2010 – 2011 Course Descriptions

ACCT 2301  Financial Accounting
Accumulation and use of accounting information in business, fundamental concepts and records, operating cycle, income measurement, and preparation and analysis of financial statements. Lab required. 3 credit hours.

ACCT 2302  Managerial Accounting
Uses of accounting data by business management, cost behavior analysis, control of manufacturing product costing, cost-volume-profit analysis, budgeting controls, standard costing, responsibility accounting, and capital budgeting. Lab required. Prerequisite: ACCT 2301. 3 credit hours.

ACNT 1303  Introduction to Accounting I
A study of analyzing, classifying, and recording business transactions in a manual and computerized environment. Emphasis on understanding the complete accounting cycle and preparing financial statements, bank reconciliations, and payroll. Lab required. 3 credit hours. (W)

ACNT 1311  Introduction to Computerized Accounting
Introduction to utilizing the computer in maintaining accounting records, with primary emphasis on a general ledger package. Lab required. Prerequisite: ACNT 1303 or consent of Department Faculty Contact. 3 credit hours. (W)

AERS 1105  The Air Force Today I
Introduces students to the U.S. Air Force and the Air Force Reserve Officer Training Corps (AFROTC); includes Officership, professionalism, military customs and courtesies, and officer opportunities and benefits. AFROTC cadets must register for Leadership Laboratory as it complements this course with followership experience. 1 credit hour.

AERS 1106  The Air Force Today II
Introduces students to the U.S. Air Force and the Air Force Reserve Officer Training Corps (AFROTC); includes Officership, professionalism, military customs and courtesies, and officer opportunities and benefits. AFROTC cadets must register for Leadership Laboratory as it complements this course with followership experience. 1 credit hour.

AERS 2103  The Development of Air Power I
Introduces students to the U.S. Air Force and the Air Force Reserve Officer Training Corps (AFROTC); includes Officership, professionalism, military customs and courtesies, and officer opportunities and benefits; AFROTC cadets must register for Leadership Laboratory as it complements this course with followership experience. 1 credit hour.

AERS 2104  The Development of Air Power II
Introduces students to the U.S. Air Force and the Air Force Reserve Officer Training Corps (AFROTC); includes Officership, professionalism, military customs and courtesies, and officer opportunities and benefits; AFROTC cadets must register for Leadership Laboratory as it complements this course with followership experience. 1 credit hour.

ANTH 2301  Physical Anthropology
Overview of human origins and cultural adaptations combining study of our nearest relatives, the chimpanzees, with analysis of reproductions of fossil bones. Unit concerning forensic anthropology explains how crimes can be solved from analysis of skeletal material; students work with replicas of human bone. Opportunity to participate in field trip to zoo. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

Note: Students may take either ANTH 2301 or ANTH 2302 but not both.
ANTH 2302  Introduction to Archaeology
Study of famous archaeological sites and an introduction to fundamentals of fieldwork methods and interpretation, including how to conduct a field excavation, hands-on work with artifacts, and work on an archaeological site. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.
Note: Students may take either ANTH 2301 or ANTH 2302 but not both.

ANTH 2346  General Anthropology
Study of human beings, their antecedents and related primates, and their cultural behavior and institutions. Introduces the major subfields: physical and cultural anthropology, archaeology, and linguistics. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.
Note: Students may take either ANTH 2346 or HUMA 2323 but not both.

ANTH 2351  Cultural Anthropology
Utilization of the comparative method to examine the concepts of culture and society. The social and cultural beliefs and practices of people of diverse ethnic backgrounds are investigated and compared. May include anthropological fieldwork. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

ANTH 2389  Academic Co-op Anthropology
Integrates on-campus study with practical hands-on work experience in anthropology. In conjunction with class seminars, the student will set specific goals and objectives in the study of anthropology. Contact the Cooperative Work Experience Office. Prerequisite: Consent of Instructor. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

ARAB 1411  Beginning Arabic I
This course, which is designed for students with little or no prior training in the language, focuses on developing the four basic skills of speaking, reading, writing and listening, as well as the study of selected aspects of Arabic civilization. Instruction is enhanced by the use of audio and video materials. Lab required. 3 credit hours.

ARAB 1412  Beginning Arabic II
This course is a continuation of ARAB 1411. It continues the development of the four basic skills of speaking, reading, writing and listening, as well as the study of selected aspects of Arabic civilization. Instruction is enhanced by the use of audio and video materials. Lab required. Prerequisite: ARAB 1411 or consent of Instructor or Department Chair. 3 credit hours.

ARCE 1321  Architectural Illustration
Architectural drawing and sketching. Emphasizes freehand drawing, perspectives, delineation in various media, and development of students' graphical expression. Includes an introduction to various reproduction methods. Lab required. Prerequisite: DFTG 1309. 3 credit hours. (W)

ARCE 1352  Structural Drafting
A study of structural systems including concrete foundations and frames, wood framing and trusses, and structural steel framing systems. Includes detailing of concrete, wood, and steel to meet industry standards including the American Institute of Steel Construction and The American Concrete Institute. Lab required. Prerequisite: DFTG 1309. 3 credit hours. (W)

ARCE 2352  Mechanical and Electrical Systems
The properties of building materials (assemblies), specifications, codes, vendor references, and uses of mechanical, plumbing, conveying, and electrical systems as they relate to architecture for residential and commercial construction. Lab required. Prerequisite: DFTG 1309. 3 credit hours. (W)
ARTC 1302  Digital Imaging I  
Digital imaging using raster image editing and/or image creation software: scanning, resolution, file formats, output devices, color systems, and image-acquisitions. Lab required. Prerequisite: ARTC 1325. 3 credit hours. (W)

ARTC 1305  Basic Graphic Design  
Graphic design with emphasis on the visual communication process. Topics include basic terminology and graphic design principles. Lab required. 3 credit hours. (W)

ARTC 1313  Digital Publishing I-InDesign  
The fundamentals of using digital layout as a primary publishing tool and the basic concepts and terminology associated with typography and page layout. Lab included. Prerequisite: ARTC 1305. 3 credit hours. (W)

ARTC 1321  Illustration Techniques I  
A study of illustration techniques in various media. Emphasis on creative interpretation and the discipline of draftsmanship for visual communication of ideas. Lab required. Prerequisite: ARTS 1316. 3 credit hours. (W)

ARTC 1325  Introduction to Computer Graphics  
A survey of computer design concepts, terminology, processes, and procedures. Topics include computer graphics hardware, electronic images, electronic publishing, vector-based graphics, and interactive multimedia. Lab required. 3 credit hours. (W)

ARTC 1327  Typography  
A study of letterforms and typographic concepts as elements of graphic communication. Emphasis on developing a current, practical typographic knowledge based on industry standards. Lab required. Prerequisite: ARTC 1305 and ARTC 1325. 3 credit hours. (W)

ARTC 1349  Art Direction I  
Creation of projects in art direction for advertising graphic campaigns for products, services, or ideas. Topics include all campaign procedures from initial research and creative strategy to final execution and presentation of a comprehensive project. Lab required. Prerequisite: ARTC 1305. 3 credit hours. (W)

ARTC 1353  Computer Illustration I  
Use of the tools and transformation options of an industry-standard vector drawing program to create complex illustrations or drawings. Includes principles of layout and design and manipulation of text and graphics. Lab required. Prerequisite: ARTC 1325. 3 credit hours. (W)

ARTC 1394  Special Topics in Animation, Interactive Technology, Video Graphics and Special Effects  
Topics address recently identified current events, skills knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lab required. 3 credit hours. (W)

Advanced 3-D Applications  
Study of advanced computer graphics techniques using software applications adopted by the animation, visual effects and game industries. Topics will include 3-D modeling, animation, dynamics, texturing, shading, rendering and compositing in industry-standard production pipelines. Prerequisite: ARTV 1345 or consent of instructor.

Illustration for Digital Media  
Development of drawing techniques applied to visual concept development for animation, visual effects and games. Emphasis on traditional art methods and media for use in narrative and interactive storytelling and communication. Prerequisite: Consent of Department Chair.

ARTC 2301  Illustration Techniques II  
Advanced study of illustration media and techniques using digital and/or traditional tools. Emphasis on conceptualization and composition. Lab required. Prerequisite: ARTC 1321. 3 credit hours. (W)
ARTC 2305  Digital Imaging II-Photoshop
Principles of digital image processing and electronic painting. Emphasis on bitmapped- or raster-based image marking and the creative aspects of electronic illustration for commercial or fine art applications. Lab included. Prerequisite: ARTC 1302. 3 credit hours. (W)

ARTC 2311  History of Communication Graphics
Survey of the evolution of graphic arts in relation to the history of art. Includes formal, stylistic, social, political, economic, and historical aspects. Emphasis on art movements, schools of thought, individuals, and technology as they interrelate with graphic arts. Lab required. 3 credit hours. (W)

ARTC 2335  Portfolio Development for Graphic Design
Preparation of a portfolio comprised of completed graphic design projects. Evaluation and demonstration of portfolio presentation methods based on the student's specific area of study. Lab required. Prerequisite: Consent of Department Chair. 3 credit hours. (W)

ARTC 2340  Computer Illustration II
Advanced use of software applications and/or various media with emphasis on output procedures, the resolution of complex design issues, and concept development. Lab required. Prerequisite: ARTC 1353. 3 credit hours. (W)

ARTC 2347  Design Communication II
Formerly ARTC 2313
An advanced study of the design process and art direction. Emphasis on form and content through the selection, creation, and integration of typographic, photographic, illustrative, and design elements. Lab required. Prerequisite: ARTC 1327. 3 credit hours. (W)

ARTC 2349  Art Direction II
Mastery of advanced art direction projects with emphasis on selected topics in advertising campaigns. Includes written, oral, and visual skills. Lab required. Prerequisite: ARTC 1349. 3 credit hours. (W)

ARTS 1301  Art Appreciation
Introduction to the visual arts, emphasizing the understanding and appreciation of art. Reviews two- and three-dimensional art forms, methods, and media; examines the visual elements and principles of design; and briefly surveys art styles from the prehistoric to the 20th century. Assessment: Placement in at least READ 0310. 3 credit hours.

ARTS 1303  Art History I
Survey of art history from prehistoric times to the Renaissance. Special consideration is given to the form and content of a work of art, as well as the social and cultural context in which the work is created. Assessment: Placement in at least READ 0310. 3 credit hours.

ARTS 1304  Art History II
Survey of art history from the Renaissance period to the present. Special consideration is given to the form and content of a work of art, as well as the social and cultural context in which the work is created. Assessment: Placement in at least READ 0310. 3 credit hours.

ARTS 1311  2-D Design
Introduction to two-dimensional visual organization dealing with basic elements and principles of design. Exploration of black and white, color, and a variety of media. Prepares students for composition in painting, drawing, and other two-dimensional art courses. Lab required. 3 credit hours.

Note: Students should expect additional supply costs.
ARTS 1312  3-D Design
Introduction to three-dimensional design problems utilizing various sculpture materials. Exploration of form and methods in a variety of media. Prepares students for sculpture and other three-dimensional art courses. Lab required. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 1313  Historical Foundation of Photography/Imaging Technology
Introduction to technology in the visual arts, designed to enhance artistic awareness. Includes a foundational approach to photography history and culture through the exploration of a variety of art works from the northern Renaissance use of the camera obscura to the paradigm change of computer technology. Students will demonstrate knowledge of tools and materials through lab participation. 3 credit hours.

ARTS 1316  Drawing I
Introduction to drawing including space, form, line, contour, gesture, texture, value and composition. Learn observational skills in order to render the subjects of still life, figure, perspective and landscape more accurately. Emphasis on technique, imagination, and use of a variety of materials. Lab required. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 1317  Drawing II
Continued study of space, form, line, contour, gesture, texture, value and composition in still life, figure, perspective and landscape. Use of color will be introduced in various media. Emphasis on imagination, technique, development of a personal drawing style, and composition. Lab required. Prerequisite: ARTS 1316. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2311  Advanced 2-D Design
Continued study of two-dimensional visual organization dealing with the elements and principles of design. Further exploration of the use of various black and white and/or color media. Emphasis on the resolution of complex two-dimensional design problems. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate level during the evaluation period. Lab required. Prerequisites: ARTS 1311 and ARTS 1316. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2312  Advanced 3-D Design
Continued study of three-dimensional design problems utilizing various methods and materials. Further exploration of form in a variety of media. Emphasis on the resolution of complex three-dimensional design issues. Lab required. Prerequisite: ARTS 1312. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2316  Painting I
Introduction to painting including use of materials, techniques, color study, and composition. Various painting styles will be practiced. Lab required. Prerequisite: ARTS 1316. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2317  Painting II
Increases the student’s ability to use various techniques, color, and composition with acrylics, oils, and other media. Explores realistic and abstract approaches to painting. Emphasis on design, imagination, personal expression and painting style. Lab required. Prerequisite: ARTS 2316. 3 credit hours.
Note: Students should expect additional supply costs.
ARTS 2323  Figure Drawing I  
Drawing of the life model including instruction in anatomical and creative approaches to figure drawing. Emphasis on personal expression and creativity. Lab required. Prerequisite: ARTS 1316. 3 credit hours.  
*Note: Students should expect additional supply costs.*

ARTS 2324  Figure Drawing II  
Continuation of study of the life model; emphasis on personal expression and creativity. Lab required. Prerequisite: ARTS 2323. 3 credit hours.  
*Note: Students should expect additional supply costs.*

ARTS 2326  Sculpture I  
Study of three-dimensional form and introduction to sculpture techniques including basic methods of modeling, construction, and simple casting procedures. Exploration of various media including stone, wood, metal, plaster, and paper. Lab required. 3 credit hours.  
*Note: Students should expect additional supply costs.*

