275)

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.

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/credit/railroad-science/>)

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. 158)

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, BLAW, 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/credit/railroad-science/>)

(Major Code 4410; State CIP Code 49.0208)

Required Courses

RRT 100	Introduction to the Railroad Industry	2
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
Total Hours		18

Total Program Hours: 18

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 of Railroads), and company (Burlington Northern Santa Fe Railway) procedures, in a safe and professional manner.

Railroad Science (<http://www.jccc.edu/academics/credit/railroad-science/>)

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		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/credit/railroad-science/>)

(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 (p. 275)

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 & Recording Arts (<http://www.jccc.edu/academics/credit/music-recording-arts/>)

(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

Respiratory Care

Respiratory Care, AAS (p. 276)

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. Call 913-469-2583 or email rc-ndt@jccc.edu.

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/credit/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 Economics Elective		3
Total Hours		14

^ See all AAS general education electives (p. 158)

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. 158)

Total Program Hours: 65

Sustainable Agriculture

Sustainable Agriculture Certificate (p. 277)

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/credit/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
HMG 167	Local Food Production	3
HORT 255	Pest Management	3
Total Hours		14

Spring Semester

Program Electives (see list below)		3
HMG 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

ENTR 142	Business Plan	3
EVRN 130	Environmental Science	3
EVRN 131	Environmental Science Lab*	1
EVRN 134	Principles of Sustainability	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

Web Development and Digital Media, AAS (p. 279)

Digital Media Certificate (p. 278)

Web Development Certificate (p. 280)

Web Technologies Certificate (p. 281)

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/credit/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
WEB 118	Digital Workflow	3
IT 120	CompTIA A+ Practical Applications	3
Total Hours		16

Second Semester

WEB 120	Web Analytics*	3
WEB 121	Digital Media Assets*	4
WEB 125	Digital Video Tools	1
WEB 126	Technical Interface Skills*	3
WEB 233	Visual Storytelling	3
WEB 243	Search Engine Optimization*	1
Total Hours		15

Total Program Hours: 31

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/credit/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
WEB 118	Digital Workflow	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 126	Technical Interface Skills*	3
WEB 233	Visual Storytelling	3
WEB 243	Search Engine Optimization*	1
Total Hours		14

Third Semester (Web Development Option)

ENGL 121	Composition I*	3
Program Electives		3
NOTE: Program electives are any courses with WEB, CPCA, CDTP, CS, CIS, IT, GAME, ANI or HCIS prefix.		
WEB 238	Interactive Scripting: JQuery*	4
WEB 234	Web Apps I*	3
or WEB 240	HTML and CSS II*	
Social Science and/or Economics Elective ^		3
Total Hours		16

^ See all AAS general education electives (p. 158)

Third Semester (Digital Media Option)

ENGL 121	Composition I*	3
Program Electives		3
NOTE: Program electives are any courses with WEB, CPCA, CDTP, CS, CIS, IT, GAME, ANI or HCIS prefix.		
WEB 231	User Experience*	4
WEB 237	Emerging Technologies*	3
Social Science and/or Economics Elective ^		3
Total Hours		16

^ See all AAS general education electives (p. 158)

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 290	Web Development and Digital Media Capstone*	3
Communications Elective ^		3
NOTE: ENGL 140 is recommended		
Science or Math Elective ^		3
Humanities Elective ^		3
Total Hours		17

^ See all AAS general education electives (p. 158)

Fourth Semester (Digital Media Option)

Program Electives		5
NOTE: Program electives are any courses with WEB, CPCA, CDTP, CS, CIS, IT, GAME, ANI or HCIS prefix.		
WEB 290	Web Development and Digital Media Capstone*	3
Communications Elective ^		3
NOTE: ENGL 140 is recommended		
Science or Math Elective ^		3
Humanities Elective ^		3
Total Hours		17

^ See all AAS general education electives (p. 158)

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/credit/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
WEB 118	Digital Workflow	3

IT 120	CompTIA A+ Practical Applications	3
Total Hours		16

Second Semester

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

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/credit/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
WEB 118	Digital Workflow	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 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)
- Health Information Systems - Healthcare Information and Management Systems Society (HIMSS)
- 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
- 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)

Professional Licensure

In compliance with U.S. Department of Education regulations, JCCC provides information pertaining to professional licensure and certification (<https://www.jccc.edu/about/leadership-governance/policies/professional-licensure.html>) for all relevant programs.

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 (JCCC) 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 employees in age, education and physical ability. In a diverse environment, it becomes the responsibility of each employee to respect these individual differences.

All JCCC policies shall be applied without regard to a person's race, color, age, sex, religion, marital status, national origin, disability, veteran's status, sexual orientation, gender identity, genetic information or other factors which cannot be lawfully considered, to the extent specified by applicable federal and state laws.

JCCC does not discriminate on the basis of sex, race, color, national origin, disability, age, religion, marital status, veteran's status, sexual orientation, gender identity, genetic information or other factors that cannot be lawfully considered in its programs and activities which includes employment and admissions as required by all applicable laws and regulations. Inquiries concerning JCCC's compliance with its nondiscrimination policies (including Title IX and Section 504 inquiries) may be referred to the Title IX Coordinator (TitleIX@jccc.edu), Dean of Student Services and Success or Director of Human Resources or the Dean of Learner Engagement and Success, Johnson County Community College, 12345 College Blvd, Overland Park, KS 66210, 913-469-8500; or to Office for Civil Rights, Kansas City Office, U.S. Department of Education, One Petticoat Lane, 1010 Walnut Street, Suite 320, Kansas City, MO 64106, Telephone: 816-268-0550, Facsimile: 816-268-0559, email OCR: OCR.KansasCity@ed.gov.

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.

Title IX - Report Sexual Harrasment/ Misconduct

Students and/or employees will be made aware of, in writing, the existing counseling, health, mental health, victim advocacy, legal assistance, visa and immigration assistance, student financial aid and other services available for victims, both within the institution and the community. If applicable, further information about assistance availed with academic, living, transportation, working situations and protective measures can be discussed.

Read more about JCCC and Title IX (<https://www.jccc.edu/student-resources/police-safety/know/report-sexual-misconduct.html>)

If you need to discuss or file a complaint about student sexual misconduct, please contact the following individuals.

For Students

Pam Vassar

Assistant Dean, Student Life/Deputy Title IX Coordinator
Johnson County Community College
12345 College Blvd.
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For Employees

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Faculty and Staff

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Past Catalogs

PDF Archives

2020-2021 Academic Year (<http://catalog.jccc.edu/pastcatalogspdf/jccc-catalog-2020-21.pdf>)

2019-2020 Academic Year (<http://catalog.jccc.edu/pastcatalogspdf/jccc-catalog-2019-20.pdf>)

2018-2019 Academic Year (<http://catalog.jccc.edu/pdf/2018-19.pdf>)

2017-2018 Academic Year (<http://catalog.jccc.edu/pdf/2017-18.pdf>)

2016-2017 Academic Year (<http://catalog.jccc.edu/pdf/2016-17.pdf>)

2015-2016 Academic Year (<http://catalog.jccc.edu/pdf/2015-16.pdf>)

2015-Spring (<http://catalog.jccc.edu/pastcatalogspdf/jccc-catalog-spring-2015.pdf>)

2014-Spring (<http://catalog.jccc.edu/pdf/2014-spring.pdf>)

2014-Fall (<http://catalog.jccc.edu/pastcatalogspdf/jccc-catalog-fall-2014.pdf>)

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