ARTS 2327  Sculpture II  
Continued application of three-dimensional form and sculpture techniques gaining experience in composition and problem solving in various media. Emphasis on creative expression and personal style. Lab required. Prerequisite: ARTS 2326. 3 credit hours.  
*Note: Students should expect additional supply costs.*

ARTS 2333  Printmaking I  
Introduction to the process of intaglio and relief printing including linoleum cuts, etching, aquatint, collagraph, and monotypes. Lab required. 3 credit hours.  
*Note: Students should expect additional supply costs.*

ARTS 2334  Printmaking II  
Continued application of the intaglio and relief printing processes gaining experience in composition and problem solving in various techniques. Emphasis on creative expression and personal style. Lab required. Prerequisite: ARTS 2333. 3 credit hours.  
*Note: Students should expect additional supply costs.*

ARTS 2336  Papermaking/Bookbinding I  
Elements of structure and principles of design using two- and three-dimensional concepts in the fiber forms of papermaking and bookbinding. Lab required. 3 credit hours.  
*Note: Students should expect additional supply costs.*

ARTS 2337  Papermaking/Bookbinding II  
Advanced elements of structure and principles of design using two and three-dimensional concepts in the fiber forms of papermaking and bookbinding. Lab required. Prerequisite: ARTS 2336. 3 credit hours.  
*Note: Students should expect additional supply costs.*

ARTS 2341  Art Metals I  
Exploration of sculptural forms using non-ferrous and precious metals. Metal construction and jewelry making techniques including soldering, lost wax casting, cold connections, patinas and surface embellishment. Lab required. 3 credit hours.  
*Note: Students should expect additional supply costs.*
ARTS 2342  Art Metals II
Continuation of Art Metals I with emphasis on advanced techniques and individual creative expression. Lab required. Prerequisite: ARTS 2341. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2346  Ceramics I
Introduction to ceramic design and methods including hand building techniques and use of the potter's wheel. Explores clays, glazing, and firing techniques including stoneware and raku. Lab required. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2347  Ceramics II
Further study of ceramic design, method, and media with exploration of various clays, glaze compositions, and kiln operations. Emphasis on creative expression and personal style. Lab required. Prerequisite: ARTS 2346. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2348  Digital Art I
Introduction to creating art on the computer; includes techniques with pencils, charcoal, crayons, pastels, watercolor, oils, and collage. Emphasis is placed on combining traditional art techniques with the computer. No previous computer experience necessary. Lab required. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2349  Digital Art II
Continuation of ARTS 2348. Lab required. Prerequisite: ARTS 2348. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2356  Photography I/Darkroom
Introduction to photography: basic camera operations and darkroom techniques; emphasis on visual imagination and design. Lab required. 3 credit hours.
Note: Students should expect additional supply costs, including a 35mm SLR camera, film, and photographic paper.

ARTS 2357  Photography II/Darkroom
Intermediate black-and-white course; emphasis on developing a visual language, problem solving, craftsmanship, and learning to edit personal work. Technical considerations include print and negative quality, use of studio lighting, and large format cameras. Lab required. Prerequisite: ARTS 2356. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2366  Watercolor I
Introduction to watercolor including instruction in the use of brushes, papers, materials, and various painting techniques on wet and dry paper. Gain experience in mixing colors, color methods, and problem solving in the use of technique and in skillful observation of composition and painting style. Lab required. Prerequisite: ARTS 1316. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2367  Watercolor II
Increases the student's ability to master technique, identify the different pigment properties of color and determine their best use. Exploration of different tools, papers, materials and techniques will be practiced. Emphasis on personal expression and painting style. Lab required. Prerequisite: ARTS 2366. 3 credit hours.
Note: Students should expect additional supply costs.

ARTS 2389  Academic Co-op Arts/Photography
Integrates on-campus study with practical hands-on work experience in art/photography. In conjunction with class seminars, the student will set specific goals and objectives in the study of art. Contact the Cooperative Work Experience Office. 3 credit hours.
ARTV 1211  Storyboard
Techniques of storyboarding including organizing a project's content and arranging it in a visual format. Lab required. 2 credit hours. (W)

ARTV 1303  Basic Animation-Flash
Examination of animation concepts, principles, and storyboard for basic production. Emphasizes creating movement and expression utilizing traditionally or digitally generated image sequences. Lab required. Prerequisites: ARTC 1325 and ARTV 1211. 3 credit hours. (W)

ARTV 1341  3-D Animation I
Intermediate level 3-D course introducing animation tools and techniques used to create movement. Emphasis on using principles of animation. Lab required. Prerequisites: ARTC 1325 and ARTV 1345 or consent of Instructor. 3 credit hours. (W)

ARTV 1343  Digital Sound
Digitizing sound and incorporating it into multimedia or web titles for various delivery systems. Emphasizes compression issues, sampling, synchronizing, and resource management. Lab required. 3 credit hours. (W)

ARTV 1345  3-D Modeling and Rendering I-May
Techniques of three-dimensional (3-D) modeling utilizing industry standard software. Includes the creation and modification of 3-D geometric shapes, use of a variety of rendering techniques, camera light sources, texture, and surface mapping. Lab required. Corequisite: ARTC 1325 or consent of Instructor. 3 credit hour (W)

ARTV 1351  Digital Video
Producing and editing video and sound for multimedia or web productions. Emphasizes capture, editing, and outputting of video using a desktop digital video workstation. Lab required. Prerequisites: ARTC 1325 and ARTV 1211. 3 credit hours. (W)

ARTV 2301  2-D Animation I-Flash
Skill development in the use of software to develop storyboards and two-dimensional animation including creating, importing, and sequencing media elements to create multimedia presentations. Emphasis on conceptualization, creativity, and visual aesthetics. Lab required. Prerequisite: ARTV 1303. 3 credit hours. (W)

ARTV 2330  2-D Animation II-Flash
Advanced study of technical aspects of animation. Emphasizes aesthetic design and completion of an animation project. Includes application of advanced skills and knowledge. Lab required. Prerequisite: ARTV 2301. 3 credit hours. (W)

ARTV 2335  Portfolio Development for Animation
A course in the development of a professional portfolio to showcase the student's skills in animation. Includes self-promotion, resumes, portfolio distribution, and interview techniques. Lab required. Prerequisite: ARTV 2301. 3 credit hours. (W)

ARTV 2341  Advanced Digital Video
Advanced digital video techniques for post-production. Emphasizes generation integration of special effects and animation for film, video, and the Internet. Exploration of new and emerging compression and video streaming technologies. Lab required. Prerequisite: ARTV 1351. 3 credit hours. (W)

ARTV 2345  3-D Modeling and Rendering II - Maya
A studio course focused on advanced 3-D modeling and rendering techniques using industry standard software, modeling techniques, camera settings, lighting, and surfacing to develop detailed environments. Lab required. Prerequisite: ARTV 1345. 3 credit hours. (W)
ARTV 2351  3-D Animation II - Maya
Advanced level 3-D course utilizing animation tools and techniques used to develop movement. Emphasis on advanced animation techniques. Lab required. Prerequisite: ARTV 1341. 3 credit hours. (W)

ARTV 2355  Character Rigging and Animation
Advanced work in 3-D animation. Emphasis on character modeling, rigging and animation. Lab required. Prerequisite: ARTV 2351. 3 credit hours. (W)

BCIS 1305  Business Computer Applications
Introductory course in business information systems and business computer applications. Information system concepts are taught within the context of addressing business and organizational needs. This course emphasizes the role that information systems play in an organization and the key principles a manager needs to grasp to be successful. This course offers an overview of the entire information systems discipline while giving students a solid foundation for further study in advanced information system courses. Lab exercises and assignments provide the student with hands-on experience using business computer applications including word processing, spreadsheets, databases, presentation graphics, and business-oriented utilization of the Internet. Assessment: Placement in College-Level Reading. 3 credit hours.

BCIS 1320  Introduction to Business Programming - Java
Introduction to business programming techniques using Java. Using object-oriented and structured programming techniques, students will design, create, and debug customized business applications with Java. Lab required. 3 credit hours.

BCIS 2390  Systems Analysis and Design
Analysis of business information needs and preparation of specifications and requirements for appropriate data system solutions. Includes instruction in information requirements analysis, specification development and writing, prototype evaluation, and network application interfaces. Prerequisite: BCIS 1305 or consent of Instructor or Department Chair. 3 credit hours.

BIOL 1322  General Nutrition
Nutrients and nutritional processes including functions, food sources, digestion, absorption, and metabolism with application to normal and therapeutic human nutritional needs. For biology and nutrition majors. 3 credit hours.

BIOL 1323  Nutrition and Diet Therapy
Applications of nutrition principles and techniques of nutrition care for healthy individuals and patients/clients at nutritional risk. Nutrition risk screening, interviewing/counseling methods, diet evaluation, basic diet calculations, and documentation. 3 credit hours.

BIOL 1406  General Biology I
For science majors. Current knowledge in the fundamentals of biology from the molecular to cellular level of organization. General topics covered include basic biochemistry, metabolism, energetics, cell structure, DNA, genetics, viruses, and bacteria. Lab required. Assessment: Placement in ENGL 1301; MATH 0310; College-Level Reading. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

BIOL 1407  General Biology II
For science majors. Continuation of BIOL 1406. The biology of the protists, fungi, plants and animals with emphasis on the body systems. Also includes development, diversity, animal behavior and ecology. Dissection included. Lab required. Prerequisite: BIOL 1406. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.
BIOL 1408  Introduction to Biology I
For non-science majors. Survey of biology including molecular and cellular biology, genetics, DNA, microbiology, evolution, and ecology. Emphasis upon current topics in biology. Lab required. 4 credit hours.

BIOL 1409  Introduction to Biology II
For non-science majors. Continuation of BIOL 1408. The biology of the protistans, fungi, plants and animals with emphasis on general human anatomy and physiology. Current topics in biology will be discussed. Dissection included. Lab required. Prerequisite: BIOL 1408. 4 credit hours.

BIOL 1411  General Botany
For science majors. Study of structure and function of plants. Includes plant cells, tissues, organs, an evolutionary survey, and life histories of algae, fungi, mosses, liverworts, ferns and seed-producing plants. Plants' reproductive and functional interactions with their environment and with man. Lab required. Prerequisite: BIOL 1408 or BIOL 1408. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

BIOL 1414  Introduction to Biotechnology I
Overview of classical genetics, DNA structure, the flow of genetic information, DNA replication, gene transcription, protein translation. Principles of major molecular biology and genetic engineering techniques, including restriction enzymes and their uses, major types of cloning vectors, construction of libraries, Southern and Northern blotting, hybridization, PCR, DNA typing. Applications of these techniques in human health and welfare, medicine, agriculture and the environment. Introduction to the human genome project, gene therapy, molecular diagnostics, forensics, creation and uses of transgenic plants and animal and animal cloning and of the ethical, legal, and social issues and scientific problems associated with these technologies. Relevant practical exercises in the above areas. Assessment: Placement in ENGL 1301: MATH 0310: College-Level Reading. Lab required. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

BIOL 1415  Introduction to Biotechnology II
Formerly BITC 1402
Lecture to focus on an integrative approach to study biomolecules with an emphasis on protein structures, functions and uses in the modern bioscience laboratory. Students will investigate the mechanisms involved in the transfer of information from DNA sequences to proteins to biochemical functions. The course will integrate biological and chemical concepts with techniques that are used in research and industry. Critical thinking will be applied in laboratory exercises using inquiry-based approaches, troubleshooting and analyzing experimental data. Lab required. Prerequisite/Concurrent enrollment: BIOL 1414. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

BIOL 2389  Academic Co-op Biology
Integrates on-campus study with practical hands-on work experience in biology. In conjunction with class seminars, the student will set specific goals and objectives in the study of biology. Contact the Cooperative Work Experience Office. Prerequisite: BIOL 1406 or BIOL 1408. 3 credit hours.

BIOL 2401  Anatomy and Physiology I
Study of cell structure and function, tissues, and the skeletal, muscular, and nervous systems. Emphasis is on structure, function, and the interrelationships of the human systems. Lab required. Prerequisite: BIOL 1406 with a grade of "C" or better within the last three years or consent of Department Chair. 4 credit hours.
BIOL 2402  Anatomy and Physiology II
Continued study of structure and function related to the human endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. Additional topics include: composition and functions of blood; the immune response; fluid, electrolyte and pH balance; and human development. Emphasis is placed on the interrelationships of these systems. Lab required. Prerequisite: BIOL 2401 with a grade of "C" or better within the last five years. 4 credit hours.

BIOL 2404  Human Anatomy and Physiology Basic
A one-semester survey of the structure and function of the human body, including discussion and study of cells, tissues, organs, and systems. Lab required. 4 credit hours.

BIOL 2406  Environmental Biology
Introduction to contemporary ecological problems of plant and animal communities. An analysis of ecosystems at the species, population, and community levels of organization, with a discussion of the effects of human interaction. Lab required, including field trips. 4 credit hours.

BIOL 2416  Genetics
Study of the principles of molecular and classical genetics, and the function and transmission of hereditary material. Special emphasis on molecular genetics and genetic engineering. Lab required. Prerequisite: BIOL 1406. 4 credit hours.

BIOL 2421  Microbiology
Classification, cell structure, metabolism, and historical concepts of microorganisms including bacteria, viruses, fungi, protozoa, Chlamydia and Rickettsia. Infectious diseases and immunology will be emphasized. Practical microbiology will include diagnostic microbiology of water, food, sewage, soil, and industrial applications. Laboratory methods are stressed, and experimentation with pure cultures of medical, environmental, and industrial importance is used extensively. Lab required. Prerequisite: BIOL 2402 with a grade of "C" or better within the last five years or consent of Department Chair. 4 credit hours.

BIOM 1280  Cooperative Education-Biomedical Technology/Technician
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 2 credit hours. (W)

BIOM 1355  Medical Electronic Applications
Presentation of sensors, transducers, and supporting circuits used in medical instrumentation devices. Lab required. 3 credit hours. (W)

BITC 1350  Special Studies and Bioethical Issues of Biotechnology
Addresses current events, skills, attitudes, and behaviors pertinent to biotechnology and relevant to the professional development of the student. Includes exploration of ethical and legal behaviors in the context of the biotechnology industry. Prerequisites: BIOL 1414 and BIOL 1415 or consent of Instructor. 3 credit hours. (W)

BITC 2350  Bioinformatics
Current topics in bioinformatics and computational biology. Includes methods for high-throughput data collection, storing, and accessing biological data. Covers programs and algorithms used to analyze data. 3 credit hours. (W)

BITC 2386  Internship - Biology Technician/Biotechnology Laboratory Technician
A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Contact the Cooperative Work Experience Office. Prerequisites: Declared major of Biotechnology and have completed 9 hours of biotechnology courses and consent of Department Chair. Major Requirement: Biotechnology. 3 credit hours. (W)
BITC 2387  Internship - Biology Technician/Biotechnology Laboratory Technician
A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Contact the Cooperative Work Experience Office. Prerequisites: Declared major of Biotechnology and have completed 9 hours of biotechnology courses and consent of Department Chair. Major Requirement: Biotechnology. 3 credit hours. (W)

BITC 2411  Biotechnology Laboratory Instrumentation
Presentation of theory, applications, and operation of various analytical instruments. Addresses separation and identification techniques including electrophoresis, spectrophotometry, and chromatography. Lab required. Prerequisites: BIOL 1414 and BIOL 1415 or consent of Instructor. 4 credit hours. (W)

BITC 2431  Cell Culture Techniques
Theory and applications of cell culture techniques. Laboratory emphasis on the principles and practices of initiation, cultivation, maintenance, preservation of cell lines, and applications. Lab required. Prerequisites: BIOL 1406 or consent of Instructor. 4 credit hours. (W)

BITC 2441  Molecular Biology Techniques
In depth coverage of the theory and laboratory techniques in molecular biology with an emphasis on gene expression and regulation, recombinant DNA, and nucleic acids. Lab required. Prerequisites: BIOL 1414 and BIOL 1415 or consent of Instructor. 4 credit hours. (W)

BMGT 1305  Communications in Management
Basic theory and processes of communication skills necessary for the management of an organization's workforce. 3 credit hours. (W)

BMGT 1307  Team Building
Principles of building and sustaining teams in organizations. Includes team dynamics, process improvement, trust and collaboration, conflict resolution, and the role of the individual in the team. 3 credit hours. (W)

BMGT 1327  Principles of Management
Concepts, terminology, principles, theories, and issues in the field of management. 3 credit hours. (W)

BMGT 1341  Business Ethics
Discussion of ethical issues, the development of a moral frame of reference, and the need for an awareness of social responsibility in management practices and business activities. Includes ethical corporate responsibility. 3 credit hours. (W)

BMGT 1344  Negotiations and Conflict Management
Theories which aid in the diagnosis of interpersonal and intergroup conflict. The role of manager as negotiator, intermediary, and problem solver. 3 credit hours. (W)

BMGT 1382  Cooperative Education-Business Administration and Management, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)
BMGT 1391  Special Topics in Business Administration and Management, General
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. 3 credit hours. (W)

Sales Management
Sales Management has the primary goal of teaching people how to manage others in the workplace. In this course students practice determining the needs of subordinates, cohorts, and superiors; controlling the work environment so as to encourage personnel to achieve; understanding necessary practices for promoting personnel so that they can fit into their new positions well; and evaluating practices so as to make adjustments as needed. Students also perform activities that teach them how adult learning differs from non-adult learning.

BMGT 2309  Leadership
Concepts of leadership and its relationship to management. Prepares the student with leadership and communication skills needed to motivate and identify leadership styles. 3 credit hours. (W)

BMGT 2310  Financial Management
-Development and use of accounting information to support managerial decision-making processes. Topics include managerial concepts and systems, various analyses for decision making, and planning and control. Prerequisite: ACCT 2301 or ACNT 1303. 3 credit hours. (W)

BMGT 2311  Change Management
Knowledge, skills, and tools that enable a leader/organization to facilitate change in a pro-active participative style. 3 credit hours. (W)

BMGT 2331  Principles of Quality Management
-Quality throughout organizations. Includes planning and implementing quality programs in an organization and analyzing cost/benefit of quality. Also covers the impact of employee empowerment. 3 credit hours. (W)

BMGT 2341  Strategic Management
A study of the strategic management process, including analysis of how organizations develop and implement a strategy for achieving organizational objectives in a changing environment. 3 credit hours. (W)

BMGT 2382  Cooperative Education - Business Administration and Management, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

BUSG 2309  Small Business Management/Entrepreneurship
Starting, operating, and growing a small business. Includes essential management skills, how to prepare a business plan, accounting, financial needs, staffing, marketing strategies, and legal issues. 3 credit hours. (W)

BUSI 1301  Introduction to Business
Survey of business operations in a capitalistic economy including ownership, management, marketing, finance and legal and regulatory environment. Includes the role of business in society and the development of a business vocabulary. 3 credit hours.

BUSI 1311  Salesmanship
Principles of personal salesmanship including methods and tasks applicable to a wide variety of industries and commercial settings. 3 credit hours.
BUSI 2301  Business Law
General principles of the law of contracts, property and torts. Includes the historical and ethical background of the law and current legal principles. 3 credit hours.

BUSI 2304  Business Writing and Technical Communications Seminar
This course will engage students in an exploration of the ways in which complex organizations access, create, and transfer knowledge, and of the links between the document creation skills they learned in their technical communications classes and the larger tasks of knowledge management. Prerequisites: ENGL 1301, ENGL 1302, and ENGL 2311. 3 credit hours.

CDEC 1313  Curriculum Resources for Early Childhood Programs
A study of the fundamentals of curriculum design and implementation in developmentally appropriate programs for children. Lab required. 3 credit hours. (W)

CDEC 1317  Child Development Associate Training I
Based on the requirements for the Child Development Associate National Credential (CDA). Topics on CDA overview, general observation skills, and child growth and development overview. The four functional areas of study are creative, cognitive, physical, and communication. Lab required. 3 credit hours. (W)

CDEC 1319  Child Guidance
An exploration of guidance strategies for promoting prosocial behaviors with individual and groups of children. Emphasis on positive guidance principles and techniques, family involvement and cultural influences. Practical application through direct participation with children. Lab required. 3 credit hours. (W)

CDEC 1321  The Infant and Toddler
A study of appropriate infant and toddler programs (birth to age 3), including an overview of development, quality routines, appropriate environments, materials and activities, and teaching/guidance techniques. Lab required. 3 credit hours. (W)

CDEC 1323  Observation and Assessment
A study of observation skills, assessment techniques, and documentation of children's development. Lab required. 3 credit hours. (W)

CDEC 1330  Growth and Development: 6-14 Years
Principles of child growth and development from six through thirteen years. Focus on physical, cognitive, social, and emotional domains of development. Lab required. 3 credit hours. (W)

CDEC 1335  Early Childhood Development: 3-5 Years
Principles of normal growth and development from three to five years. Emphasizes physical, intellectual, emotional, and social development. Lab required. 3 credit hours. (W)

CDEC 1339  Early Childhood Development: 0-3 Years
Principles of normal growth and development from conception through three years of age. Emphasizes physical, intellectual, and social/emotional development. Lab required. 3 credit hours. (W)

CDEC 1356  Emergent Literacy for Early Childhood
An exploration of principles, methods and materials for teaching young children language and literacy through a play-based integrated curriculum. Lab required. 3 credit hours. (W)

CDEC 1358  Creative Arts for Early Childhood
An exploration of principles, methods and materials for teaching children music, movement, visual arts, and dramatic play through process-oriented experiences to support divergent thinking. Lab required. 3 credit hours. (W)
CDEC 1359  Children with Special Needs
A survey of information regarding children with special needs including possible causes and characteristics of exceptionalities, intervention strategies, available resources, referral processes, the advocacy role, and legislative issues. Lab required. 3 credit hours. (W)

CDEC 2166  Practicum - Child Care Provider/Assistant
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Lab required. Prerequisite: Consent of Department Chair. 1 credit hour. (W)

CDEC 2304  Child Abuse and Neglect
Methods used in the identification of physical, emotional, and sexual abuse and neglect with an emphasis on developing skills for working with children and families. Includes methods of referral to public and private agencies that deal with investigation and treatment. Lab required. 3 credit hours. (W)

CDEC 2307  Math and Science for Early Childhood
An exploration of principles, methods, and materials for teaching children math and science concepts and process skills through discovery and play. Lab required. 3 credit hours. (W)

CDEC 2315  Diverse Cultural/Multilingual Education
An overview of multicultural education to include relationship with the family and community to develop awareness and sensitivity to diversity related to individual needs of children. Lab required. 3 credit hours. (W)

CDEC 2322  Child Development Associate Training II
A continuation of the study of the requirements for the Child Development Associate National Credential (CDA). The six functional areas of study include safe, healthy, learning environment, self, social, and guidance. Lab required. 3 credit hours. (W)

CDEC 2324  Child Development Associate Training III
Continuation of the requirements for the Child Development Associate National Credential (CDA). Three of the 13 functional areas of study include family, program management, and professionalism. Lab required. 3 credit hours. (W)

CDEC 2326  Administration of Programs for Children I
Application of management procedures for early child care education programs. Includes planning, operating, supervising, and evaluating programs. Topics cover philosophy, types of programs, policies, fiscal management, regulations, staffing, evaluation, and communication. Lab required. 3 credit hours. (W)

CDEC 2328  Administration of Programs for Children II
An in-depth study of the skills and techniques in managing early care and education programs, including legal and ethical issues, personnel management, team building, leadership, conflict resolution, stress management advocacy, professionalism, fiscal analysis and planning parent education/partnerships, and technical applications in programs. Lab required. 3 credit hours. (W)

CDEC 2336  Administration of Programs for Children III
An advanced study of the skills and techniques in managing early child care education programs. Lab required. 3 credit hours. (W)

CDEC 2340  Instructional Techniques for Children with Special Needs
Exploration of development and implementation of curriculum for children with special needs. Lab required. 3 credit hours. (W)

CDEC 2341  The School Age Child
A study of appropriate programs for the school age child (5 to 13 years), including an overview of development, appropriate environments, materials, and activities and teaching/guidance techniques. Lab required. 3 credit hours. (W)
CDEC 2385  Cooperative Education-Child Development
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. Prerequisite: Consent of Department Chair. 3 credit hours. (W)

CETT 1380  Cooperative Education- Computer Engineering Technology/Technician
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

CETT 1403  DC Circuits
A study of the fundamentals of direct current including Ohm's law, Kirchoff's laws and circuit analysis techniques. Emphasis on circuit analysis of resistive networks and DC measurements. Lab required. 4 credit hours. (W)

CETT 1405  AC Circuits
A study of the fundamentals of alternating current including series and parallel AC circuits, phasors, capacitive and inductive networks, transformers, and resonance. Lab required. Prerequisite: CETT 1403 or consent of Instructor or Program Director. 4 credit hours. (W)

CETT 1425  Digital Fundamentals
An entry-level course in digital electronics covering number systems, binary mathematics, digital codes, logic gates, Boolean algebra, Karnaugh maps, and combinational logic. Emphasis on circuit logic analysis and troubleshooting digital circuits. Lab required. 4 credit hours. (W)

CETT 1429  Solid State Devices
A study of diodes, transistor characteristics and other semiconductor devices, including analysis of static and dynamic characteristics, biasing techniques, and thermal considerations. Lab required. 4 credit hours. (W)

CETT 1431  Programming for Discrete Electronic Devices
Introduction to a high level programming language such as BASIC, PASCAL, or "C." Includes structured programming and problem solving applicable to discrete electronic devices. Lab required. 4 credit hours. (W)

CETT 1445  Microprocessor
An introductory course in microprocessor software and hardware, its architecture, timing sequence, operation, and programming, and discussion of appropriate software diagnostic language and tools. Lab required. Prerequisite: CETT 1425 or consent of Instructor or Program Director. 4 credit hours. (W)

CETT 1457  Linear Integrated Circuits
In depth coverage of the characteristics, operations, stabilization, testing, and feedback techniques of linear integrated circuits. Application in computation, measurements, instrumentation, and active filtering. Lab required. Prerequisite: CETT 1405 or consent of Instructor or Program Director. 4 credit hours. (W)

CETT 2380  Cooperative Education - Computer Engineering Technology/Technician
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)
CHEF 1301  Basic Food Preparation
A study of the fundamental principles of food preparation and cookery to include Brigade System, cooking techniques, material handling, heat transfer, sanitation, safety, nutrition, and professionalism. Professional chef uniform and kitchen tools required. Lab included. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

CHEF 1302  Principles of Healthy Cuisine
Introduction to the principles of planning, preparation, and presentation of nutritionally balanced meals. Adaptation of basic cooking techniques to lower the fat and caloric content. Alternative methods and ingredients will be used to achieve a healthier cooking style. Prerequisites: CHEF 1301 with a grade of “C” or better, CHEF 1305 with a grade of “C” or better, and IFWA 1310. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

CHEF 1305  Sanitation and Safety
A study of personal cleanliness; sanitary practices in food preparation; causes, investigation, control of illness caused by food contamination (Hazard Analysis Critical Control Points); and work place safety standards. 3 credit hours. (W)

CHEF 1310  Garde Manger
A study of specialty foods and garnishes. Emphasis on design, techniques, and display of fine foods. Lab included. Prerequisites: CHEF 1301 with a grade of “C” or better and CHEF 1305 with a grade of “C” or better. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

CHEF 1314  A La Carte Cooking
A course in a la carte or “cooking to order” concepts. Topics include menu and recipe interpretation and conversion, organization of work station, employment of appropriate cooking methods, plating, and saucing principles. Lab included. Prerequisites: CHEF 1301 with a grade of “C” or better and CHEF 1305 with a grade of “C” or better, and CHEF 2331. Prerequisite/Concurrent enrollment: RSTO 1304. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

CHEF 1341  American Regional Cuisine
A study of the development of regional cuisines in the United States with emphasis on the similarities in production and service systems. Application of skills to develop, organize, and build a portfolio of recipe strategies and production systems. Professional chef uniform and kitchen tools required. Prerequisites: CHEF 1301 with a grade of “C” or better and CHEF 1305 with a grade of “C” or better. Lab included. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

CHEF 1345  International Cuisine
The study of classical cooking skills associated with the preparation and service of international and ethnic cuisine. Topics include similarities between food production systems used in the United States and other regions of the world. Professional chef uniform and kitchen tools required. Lab included. Prerequisites: CHEF 1301 with a grade of “C” or better and CHEF 1305 with a grade of “C” or better. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.
CHEF 1380  Cooperative Education - Culinary Arts/Chef Training
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

CHEF 2302  Saucier
Instruction in the preparation of stocks, soups, classical sauces, contemporary sauces, accompaniments, and the pairing of sauces with a variety of foods. Lab included. Prerequisites: CHEF 1301 with a grade of “C” or better and CHEF 1305 with a grade of “C” or better. 3 credit hours. (W)

Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

CHEF 2331  Advanced Food Preparation
Topics include the concept of pre-cooked food items and the preparation of canapés, hors d'oeuvres, and breakfast items. Reinforces the course material of CHEF 2301. Professional chef uniform and kitchen tools required. Lab included. Prerequisites: CHEF 1301 with a grade of “C” or better and CHEF 1305 with a grade of “C” or better. 3 credit hours. (W)

Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

CHEF 2341  Advanced Culinary Competition
Skill development for culinary competition by offering advanced experience in salon presentations as well as hot food competition. Lab included. Prerequisites: CHEF 1301 with a grade of “C” or better, CHEF 1305 with a grade of “C” or better, CHEF 1310, CHEF 1341, CHEF 1345, CHEF 2302, and CHEF 2331. 3 credit hours. (W)

Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

CHEF 2380  Cooperative Education - Culinary Arts/Chef Training
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. To be completed during the last semester of the Culinary Arts degree. Prerequisites: CHEF 1301 with a grade of “C” or better and CHEF 1305 with a grade of “C” or better. 3 credit hours. (W)

CHEF 2581  Cooperative Education - Culinary Arts/Chef Training
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 5 credit hours. (W)

CHEM 1405  Introduction to Chemistry I
For non-science majors. Survey of chemistry including scientific calculations, chemical equations, theory of atoms and bonding, states of matter, nuclear chemistry, elementary thermodynamics, and acid-base chemistry. Lab and recitation required. Assessment: Placement in ENGL 1301; MATH 0310; College-Level Reading. 4 credit hours.
CHEM 1411  General Chemistry I
For science majors, pre-medical, pre-dental, or engineering students. Includes stoichiometry, ideal gas behavior, atomic theory, periodic trends, VSEPR theory, thermochemistry, and bonding theory. Lab and recitation required. Assessment: Placement in ENGL 1301; College-Level Reading. Prerequisites: MATH 1314 or higher level within the last 5 years with a grade of "C" or better. 4 credit hours.
Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

CHEM 1412  General Chemistry II
Addresses topics in chemical equilibria, acid-base theory, solubility, electrochemistry, nuclear chemistry, organic chemistry, biochemistry and states of matter. Lab and recitation required. Prerequisite: CHEM 1411 within the last five years with a grade of "C" or better. 4 credit hours.
Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

CHEM 2389  Academic Co-op Chemistry
Integrates on-campus study with practical hands-on work experience in chemistry. In conjunction with class seminars, the student will set specific goals and objectives in the study of chemistry. Contact the Cooperative Work Experience Office. 3 credit hours.

CHEM 2401  Analytical Chemistry
Lab intensive course focusing on the principles and problems associated with quantitative chemical analysis. Explores the techniques and precautions required to quantitatively measure a variety of chemical species utilizing volumetric, gravimetric and spectroscopic methods. Introduces experimental design and the statistical aspects of data treatment. Lab required. Prerequisite: CHEM 1412 within the last 5 years with a grade of "C" or better. 4 credit hours.

CHEM 2423  Organic Chemistry I
Study of carbon chemistry that considers covalent bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups and introductory synthesis. Lab experiments develop organic techniques. Lab and recitation required. Prerequisite: CHEM 1412 within the last five years with a grade of "C" or better. 4 credit hours.
Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

CHEM 2425  Organic Chemistry II
Includes methods of structural analysis, advanced synthesis and reactions, biochemistry and organometallic topics. Lab experiments emphasize techniques in synthesis, purification and analysis. Lab and recitation required. Prerequisite: CHEM 2423 within the last 5 years with a grade of "C" or better. 4 credit hours.
Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

CHIN 1411  Beginning Chinese I
Introduction to the basic skills of speaking, reading, writing, and listening with attention to selected aspects of Chinese culture; designed for students with little or no previous language training. Instruction is enhanced by the use of tapes, slides, and video cassettes. 4 credit hours.

CHIN 1412  Beginning Chinese II
Continuation of CHIN 1411. Prerequisite: CHIN 1411 or consent of Instructor or Department Chair. 4 credit hours.

CHIN 2311  Intermediate Chinese I
Review and application of skills in listening comprehension, speaking, reading, and writing. Emphasizes conversation, vocabulary acquisition, reading, composition, and culture. Prerequisite: CHIN 1412 or consent of Instructor or Department Chair. 3 credit hours.
CHIN 2312  Intermediate Chinese II  
Continuation of CHIN 2311, emphasizing conversation and reading skills. Prerequisite: CHIN 2311 or consent of Instructor or Department Chair. 3 credit hours.

CNBT 2317  Green Building  
Methods and materials used for building that conserve energy, water, and human resources. Lab required. Prerequisites: DFTG 1309, INDS 1371, and INDS 1373. 3 credit hours. (W)

COMM 1307  Introduction to Mass Communication  
Study of mass media in the United States with emphasis on newspapers, magazines, radio, and television; history of mass media; and the role and responsibility of mass media in modern society. 3 credit hours.

COMM 1316  News Photography I  
Presentation of photographic techniques used by photojournalists in newspapers, magazines, and trade publications including news, feature, sports, editorial portraits, and photo essays. Includes a study of layout design and the freelance market. Lab required. Prerequisite: ARTS 2356. 3 credit hours.

COMM 1317  News Photography II  
Instruction in the technical aspects involved in photo journalism. Topics include lighting equipment, techniques of production photography, reproduction principles, illustrative techniques, and advertising. The student will become proficient in the use of still cameras, film, digital and/or video capture, continuous tungsten light sources and electronic flash lighting, to serve conceptualization of photographic illustration. Lab required. Prerequisite: COMM 1316. 3 credit hours.

COMM 1335  Survey of Radio and Television  
A historical and critical comparison of the first two broadcast media, this course includes discussion of important historical issues that resonate with contemporary media concerns - including intellectual property and patent rights, censorship and freedom of speech, broadcast ethics, public responsibility and emotional contagion. The course also discusses the development and necessary metamorphosis of each medium in response to contemporary events, social change, and the encroachment of new technology, new media and alternative delivery methods. Additionally, COMM 1335 covers critical perspectives in radio and television, production values and aesthetics, and the impact of change in the broadcast marketplace. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

COMM 2300  Media Literacy  
Criticism and analysis of the function, role, and responsibility of the mass media in modern society from the consumer perspective. Includes the ethical problems and issues facing each media format, with the effect of political, economic, and cultural factors on the operation of the media. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

COMM 2301  Intro to Technology and Human Communication  
A survey of emerging interactive communication technologies and how they influence human communication, including interpersonal, group decision-making, and public and private communication contexts. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

COMM 2331  Radio and TV Announcing  
Principles of, and practice in, radio and TV announcing including the study of voice (diction, pronunciation, and delivery) as it relates to mediated contexts and experience in news announcing, interviewing, and acting in commercials. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

COMM 2332  Radio/Television News  
The preparation and analysis of news and analysis of news styles for the electronic media. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.
COMM 2339  Writing for Radio, TV, and Film
Designed to train the student in all typical forms of broadcast and film writing, including news, commercial copy, critique and commentary, radio theatre, comedy and dramatic teleplay, and screenplay. Course provides both writing and production experiences. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

COMM 2389  Academic Co-op Communication
For students with interest or major in mass communications, radio, TV, or film. Integrates on-campus study with practical hands-on work experience in communication. In conjunction with class seminars, the student will set specific goals and objectives in the study of communication. Contact the Cooperative Work Experience Office. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

COSC 1300  Computers and Technology
Study of basic hardware, software, operating systems, and current applications in various segments of society. Current issues such as the effect of computers on society and the history and use of computer are also studied. Required labs introduce students to Windows, the Internet, word processing, spreadsheets, databases, and programming concepts with emphasis on critical thinking/problem solving. Assessment: Placement in College-Level Reading. 3 credit hours.

COSC 1315  Fundamentals of Programming
Course provides an introduction to computer programming concepts using a graphical programming system. Students will focus on programming concepts such as structured design, object oriented design, development, testing, implementation and documentation. Course also includes introduction to language syntax, data types, algorithms, input/output and arrays. Course is recommended for students without prior programming experience. Lab required. 3 credit hours.

COSC 1337  Programming Fundamentals II - Java
Review of control structures and data types with emphasis on structured data types. Applies the object-oriented programming paradigm, focusing on the definition and use of classes along with the fundamentals of object-oriented design. Includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering. Prerequisite: COSC 1436 or consent of Department Chair. 3 credit hours.

Note: Students may take either COSC 1337 or COSC 1437 but not both.

COSC 1436  Programming Fundamentals I - C++
Introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. This course assumes computer literacy. Assessment: Placement in MATH 1332. 4 credit hours.

COSC 1437  Programming Fundamentals II - C++
Review of control structures and data types with emphasis on structured data types. Applies the object-oriented programming paradigm, focusing on the definition and use of classes along with the fundamentals of object-oriented design. Includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering. Prerequisite: COSC 1436 or consent of Department Chair. 4 credit hours.

Note: Students may take either COSC 1337 or COSC 1437 but not both.

COSC 2325  Computer Organization and Machine Language
Study of the architecture of the computer through the use of assembly language programming. Includes study of registers, instruction sets, addressing techniques, machine execution traces, table searching/sorting, file I/O, program linking, and macros. This class is taught with Intel assembly language. Prerequisite: COSC 1436 or consent of Department Chair. 3 credit hours.
COSC 2336  Programming Fundamentals III - C++  
Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include recursion, fundamental data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), and algorithmic analysis. Prerequisite: COSC 1437 or consent of Department Chair. 3 credit hours.  
*Note: Students may take either COSC 2336 or COSC 2436 but not both.*

COSC 2436  Programming Fundamentals III - Java  
Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include recursion, fundamental data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), and algorithmic analysis. Prerequisite: COSC 1337 or consent of Department Chair. 4 credit hours.  
*Note: Students may take either COSC 2336 or COSC 2436 but not both.*

COSU 0300  College Success  
Explores various methods and techniques of improving study skills and habits, including time management, note-taking, reading, communication, test preparation, test taking, problem solving and learning styles. 3 credit hours.  
*Note: May not be used to satisfy the requirements of an associate degree.*

COSU 0301  Test-Taking and Study Skills for Non-Native English Speakers  
This class will prepare non-native English speaking students for success by providing instruction and practice in test-taking techniques as well as exposing them to the expectations and realities of college academic coursework. Topics that will be covered include information processing, memory, strategic learning, self-regulation, goal setting, motivation, educational planning, and learning styles. Techniques of study such as organization, time-management, listening/speaking/reading/writing in a lecture or classroom setting, note-taking, research skills, and test preparation will be covered. This course will be particularly beneficial to students who are required to complete the TOEFL or the IELTS prior to admission to college or university. Prerequisites: ESLC 0310, ESLR 0310 and ESLW 0310, or consent of ESL Testing Coordinator or ESL Department Chair. 3 credit hours.  
*Note: May not be used to satisfy the requirements of an associate degree.*

CPMT 1405  IT Essentials I: PC Hardware and Software  
Provides comprehensive overview of computer hardware and software and an introduction to advanced concepts. Lab required. 4 credit hours. *(W)*

CPMT 2302  Digital Home Technology Integration  
Integration and maintenance of various digital home technology subsystems. Includes digital home automation, digital security and surveillance, digital home networks, digital video and audio networks, and structured wiring. Lab required. 3 credit hours. *(W)*

CPMT 2371  Advanced Home Technology Integration  
This course is a continuation of Home Technology Integration. Introduce new technologies that can be integrated into home subsystems of the future. Discuss details of these new technologies including but not limited to Radio Frequency Identification, Global Positioning System, and Cellular Interface. Considers integration and maintenance of various home technology subsystems. Includes home automation, security and surveillance, home networks, video and audio networks, and structured wiring. Lab required. Prerequisite: CPMT 2302 or consent of Instructor or Program Director. 3 credit hours. *(W)*

CRIJ 1301  Introduction to Criminal Justice  
A multidisciplinary overview and analysis of the major agencies, personnel, and decision-making points which comprise the criminal justice system. Includes problems and issues confronting legislatures, police, courts, corrections, and the community, as they respond to crime in a free society. Legal precedents guiding the decisions of criminal justice agents are also discussed. 3 credit hours.
CRIJ 1306 Court Systems and Practices
Study of procedural regulations that guide the processing of criminal cases through the criminal justice system, with emphasis on the Texas Code of Criminal Procedure and rules of evidence. Includes a discussion of the criminal defendant's due process rights from arrest through confinement as well as issues related to the administration of capital punishment. 3 credit hours.

CRIJ 1307 Crime in America
Survey of the nature, location, and impact of crime in America. Includes historical foundations of crime, theoretical explanations of criminality and delinquency, the recording and measurement of crime, descriptions of criminal careers, and an analysis of public policies concerning crime control. 3 credit hours.

CRIJ 1310 Fundamentals of Criminal Law
Nature of criminal law, historical and philosophical development of law in society, major definitions and concepts, classifications of crime, elements of crimes and penalties using the Texas statutes as illustrations, criminal responsibility. 3 credit hours.

CRIJ 1313 Juvenile Justice System
The juvenile justice system: history, philosophy, and evaluation of the juvenile court; juvenile court practices and procedures; neglect, dependency and delinquency, jurisdiction of the court, the role of the police officer, the correctional officer, and the social welfare worker in the juvenile justice system. 3 credit hours.

CRIJ 2301 Community Resources in Corrections
Introduction to the role of the community in corrections, community programs for adults and juveniles, administration of community programs, legal issues, future trends in community treatment. 3 credit hours.

CRIJ 2313 Correctional Systems and Practices
 Corrections in the criminal justice system, correctional role, institutional operations, alternatives to institutionalization, treatment and rehabilitation, current and future issues. 3 credit hours.

CRIJ 2314 Criminal Investigation
Investigative theory, collection and preservation of evidence, sources of information, interview and interrogation, uses of forensic sciences, case and trial preparation. 3 credit hours.

CRIJ 2323 Legal Aspects of Law Enforcement
Police authority; responsibilities; constitutional restraints; laws of arrest, search, and seizure; and police liability. 3 credit hours.

CRIJ 2328 Police Systems and Practices
The police profession, organization of law enforcement systems, the police role, police discretion, ethics, police-community interaction, current and future issues. 3 credit hours.

DANC 1101 Dance Improvisation
Exploration of movement and visual design leading to choreographic studies. Focus on developing creative potential, personal movement style and expressiveness. Emphasis on experiencing new kinds of movement, making connections among varied movement ideas, seeking new relationships and learning to visualize ideas in dance. 1 credit hour.
DANC 1110  Tap Technique I  
Performance of basic rhythms and techniques fundamental to beginning tap dance. Focus on body placement, terminology, and tap combinations. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. 1 credit hour.  
*Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, and DANC 2301 for a combined total of no more than 18 credit hours.*

DANC 1111  Tap Technique II  
Further study of tap technique with focus on increased vocabulary and more complex rhythms and combinations. Emphasis on skill development, rhythmic accuracy, analysis and composition. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. Prerequisite: DANC 1110 or consent of Instructor. 1 credit hour.  
*Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.*

DANC 1141  Ballet Technique I  
Beginning ballet; development of elementary ballet technique and knowledge of terminology using barre, center work, and beginning movement combinations; emphasis on alignment. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. 1 credit hour.  
*Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.*

DANC 1142  Ballet Technique II  
Intermediate ballet; further study of ballet technique with focus on more complex movement combinations of petit allegro and grand allegro, tours and adagio work. Attention to performance qualities. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. Prerequisite: DANC 1141 or consent of Instructor. 1 credit hour.  
*Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.*

DANC 1145  Modern Dance Technique I  
Beginning modern dance; introduction to the art and discipline of modern dance through floor and center work, basic rhythm, and movement combinations. Attention to the analysis of time, space and energy as they apply to dance. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. 1 credit hour.  
*Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.*
**DANC 1146  Modern Dance Technique II**
Intermediate modern dance; further study in the art and discipline of modern dance. Includes technical development of the body for greater range of movement. Attention to focus, spatial clarity, energy dynamics, musicality, and performing qualities. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. Prerequisite: DANC 1145 or consent of instructor. 1 credit hour.

*Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.*

**DANC 1147  Jazz Dance Technique I**
Beginning jazz dance; practice in basic jazz movements including isolations, elementary jumps, and turns. Focus on the variety of jazz styles including: Funk, Lyrical, Musical Theatre, and Hip Hop/Street Jazz. Includes participation in choreographed combinations and development of performing qualities. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. 1 credit hour.

*Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.*

**DANC 1148  Jazz Dance Technique II**
Intermediate jazz dance; further development of jazz dance style. Focus on movement dynamics, musicality and modes of expression. Attention to more complex movement combinations and composition development. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. Prerequisite: DANC 1147 or consent of instructor. 1 credit hour.

*Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.*

**DANC 1151  Dance Performance I**
Study of dance performance through the application of artistic process skills. In-depth experience in rehearsal and concert production process. Gain experience in working with a choreographer and performing in a variety of concert settings. Prerequisite: Audition. 1 credit hour.

*Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.*

**DANC 1152  Dance Performance II**
Continuation of DANC 1151. Prerequisite: Audition. 1 credit hour.

*Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.*

**DANC 1201  Dance Composition**
An exploration of choreographic tools with emphasis on design, dynamics, movement forms and stage space. Includes idea forming and shaping, structure, abstraction, phrasing and style. Emphasis on creative problem-solving skills, experiencing the artistic process skills as a choreographer and critic, utilizing choreographic devices, and transforming ideas into movement. Prerequisite: DANC 1101. 2 credit hours.
DANC 1212  Dance Practicum I
Practicum in dance with emphasis on choreography. Application of compositional skills and idea forming and shaping. Focus on choreographic designs and the rehearsal process. Prerequisite: Consent of Instructor. 2 credit hours.
Note: Students may take DANC 1212, DANC 1213, DANC 2210, DANC 2211, DANC 2212, and DANC 2213 for a combined total of no more than 8 credit hours.

DANC 1213  Dance Practicum II
Continuation of DANC 1212. Practicum in dance with emphasis on choreography. Prerequisites: DANC 1212 and consent of Instructor. 2 credit hours.
Note: Students may take DANC 1212, DANC 1213, DANC 2210, DANC 2211, DANC 2212, and DANC 2213 for a combined total of no more than 8 credit hours.

DANC 1222  Hip Hop I
Hip Hop I is a course designed to experience the aesthetics of hip hop culture and to develop an understanding of dance/movement as a communicative and multicultural art form within the subculture of hip hop communities. The primary focus of this course is to engage in hip hop not only as a mode of entertainment, but as a medium of communication which represents and impacts the life experiences of youth in America and globally. Lab required. 2 credit hours.
Note: Students may take DANC 1110, Dance 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 hours.

DANC 1223  Hip Hop II
Hip Hop II is a continuation of hip hop I. Further exploration of movement material as it relates to the historical, socio-economic and musical/aesthetic contexts from which hip hop dance emerged. Lab required. Prerequisite: DANC 2222. 2 credit hours.
Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.

DANC 2141  Ballet Technique III
Intermediate/advanced ballet; a continuation of DANC 1142 with greater emphasis on expressive performance of classical ballet. Development of greater physical strength, stamina, and flexibility. Emphasis on experiencing and understanding the classical principles of ballet technique which include form, symmetry, balance, order, line, discipline, and control. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. Prerequisite: DANC 1142 or consent of Instructor. 1 credit hour.
Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.

DANC 2142  Ballet Technique IV
Advanced ballet; a continuation of DANC 2141, introducing more complex elements of petit allegro, grand allegro, classical and contemporary ballet technique. Continued focus on developing and maintaining proper body alignment, rhythmic ability, and performance of ballet variations. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. Prerequisite: DANC 2141 or consent of Instructor. 1 credit hour.
Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.
DANC 2145  Modern Dance Technique III
Intermediate/advanced modern dance, continued development of movement vocabulary with emphasis on processing increasingly complex material. Attention to focus, spatial clarity, energy dynamics, musicality and performing qualities. Continued focus on developing and maintaining proper body alignment, rhythmic ability, and performance of modern combinations. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. Prerequisite: DANC 1146 or consent of Instructor. 1 credit hour.

Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.

DANC 2146  Modern Dance Technique IV
Advanced modern dance; continuation of DANC 2145, introducing more complex elements of classical and contemporary modern dance. Attention to improvisation, partnering and performing qualities. Continued focus on the integrated development of technique, perception, artistic expression, and aesthetic involvement. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. Prerequisite: DANC 2145 or consent of Instructor. 1 credit hour.

Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.

DANC 2147  Jazz Dance Technique III
Intermediate/advanced jazz dance; further practice in jazz movements through advanced level jumps, turns, leaps, kicks, as well as the combination of these elements. Participation in choreographed routines utilizing complex rhythmic structures and movements in a variety of jazz styles. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. Prerequisite: DANC 1148 or consent of Instructor. 1 credit hour.

Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.

DANC 2148  Jazz Dance Technique IV
Includes practice in jazz choreography. Students will be evaluated the first two weeks of the semester to insure proper level placement. Students may be asked to move to a more appropriate technique level during the evaluation period. Prerequisite: DANC 2147 or consent of Instructor. 1 credit hour.

Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.

DANC 2151  Dance Performance III
Continuation of DANC 1152. Prerequisite: Audition. 1 credit hour.

Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.

DANC 2152  Dance Performance IV
Continuation of DANC 2151. Prerequisite: Audition. 1 credit hour.

Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.
DANC 2210  Projects in Dance Performance and Repertory I
A study with different guest artists per semester focusing on choreography and repertory material. The course will explore individual creative processes with emphasis on movement style, dynamics, composition, rehearsal processes and performance. Includes experiencing a variety of movement styles and material each semester. Lab required. Prerequisites: Consent of Dance Chair, and Dance Audition required. 2 credit hours.  
Note: Students may take DANC 1212, DANC 1213, DANC 2210, DANC 2211, DANC 2212, and DANC 2213 for a combined total of no more than 8 credit hours.

DANC 2211  Projects in Dance Performance and Repertory II
A continuation of DANC 2210. A study with different guest artists per semester focusing on choreography and repertory material. The course will explore individual creative processes with emphasis on movement style, dynamics, composition, rehearsal processes and performance. Includes experiencing a variety of movement styles and material each semester. Lab required. Prerequisites: DANC 2210 or consent of Dance Chair, and Dance Audition required. 2 credit hours.  
Note: Students may take DANC 1212, DANC 1213, DANC 2210, DANC 2211, DANC 2212, and DANC 2213 for a combined total of no more than 8 credit hours.

DANC 2212  Dance Practicum III
Practicum in dance with emphasis on choreography and the role of the choreographer in the dance making process. Focus on choreographic designs. Prerequisites: DANC 1213 and consent of Instructor. 2 credit hours.  
Note: Students may take DANC 1212, DANC 1213, DANC 2210, DANC 2211, DANC 2212, and DANC 2213 for a combined total of no more than 8 credit hours.

DANC 2213  Dance Practicum IV
Continuation of DANC 2212. Prerequisites: DANC 2212 and consent of Instructor. 2 credit hours.  
Note: Students may take DANC 1212, DANC 1213, DANC 2210, DANC 2211, DANC 2212, and DANC 2213 for a combined total of no more than 8 credit hours.

DANC 2301  Topics in Dance Technique
A rotating topics course with instruction, participation and performance in various dance styles. The course will explore specific technique, vocabulary, creative processes, dynamics, and musicality of determined dance genre and style. Includes experiencing a variety of movement styles and material each semester. Lab required. Prerequisite: Audition or consent of Instructor. 3 credit hours.  
Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 credit hours.

DANC 2303  Dance Appreciation
A course in the understanding of dance as an art form. Emphasis placed on the aesthetics of dance as a performing art. Students will discuss primitive, classical and contemporary dance and its interrelationship with cultural developments and other art forms. Assessment: Placement in at least READ 0310. 3 credit hours.
DANC 2325 Pilates/Anatomy for Dancers
The purpose of this course is to increase strength, flexibility, range of motion, co-ordination and ease of movement through the Pilates methods. The course will emphasize the application of anatomical and kinesiological principles through a conditioning program for the enhancement of the student's dance or other athletic performance. Classes will introduce beginning through intermediate level exercises in the Pilates mat-work. The course emphasizes the use of proper alignment and technique to understand the efficiency of motion, not only as a means of technique but also a means of all motion for daily life activities. Lab required. 3 credit hours.
Note: Students may take DANC 1110, DANC 1111, DANC 1141, DANC 1142, DANC 1145, DANC 1146, DANC 1147, DANC 1148, DANC 1151, DANC 1152, DANC 1222, DANC 1223, DANC 2141, DANC 2142, DANC 2145, DANC 2146, DANC 2147, DANC 2148, DANC 2151, DANC 2152, DANC 2301 and DANC 2325 for a combined total of no more than 18 hours.

DANC 2389 Academic Co-op Dance
Integrates on-campus study with practical hands-on work experience in dance. In conjunction with class seminars, the student will set specific goals and objectives in the study of dance. Contact the Cooperative Work Experience Office. 3 credit hours.

DFTG 1305 Technical Drafting
Introduction to the principles of drafting to include terminology and fundamentals, including size and shape descriptions, projection methods, geometric construction, sections, auxiliary views. Lab required. 3 credit hours. (W)

DFTG 1309 Basic Computer-Aided Drafting
An introduction to computer-aided drafting. Emphasis is placed on setup; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinating systems; and plot/print to scale. Lab required. 3 credit hours. (W)

DFTG 1317 Architect Drafting-Residential
Architectural drafting procedures, practices, and symbols. Preparation of detailed working drawings for residential structures. Emphasis on light frame construction methods. Lab required. 3 credit hours. (W)

DFTG 1333 Mechanical Drafting
Study of mechanical drawings using dimensioning and tolerances, sectioning techniques, orthographic projection, and pictorial drawings. Lab required. Prerequisite: DFTG 1309. 3 credit hours. (W)

DFTG 1345 Parametric Modeling and Design
Parametric-based design software for 3D design and drafting. Lab required. Prerequisite: DFTG 2319. 3 credit hours. (W)

DFTG 1358 Electrical/Electronics Drafting
Electrical and electronic drawings stressing modern representation used for block diagrams, schematic diagrams, logic diagrams, wiring/assembly drawings, printed circuit board layouts, motor control diagrams, power distribution diagrams, and electrical one-line diagrams. Lab required. 3 credit hours. (W)

DFTG 1371 Mechanical Drafting-Fundamentals of Sheetmetal Design
The Fundamentals of Sheetmetal Design course teaches the skills required in designing sheetmetal parts and assemblies, troubleshooting and creating production drawings. All functions needed to create sheetmetal parts, drawings and assemblies are taught in this course. The lesson modules are structured to maximize hands-on interaction with the Pro/Sheetmetal module in Pro/Engineer. Lab required. Prerequisite: DFTG 1333. 3 credit hours. (W)
DFTG 1380  Cooperative Education-Drafting and Design Technology/Technician, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

DFTG 2300  Intermediate Architectural Drafting -Residential
Continued application of principles and practices used in residential construction. Lab required. Prerequisite: DFTG 1317. 3 credit hours. (W)

DFTG 2312  Technical Illustration and Presentation
Pictorial drawing including isometrics, obliques, perspectives, charts, and graphs. Emphasis on rendering and using different media. Lab required. Prerequisite: DFTG 2319. 3 credit hours. (W)

DFTG 2319  Intermediate Computer-Aided Drafting
A continuation of practices and techniques used in basic computer-aided drafting including the development and use of prototype drawings, construction of pictorial drawings, extracting data, and basics of 3D. Lab required. Prerequisite: DFTG 1309. 3 credit hours. (W)

DFTG 2321  Topographical Drafting
Plotting of surveyors field notes. Includes drawing elevations, contour lines, plan and profiles, and laying out traverses. Lab required. Prerequisite: DFTG 1309. 3 credit hours. (W)

DFTG 2328  Architectural Drafting-Commercial
Architectural drafting procedures, practices, governing codes, terms and symbols including the preparation of detailed working drawings for a commercial building, with emphasis on commercial construction methods. Lab required. Prerequisites: DFTG 1305 and DFTG 2319. 3 credit hours. (W)

DFTG 2332  Advanced Computer-Aided Drafting
Use of advanced techniques, including the use of a customized system and the principles of data manipulation for drawing production enhancement. Presentation of advanced drawing applications, such as three-dimensional solids modeling and linking graphic entities to external non-graphic data. Lab required. Prerequisite: DFTG 2319. 3 credit hours. (W)

DFTG 2335  Advanced Technologies in Mechanical Design and Drafting
Use parametric-based software (Pro/Engineer) for mechanical assembly design and drafting for advanced modeling and analysis. In this course the student will learn how to create and fully detail a multi-view drawing and create reports to contain additional design documentation details. Drawings for both parts and assemblies will be addressed, with emphasis on view management and design details. Lab required. Prerequisite: DFTG 2319 or consent of Instructor or Program Director. 3 hours. (W)

DFTG 2336  Computer-Aided Drafting Programming
Use of programming language to enhance CAD software. Lab required. Prerequisite: DFTG 2319. 3 credit hours. (W)

DFTG 2350  Geometric Dimensioning and Tolerancing
Geometric dimensioning and tolerancing, according to standards, application of various geometric dimensions and tolerances to production drawings. Lab required. Prerequisite: DFTG 1309. 3 credit hours. (W)

DFTG 2381  Cooperative Education-Drafting and Design Technology/Technician, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)
**DHYG 1123 Dental Hygiene Practice**
Emphasis on the laws governing the practice of dentistry and dental hygiene, moral standards, and the ethical standards established by the dental hygiene profession. Practice settings for the dental hygienist, office operations, and preparation for employment. Prerequisites: DHYG 1227 and DHYG 1261. Major Requirement: AAS – Dental Hygiene. 1 credit hour. *(W)*

**DHYG 1207 General and Dental Nutrition**
General nutrition and nutritional biochemistry with emphasis on the effects of nutrition, dental health, diet, and application of counseling strategies. Prerequisite: DHYG 1331. Major Requirement: AAS – Dental Hygiene. 2 credit hours. *(W)*

**DHYG 1215 Community Dentistry**
The principles and concepts of community public health and dental health education emphasizing community assessment, educational planning, implementation, and evaluation, including methods and materials used in teaching dental health education in various community settings. Includes rotation schedule into the community (4 hours weekly). Prerequisites: DHYG 1227, DHYG 1261, and ENGL 1301. Major Requirement: AAS – Dental Hygiene. 2 credit hours *(W)*

**DHYG 1227 Preventive Dental Hygiene Care**
The dental hygienist in the dental health care system emphasizing the basic concepts of disease prevention and health promotion. Communication and behavior modification skills are utilized to facilitate the role of the dental hygienist as an educator. Prerequisites: BIOL 2421, DHYG 1301, and DHYG 1331. Major Requirement: AAS – Dental Hygiene. 2 credit hours. *(W)*

**DHYG 1235 Pharmacology for the Dental Hygienist**
Classes of drugs and their uses, actions, interactions, side effects, contraindications, and systemic and oral manifestations with emphasis on dental applications. Prerequisite: DHYG 1331. Major Requirement: AAS – Dental Hygiene. 2 credit hours. *(W)*

**DHYG 1261 Clinical I-Dental Hygienist**
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisites: BIOL 2421, DHYG 1301, and DHYG 1331. Major Requirement: AAS – Dental Hygiene. 2 credit hours. *(W)*

**DHYG 1301 Orofacial Anatomy, Histology and Embryology**
The histology and embryology of oral tissues, gross anatomy of the head and neck, tooth morphology, and individual tooth identification. Lab included. Prerequisites: BIOL 2401 and BIOL 2402, and CHEM 1405 or CHEM 1411. Major Requirement: AAS – Dental Hygiene. 3 credit hours. *(W)*

**DHYG 1304 Dental Radiology**
Radiation physics, biology, hygiene, and safety theories with an emphasis on the fundamentals of oral radiographic techniques and interpretation of radiographs. Includes exposure of intra-oral radiographs, quality assurance, radiographic interpretation, patient selection criteria, and other ancillary radiographic techniques. Lab included. Corequisite: DHYG 1301, or consent of Program Director. Major Requirement: AAS – Dental Hygiene. 3 credit hours. *(W)*

**DHYG 1311 Periodontology**
Normal and diseased periodontium including the structural, functional, and environmental factors. Emphasis on etiology, pathology, treatment modalities, and therapeutic and preventive periodontics in a contemporary practice setting. Prerequisites: DHYG 1227 and DHYG 1261. Major Requirement: AAS – Dental Hygiene. 3 credit hours. *(W)*

**DHYG 1319 Dental Materials**
Physical and chemical properties of dental materials including the application and manipulation of the various materials used in dentistry. Lab required. Prerequisites: CHEM 1405 or CHEM 1411, and DHYG 1311. Major Requirement: AAS – Dental Hygiene. 3 credit hours. *(W)*
DHYG 1331  Preclinical Dental Hygiene
Foundational knowledge for performing clinical skills on patients with emphasis on procedures, and rational for performing dental hygiene care. Clinical laboratory included (6 hours week). Prerequisites: BIOL 2401, BIOL 2402, and CHEM 1405 or CHEM 1411. Major Requirement: AAS – Dental Hygiene. 3 credit hours. (W)

DHYG 1339  General and Oral Pathology
Disturbances in human body development, diseases of the body, and disease prevention measures with emphasis on the oral cavity and associated structures. Prerequisites: DHYG 1227 and DHYG 1261. Major Requirement: AAS – Dental Hygiene. 3 credit hours. (W)

DHYG 2201  Contemporary Dental Hygiene Care I
Dental hygiene care for the medically or dentally compromised patient with emphasis on supplemental instrumentation techniques. Prerequisites: DHYG 1227 and DHYG 1261. Corequisites: DHYG 1123 and DHYG 2361, or consent of Program Director. Major Requirement: AAS – Dental Hygiene. 2 credit hours. (W)

DHYG 2231  Contemporary Dental Hygiene Care II
A continuation of Contemporary Dental Hygiene Care I. Dental hygiene care for the medically or dentally compromised patient including advanced instrumentation techniques. Prerequisites: DHYG 2201 and DHYG 2361. Major Requirement: AAS – Dental Hygiene. 2 credit hours. (W)

DHYG 2275  Community Dental Health Applications
This course provides an opportunity for students to apply the main concepts of DHYG 1215 by individually developing community educational programs that demonstrate the promotion of health and prevention of disease for a variety of populations. Students learn the variances in the application of health education programs. This course also instructs the student on the use of a variety of media sources and the principles of effective educational presentations. Lab required. Prerequisites: DHYG 1215, DHYG 1227, and DHYG 1261. Major Requirement: AAS – Dental Hygiene. 2 credit hours. (W)

DHYG 2361  Clinical II - Dental Hygienist
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. A method of instruction providing detailed education, training and work-based experience and direct patient/client care, generally at a clinical site. Specific detailed learning objectives are developed for each course by the faculty. Onsite clinical instruction, supervision, evaluation, and placement are the responsibility of the college faculty. Clinical experiences are unpaid external learning experiences. Course may be repeated if topic and learning outcomes vary. Prerequisites: DHYG 1227 and DHYG 1261. Corequisites: DHYG 1123 and DHYG 2201, or consent of Program Director. Major Requirement: AAS – Dental Hygiene. 3 credit hours. (W)

DHYG 2363  Clinical III-Dental Hygienist
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisites: DHYG 1123, DHYG 2201, and DHYG 2361. Corequisite: DHYG 2231. Major Requirement: AAS – Dental Hygiene. 3 credit hours. (W)

DHYG 2375  Strategies of Oral Medicine
Case presentation that emphasizes the integration of dental hygiene sciences, critical thinking and the application of evidence based research on an advanced level. Presentations by students include patient case studies and literature reviews for class discussion. Patient case studies integrate knowledge from the areas of research, pharmacology, periodontology, pathology, emergency care, ethics, nutrition, dental radiology and clinical courses that demonstrate the highest quality of care for each patient. Prerequisites: DHYG 1235, DHYG 2201, and DHYG 2361. Major Requirement: AAS – Dental Hygiene. 3 credit hours. (W)
DRAM 1120  Theatre Practicum - Performance
Practicum in theatre with emphasis on performance techniques and procedures, including a major performance role in a college production. Flexible enrollment. Prerequisite: Consent of Instructor. 1 credit hour.
Note: Students may take DRAM 1120, DRAM 1121, and DRAM 2120 for a combined total of no more than 6 credits hours.

DRAM 1121  Theatre Practicum - Technical
Practicum in theatre with emphasis on theatre techniques and procedures, including major technical responsibilities in the production of a college play. Flexible enrollment. Prerequisite: Consent of Instructor. 1 credit hour.
Note: Students may take DRAM 1120, DRAM 1121, and DRAM 2120 for a combined total of no more than 6 credits hours.

DRAM 1161  Musical Theatre Workshop I
Study and performance of works in the musical theatre repertoire. 1 credit hour.

DRAM 1162  Musical Theatre Workshop II
A continuation of Music Theatre Workshop I. Developing advanced techniques in presenting works from the Musical Theatre repertoire. 1 credit hour.

DRAM 1310  Introduction to the Theatre
Various aspects of theatre are surveyed. Emphasis on types of plays, directing, acting, theatre history, and technical production. Lab required. 3 credit hours.

DRAM 1322  Stage Movement
An introductory study of the concepts of preparing and performing a role on stage with specific emphasis on the actor’s physicality and stage movement. Lab required. 3 credit hours.

DRAM 1323  Basic Theatre Practice
An interactive practicum in theatre. Diverse topics of study will be offered on a rotating basis. Introduction to Directing has emphasis on directing technique and procedure, with experience gained through practical study. Introduction to Directing will be offered in the fall and/or spring semester. New York Field Studies, a course which introduces students first-hand to the performance and theory of the New York professional Theatre, will be offered during Summer II. Other topics of study will be offered periodically. This course may not be repeated for credit. Lab required. 3 credit hours.

DRAM 1330  Stagecraft I
Study and application of the visual aesthetics of design that may include the physical theatre, scenery construction and painting, properties, lighting, costumes, makeup, and backstage organizations. Lab required. 3 credit hours.

DRAM 1341  Theatrical Makeup
Study and application of visual aesthetics in theatrical makeup, including fundamentals of stage makeup, character makeup, corrective techniques, beards, mustaches, and three-dimensional makeup. Lab required. 3 credit hours.

DRAM 1342  Introduction to Costuming
Introduction to constructing costumes for theatrical productions. Students will gain an appreciation of the art of costuming and a sense of fashion history, and will understand how the costume fits into the total concept and production of the play. Lab required. 3 credit hours.

DRAM 1351  Acting I
Introduction to the art of acting including body control, voice, pantomime, interpretation, characterization, and stage movement. Lab required. 3 credit hours.
DRAM 1352  Acting II
Advanced acting, with emphasis on script analysis, complex characterization, ensemble acting and stylized acting in period plays. Lab required. Prerequisite: DRAM 1351 or consent of Instructor. 3 credit hours.

DRAM 1370  Stage Management
Examines the art of stage managing a play production, including rehearsal preparations, performance responsibilities, and production process documentation. Includes intensive examination of the fundamental duty of a successful stage manager, coordinating and facilitating each of the participants in the theatrical process, to include performers, directors, designers, and technicians. Lab required. 3 credit hours.

DRAM 2170  Demonstration Lab
Scenes, techniques and problems studied in various theatre classes are demonstrated to show contrast and different styles. Guest lectures, demonstration and projects in Acting and Directing may also be presented. Preparation and performance in the demonstration laboratory may be related to specific productions. Required for all Theatre majors. Lab required. 1 credit hour.

DRAM 2331  Stagecraft II
The advanced study and application of the visual aesthetics of design; which may include the physical theatre, scenery construction and painting, properties, sound and lighting. Lab required. 3 credit hours.

DRAM 2336  Voice and Diction
Intensive work in the improvement of voice through exercises to develop resonance, range, flexibility, intensity, and control of voice. 3 credit hours.

DRAM 2351  Acting III: Improvisation
General introduction to the techniques, practice and performance of improvisational drama. Body control, voice, pantomime, characterization and stage movement are all included. Lab required. 3 credit hours.

DRAM 2352  Acting IV: Acting for Film and Television
Intensive examination of skills and techniques necessary for successful performances in film and television. Lab required. Prerequisite: DRAM 1351 or consent of Instructor. 3 credit hours.

DRAM 2361  History of the Theatre I
An historical investigation of the theatre and dramatic literature from ancient Greece through 1800. 3 credit hours. 
Note: Students may take DRAM 2361, DRAM 2362 and DRAM 2363 for a combined total of no more than 6 credit hours.

DRAM 2362  History of the Theatre II
An historical investigation of the theatre and dramatic literature from 1800 to the present. 3 credit hours. 
Note: Students may take DRAM 2361, DRAM 2362, and DRAM 2363 for a combined total of no more than 6 credit hours.

DRAM 2363  History of Musical Theatre
Study of the forms and structures of the American musical theatre from its earliest forms through the present day. Lab required. 3 credit hours. 
Note: Students may take DRAM 2361, DRAM 2362, and DRAM 2363 for a combined total of no more than 6 credit hours.

DRAM 2366  History of Film Making I
Investigates the history of motion pictures and its effect on our society as well as its contributions to our culture. Covers the period of 1890-1949. Emphasis on the cinema as an art form. Lab required. 3 credit hours.

DRAM 2367  History of Film Making II
Investigates the history of motion pictures and its effect on our society as well as its contributions to our culture. Covers the period of 1950-present. Emphasis on the cinema as an art form. Lab required. 3 credit hours.
DRAM 2370  Theatre Outreach
An in-depth study of the concepts of dramatic playwriting production and performance, combined with an intensive study of current issues in sociology. Students will research, write and produce plays which highlight and depict the social concerns of contemporary youths. Lab required. Prerequisite: Consent of Instructor. 3 credit hours.

DRAM 2372  Script Analysis
An investigation of dramatic structure from the points of view of the director, actor, playwright and designer. Emphasis is on theory and criticism of theatre arts. Through the study of selected plays from various styles and periods in theatre history, students will learn techniques for analyzing, interpreting and conceptualizing play structure in a manner vital for all theatre artists. Selections will vary each semester. Lab required. 3 credit hours.

DRAM 2373  Practical Costuming
Introduction to fundamentals of costume studio management, theatrical sewing techniques, theatrical supplies and fabrics, painting and dyeing, costume properties and accessories, design preparation methods, personnel and the process of developing costumes for theatrical productions. Lab required. Prerequisite: Consent of Instructor. 3 credit hours.

DRAM 2375  Fundamentals of Stage Lighting
An introductory course that explores the use of light as an artistic medium in theatrical productions. This course acquaints the students with the equipment, design elements, and conceptual processes employed in lighting design and implementation. Students will gain practical experience in laboratory and production settings. Lab required. 3 credit hours.

DRAM 2376  Stage Combat and Circus Skills
Development of advanced specialty skills and techniques of acting. The student will focus on the awareness and development of the mechanics of the body as a tool for the actor; with emphasis on stage fighting, circus skills, stage stunt work and on complex stage combat techniques and choreography. The course includes an instructional component, where the student will teach and/or direct staged fight scenes. Lab required. Prerequisite: Consent of Instructor. 3 credit hours.

DRAM 2377  Shakespeare: Shakespeare on Stage (Acting Shakespeare)
Students will experience language as physical, exploring through exercises and scene work how to employ the meaning, music, and power of the language in the creation of living characters onstage, to engage the audience in the most dynamic Shakespeare possible. Lab required. 3 credit hours.

DRAM 2389  Academic Co-op Drama
Integrates on campus study with practical hands-on work experience in drama. In conjunction with class seminars, the student will set specific goals and objectives in the study of drama. Contact the Cooperative Work Experience Office. 3 credit hours.

DSAE 1340  Diagnostic Electrocardiography
Cardiac testing including the techniques and interpretation of patient physical assessment. Covers electrocardiography, stress testing, Holter monitoring, vital signs, and cardiovascular pharmacology. Lab required. Prerequisite: Current Healthcare Provider Cardiopulmonary Resuscitation (CPR) Certification from American Heart Association (AHA). 3 credit hours. (W)

ECON 1301  Introduction to Economics
Introduction to the principles of economics, including economic behavior of consumers, businesses, and government agencies. Emphasis on economic decision making as used in daily life. 3 credit hours.
ECON 2301  Principles of Macroeconomics
Decision-making in the public sector; economic analysis of inflation, unemployment, and economic growth; national income measurements; money and banking; monetary and fiscal policy; competing economic theories; international economics. 3 credit hours.

ECON 2302  Principles of Microeconomics
Decision-making in the private sector; markets and prices; demand and supply; consumer economics; production, costs and industrial organization; international economics; current topics. 3 credit hours.

ECON 2389  Academic Co-op Economics
Integrates on-campus study with practical hands-on work experience in economics. In conjunction with class seminars, the student will set specific goals and objectives in the study of economics. Contact the Cooperative Work Experience Office. 3 credit hours.

ECRD 1111  Electrocardiography
Fundamentals of cardiovascular anatomy and physiology. Includes basic electrocardiography procedures, interpretation of basic dysrhythmias, and appropriate treatment modalities. Lab required. Prerequisite: Current Healthcare Provider Cardiopulmonary Resuscitation (CPR) Certification from American Heart Association (AHA). Prerequisite/Concurrent enrollment: DSAE 1340. 1 credit hour. (W)

EDUC 1301  Introduction to the Teaching Profession
An introduction and analysis of the culture of schooling and classrooms from the perspective of the teacher, the student and society. Includes information on degree requirements and testing for certification in Texas. Sixteen hours of field-based work in a PK-12 school is required. Lab required. Assessment: Placement in ENGL 0315; READ 0310. 3 credit hours.

EDUC 2301  Introduction to Special Populations
An introduction to the special student populations found in PK-12 schools. The course will provide an overview of schooling and classrooms from the perspectives of language, gender, socioeconomic status, ethnic and academic diversity and equity with an emphasis on factors that facilitate learning. Sixteen hours of field-based work with special populations in a PK-12 school is required. Lab required. Assessment: Placement in ENGL 0315; READ 0310. 3 credit hours.

EECT 1371  Voice-over-Internet Protocol
Voice over IP (VoIP) integrates voice and data transmission and is quickly becoming an important factor in network communications. It promises lower operational costs, greater flexibility, and a variety of enhanced applications. VoIP Fundamentals provides an introduction to the basic concepts of this new technology. This course will contain an overview of basic telephony fundamentals, an introduction to packet voice technologies, and an overview of the Internet Protocol (IP) along with other protocols and standards that define VoIP networks. The class will conduct case studies to support the curriculum and familiarize the student with VoIP system operations. Lab required. 3 credit hours. (W)

EECT 1380  Cooperative Education-Electrical, Electronic and Communications Engineering Technology/Technician
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

EECT 1381  Cooperative Education-Electrical, Electronic and Communications Engineering Technology/Technician
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)
ECT 1407  Convergent Technologies-Convergence +  
A study of telecommunications convergent technologies including telephone, LAN, WAN, wireless, voice, video, and internet protocol. Introduces the student to Voice, Video and Integrated data (VVID) over IP networks to provide seamless and secure communications solutions to business and home technology needs. This includes discussions on interoperability methods and techniques to integrate disparate systems and technologies, and includes people skills development. It prepares individuals to pass the Computing Technology Industry Association (CompTIA) Convergence+ certification exam. Lab required. 4 credit hours. (W)

ECT 1448  Digital Signal Processing (DSP)  
A study of the architecture and applications of digital signal processors (DSP) including mathematical signal processing techniques. Lab required. 4 credit hours. (W)

ECT 2337  Wireless Telephony Systems  
Principles of wireless/cellular telephony systems to include call processing, hand-off, site analysis, antenna radiation patterns, commonly used test/maintenance equipment, and access protocol. This course may be repeated if the areas of emphasis vary. 3 credit hours. (W)

ECT 2373  Case Study III: Advanced VoIP Systems Design  
This course is complementary to the VoIP and Advanced VoIP courses integrating, from an applications perspective, voice, video and integrated data over an IP network. Case Study III provides an applications treatment of the fundamental concepts of this growing technology. From an applications and hands-on perspective this course contains an in-depth analysis of VoIP in the enterprise and legacy network including SOHO (Small Office Home Office). Network security considerations relating to VoIP applications are emphasized. The class will conduct case studies to support the curriculum and familiarize the student with VoIP system operations, protocols, procedures, and applications. Lab required. Prerequisite: EECT 2350 or consent of Instructor or Program Director. 3 credit hours. (W)

ECT 2374  Advanced Wireless  
In-depth coverage of enterprise WLAN security including implementing VLAN and 802.1x type security. Design WLAN networking using site survey techniques. In-depth study of Emerging technologies including: Ultra-Wideband Wireless, VoIP, Mobile Wireless technologies that define VoIP networks. The class will conduct case studies to support the curriculum and familiarize the student with VoIP system operations. Lab required. Prerequisite: EECT 2437 or consent of Instructor or Program Director. 3 credit hours. (W)

ECT 2375  Advanced VoIP  
This course is a continuation of Voice-over-IP (VoIP) integrating voice, video and integrated data over an IP network. VoIP provides an advanced treatment of the fundamental concepts of this growing technology. This course will contain an in-depth analysis of VoIP in the enterprise and legacy network including application in the SOHO (Small Office Home Office) environment. The class also emphasizes network security considerations relating to VoIP applications. The class will conduct case studies to support the curriculum and familiarize the student with VoIP system operations. Lab required. Prerequisite: EECT 1371 or consent of Instructor or Program Director. 3 credit hours. (W)

ECT 2435  Telecommunications  
A study of modern telecommunications systems incorporating microwave, satellite, optical, and wire/cable-based communications systems. Instruction in installation, testing, and maintenance of communications systems components. Lab required. Prerequisite: EECT 2439 or consent of Program Director. 4 credit hours. (W)

ECT 2437  Wireless Telephony Systems  
Principles of wireless/cellular telephony systems to include call processing, hand-off, site analysis, antenna radiation patterns, commonly used test/maintenance equipment, and access protocol. Lab required. 4 credit hours. (W)
ELMT 1405  Basic Fluid Power
- Basic fluid power course covering pneumatic and hydraulic systems, fluid power symbols, operating theory, components, and basic electrical and manual controls. Lab required. 4 credit hours. (W)

ELMT 2435  Certified Electronics Technician Training
Review of electronics concepts and principles in preparation for sitting for a certification examination administered by an outside organization or agency. Lab required. 4 credit hours. (W)

ELMT 2437  Electronic Troubleshooting, Service and Repair
In-depth coverage of electronic systems, maintenance, troubleshooting, and repair. Topics include symptom identification, proper repair procedures, repair checkout, and preventative maintenance. Emphasis on safety and use of test equipment. May be offered as a capstone course. Lab required. 4 credit hours. (W)

EMSP 1160  Clinical-Emergency Medical Technician - Basic
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Consent of Program Director. 1 credit hour. (W)

EMSP 1161  Clinical-Emergency Medical Technician - Advanced I
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Consent of Program Director. 1 credit hour. (W)

EMSP 1162  Clinical-Emergency Medical Technician - Advanced II
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Consent of Program Director. 1 credit hour. (W)

EMSP 1338  Introduction to Advanced Practice
An exploration of the foundations necessary for mastery of the advanced topics of clinical practice out of the hospital. Prerequisite: MDCA 1409 or consent of Program Director. 3 credit hours. (W)

EMSP 1355  Trauma Management
A detailed study of the knowledge and skills in the assessment and management of patients with traumatic injuries. 3 credit hours. (W)

EMSP 1356  Patient Assessment and Airway Management
A detailed study of the knowledge and skills required to perform patient assessment and airway management. Prerequisite: Consent of Program Director. 3 credit hours. (W)

EMSP 1501  Emergency Medical Technician-Basic
Preparation for certification as an Emergency Medical Technician (EMT) - Basic. Includes all the skills necessary to provide emergency medical care at a basic life support level with an emergency service or other specialized services. Lab required. Prerequisite: Consent of Program Director. Corequisite: EMSP 1160. 5 credit hours. (W)

EMSP 2135  Advanced Cardiac Life Support
Theory and skills necessary for the management of a cardiovascular emergencies as specified by the American Heart Association (AHA) guidelines. This course is designed to be repeated multiple times to improve student proficiency. 1 credit hour. (W)

EMSP 2143  Assessment Based Management
A capstone course covering comprehensive, assessment-based patient care management. Includes specific care when dealing with pediatric, adult, geriatric, and special needs patients. 1 credit hour. (W)
EMSP 2260  Clinical-Emergency Medical EMT Paramedic -Advanced III
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 2 credit hours. (W)

EMSP 2330  Special Populations
A detailed study of the knowledge and skills necessary to assess and manage ill or injured patients in diverse populations. Prerequisite: Consent of Program Director. 3 credit hours. (W)

EMSP 2338  EMS Operations
A detailed study of the knowledge and skills to safely manage the scene of an emergency. Prerequisites: EMSP 1161, EMSP 1338, EMSP 1355, EMSP 1356, EMSP 2135, EMSP 2434, and EMSP 2444. 3 credit hours. (W)

EMSP 2434  Medical Emergencies
A detailed study of the knowledge and skills in the assessment and management of patients with medical emergencies. 4 credit hours. (W)

EMSP 2444  Cardiology
Assessment and management of patients with cardiac emergencies. Includes single and multilead ECG interpretation. 4 credit hours. (W)

EMSP 2463  Clinical-Emergency Medical EMT Paramedic -Advanced IV
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. 4 credit hours. (W)

ENGL 0300  Developmental Writing I
A skills improvement course designed to help students improve basic thinking and writing skills. Focus is on paragraph and short essay writing. Basic grammar, punctuation, and sentence construction studied as needed. Lab included. Assessment: Placement in ENGL 0300. 3 credit hours.

Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours. ENGL 0300, ENGL 0305, ENGL 0310, and ENGL 0315 may be taken for a combined total of no more than 9 credit hours.

ENGL 0305  Developmental Writing II
A skills improvement course designed to help students improve thinking and writing skills. Focus is on advanced paragraph development and medium length essay writing. Emphasis on critical reading skills, analytical writing, and vocabulary building. Punctuation and sentence construction studied as needed. Lab included. Assessment: Placement in ENGL 0305. Prerequisite: ENGL 0300. 3 credit hours.

Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours. ENGL 0300, ENGL 0305, ENGL 0310, and ENGL 0315 may be taken for a combined total of no more than 9 credit hours.

ENGL 0310  Developmental Grammar I
This is a skills improvement course recommended for students who do not place into ENGL 0300 or higher. It is designed to help students strengthen the sentence for clearer, more emphatic, more concise expression of thought. Focus is on all facets of standard written English: correct grammar, punctuation, and usage. This course will teach the student to recognize and correct common errors in sentence structure. This course may be taken concurrently with any English course. Lab included. 3 credit hours.

Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours. ENGL 0300, ENGL 0305, ENGL 0310, and ENGL 0315 may be taken for a combined total of no more than 9 credit hours.
ENGL 0315  Writing, Reading, and Reasoning
A skills improvement course designed to help students reach competencies necessary for ENGL 1301. Focuses on reading and writing medium length expository essays, with special emphasis on writing about issues arising from class readings. Students will learn to write effective, logical essays, to develop reading comprehension strategies, and to analyze, synthesize, and make value judgments using critical thinking. Lab included. Assessment: Placement in ENGL 0315. Prerequisite: ENGL 0305. 3 credit hours.
Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours. ENGL 0300, ENGL 0305, ENGL 0310, and ENGL 0315 may be taken for a combined total of no more than 9 credit hours.

ENGL 1301  Composition/Rhetoric I
Expository writing, development of paragraphs and the whole composition, study of model essays, extensive theme writing, and individual conferences. Assessment required prior to enrollment. Lab required. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

ENGL 1302  Composition/Rhetoric II
Continued development of writing skills and development of critical thinking skills in argumentation, analysis and interpretation of various types of literature, extensive reading and writing, MLA documentation, study of research methods and materials, and preparation of research paper. Lab required. Prerequisite: ENGL 1301. 3 credit hours.

ENGL 2307  Creative Writing I
Practical experience in the techniques of imaginative writing. In this course, emphasis will be on the writing of fiction or nonfiction. Each student will study selected literary works to improve critical reading toward the goal of improving creative writing. This course does not satisfy the college requirements for a sophomore literature course. Prerequisite: ENGL 1302. 3 credit hours.

ENGL 2308  Creative Writing II
Practical experience in the techniques of imaginative writing. In this course, emphasis will be on the writing of poetry or drama. Each student will study selected literary works to improve critical reading toward the goal of improving creative writing. This course does not satisfy the college requirements for a sophomore literature course. Prerequisite: ENGL 1302. 3 credit hours.

ENGL 2311  Technical and Business Writing
Introduction to technical writing and communications including preparation of reports, proposals, technical papers, abstracts, and summaries of specific technical interest to the student. Prerequisite: ENGL 1301. 3 credit hours.

ENGL 2322  British Literature I
Survey of major works in British literature from its origin to the beginning of the Romantic Movement. Analysis of these works in their historical, cultural, and social contexts. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.

ENGL 2323  British Literature II
Survey of major works in British literature from the Romantic period to the present. Analysis of these works in their historical, cultural, and social contexts. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.

ENGL 2327  American Literature I
Study of major writers from the Colonial period to the beginning of the Civil War. Analysis and evaluation of these works in their historical, cultural, and social contexts. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.

ENGL 2328  American Literature II
Study of major writers from the Realistic Movement to the present. Analysis and evaluation of these works in their historical, cultural, and social contexts. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.
ENGL 2332  World Literature I
Study of literature from the classical Greek period through the 16th century. Analysis and evaluation of literary works in the historical, cultural, and social contexts. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.

ENGL 2333  World Literature II
Study of literature from the 17th century through the 20th century. Analysis and evaluation of literary works in the historical, cultural, and social contexts. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.

ENGL 2342  Introduction to Literature I - Short Story and Novel
Study of short stories, novels, and nonfiction. Analysis and evaluation of major writers, their techniques, and their contributions to our literary heritage. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.

ENGL 2343  Introduction to Literature II - Poetry and Drama
Study of poetry and drama and of mythology as it relates to these genres. Analysis of our classical heritage, origins of drama, development of contemporary drama and film, and elements and types of poetry. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.

ENGL 2351  Mexican-American Literature
A survey of Mexican-American/Chicano/a literature including fiction, nonfiction, poetry and drama. Prerequisite: ENGL 1302 or ENGL 2311. 3 credit hours.

ENGL 2389  Academic Co-op English
Integrates on-campus study with practical hands-on work experience in English. In conjunction with class seminars, the student will set specific goals and objectives in the study of English. Contact the Cooperative Work Experience Office. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

ENGR 1172  Introduction to Experimental Techniques
Electrical Engineering fundamentals laboratory that stresses laboratory procedures; learning use of common laboratory equipment such as power supplies, multimeters, signal generators, and oscilloscopes; making measurements; familiarization with simple DC resistor circuits; Ohm's law; analyzing AC signals, including frequency, period, amplitude, and rms value; inductors, capacitors and DC transients; measuring phase shift in an AC circuit due to an inductor or capacitor; and basics of laboratory report writing. Prerequisite: MATH 2312 or equivalent. 1 credit hour.

ENGR 1201  Introduction to Engineering
Introduction to engineering as a discipline and a profession. Includes instruction in the application of mathematical and scientific principles to the solution of practical problems for the benefit of society. 2 credit hours.

ENGR 1304  Engineering Graphics
Use of computer-aided drafting, applied geometry, engineering lettering, orthographic projections, dimensioning, pictorial drawing and sketching, sectional views, and working drawings. Lab required. Prerequisite: DFTG 1309 or consent of Instructor or Program Director. 3 credit hours.

ENGR 2110  Introduction to Digital Systems Laboratory
Laboratory to accompany ENGR 2310. The purpose of this laboratory is to give students an intuitive understanding of digital circuits and systems. Laboratory exercises include construction of simple digital logic circuits using prototyping kits and board-level assembly of a personal computer. Prerequisites: COSC 1436 and MATH 2413 or MATH 2417. Corequisite: ENGR 2310. 1 credit hour.

ENGR 2300  Applied Linear Algebra
Matrices, vectors, determinants, linear systems of equations, Gauss-Jordan elimination, vector spaces, basis, eigenvalues, eigenvectors, numerical methods in linear algebra using MATLAB, computer arithmetic, Gaussian elimination, LU factorization, iterative solutions to linear systems, iterative methods for estimating eigenvalues, singular value decomposition, QR factorization. Prerequisite: MATH 2415 or MATH 2419. 3 credit hours.
ENGR 2301  Engineering Mechanics I
Calculus-based study of composition and resolution of forces, equilibrium of force systems, friction, centroids, and moments of inertia. Prerequisite: MATH 2413. 3 credit hours.

ENGR 2302  Engineering Mechanics II
Calculus-based study of dynamics of rigid bodies, force-mass acceleration, work-energy, and impulse-momentum computation. Prerequisite: ENGR 2301. 3 credit hours.

ENGR 2305  Circuits I for Electrical Engineering
Basic principles of R, L, and C circuits; steady-state DC and AC signals; simple transient response. Includes Kirchoff's law, Ohm's law, and Thevenin-Norton equivalence; impedance; nodal, mesh, and loop analysis; and phasors. Laboratory experiments demonstrate basic circuit and network laws and acquaint students with electrical instruments. Lab required. Prerequisites: MATH 2413, MATH 2414, and MATH 2415. Prerequisite/Concurrent enrollment: MATH 2320 or consent of Program Director. 3 credit hours.

ENGR 2310  Introduction to Digital Systems
Introduction to hardware structures and assembly-language concepts that form the basis of the design of modern computer systems. Internal data representation and arithmetic operations in a computer. Basic logic circuits. MIPS assembly language. Overview of PC architecture. Prerequisites: COSC 1436 and MATH 2413 or MATH 2417. Corequisite: ENGR 2110. 3 credit hours.

ENGR 2332  Strength of Materials
Simple structural elements with emphasis on forces, deformation, and material properties. Includes concepts of stress, strain, and elastic properties. Behavior phenomena such as fracture, fatigue, and creep are introduced. Prerequisite/Concurrent enrollment: ENGR 2301. 3 credit hours.

ENGT 1401  Circuit Analysis I
Fundamental concepts of electrical science covering potential, current and power in DC circuits. Fundamental laws and relationships applied to the analysis of circuits and networks: capacitance, inductance and magnetism; single-frequency concepts; the use of computer software in design and analysis of circuits. Lab required. Prerequisite/Concurrent enrollment: MATH 2312. 4 credit hours.

ENGT 1402  Circuit Analysis II
Complex AC circuit analysis. Network theorems, transient analysis, resonance, filters, AC power and three-phase circuits are covered in detail. Applications of computer-assisted solutions are continued. Lab required. Prerequisite: ENGT 1401. Prerequisite/Concurrent enrollment: MATH 2413. 4 credit hours.

ENGT 1407  Digital Fundamentals
Digital logic circuits and techniques. Analysis, design and simulation of combinational and sequential systems using: classical Boolean algebra techniques, laboratory hardware experiments and computer simulation. Introduction to programmable logic devices (PLDs) and application-specific integrated circuits using software tools for the design and analysis of digital logic circuits and systems. Lab required. Prerequisite: COSC 1436 or consent of Instructor or Program Director. 4 credit hours.

ENTC 1380  Cooperative Education-Engineering Technology, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)
ENTC 2380  Cooperative Education-Engineering Technology, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. Prerequisite: ENTC 1380. 3 credit hours. (W)

ENVR 1401  Environmental Science I
Interdisciplinary study of both natural (biology, chemistry, geology) and social (economics, politics, ethics) sciences as they apply to the environment. Focus on current global concerns, including global warming, overpopulation, deforestation, pollution, biodiversity, and resource use. Practical laboratory experience emphasizes the application of fundamental principles of biology and chemistry as well as critical thinking and analysis. Lab required. Assessment: Placement in ENGL 1301; MATH 0310; College-Level Reading. 4 credit hours.

ENVR 1402  Environmental Science II
Continued interdisciplinary study of both natural (biology, chemistry, geology) and social (economics, politics, ethics) sciences as they apply to the environment. Focus on energy issues, global warming, ozone loss, land use, conservation and management, deforestation, biodiversity, the history of environmental law and regulation and local environmental problems. Lab required. Prerequisite: ENVR 1401. 4 credit hours.

ESLC 0305  ESL Listening and Speaking: Intermediate
Emphasis on developing non-native speakers' intermediate listening and speaking skills to facilitate natural communication. Oral skills are developed through individual presentations and interactions in dyads, and in small and large groups. Aural skills are developed through classroom interaction, outside assignments, and video and audio clips designed to enhance non-native speakers' skills in understanding both formal and informal speech styles of English. Focus is given to students' spoken grammar, pronunciation, vocabulary, and exposure to North American culture. Assessment: Placement in ESLC 0305. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree.

ESLC 0310  ESL Listening and Speaking: Advanced
Emphasis on developing non-native speakers' advanced oral communication and listening competencies. Students practice natural communication regarding abstract concepts in classroom activities by working in dyads and in small and large groups while formal speaking skills are focused upon through delivery of oral presentations. Students participate in advanced level listening activities through interaction both in and out of the classroom and the use of video and audio tapes. Focus is given to students' spoken grammar, pronunciation, vocabulary and exposure to North American culture. Assessment: Placement in ESLC 0310. Prerequisite: ESLC 0305. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree.

ESLC 0320  ESL Pronunciation and Accent Reduction
Emphasis on teaching aspects of spoken English, including stress and intonation, individual phonemes, and awareness of connected and reduced speech. Addresses pronunciation problems of specific language groups. Attention to productive and receptive skills is facilitated through classroom activities, student work in dyads and small and large groups, audio and video taping, and individualized feedback of Instructor. Assessment: Placement in ESLC 0305 and ESLR 0305. Prerequisite: ESLC 0305 or consent of Instructor. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree.

ESLG 0305  ESL Grammar: Intermediate I
An intermediate English grammar course designed for non-native speakers of English and is focused on verb usage. Course content supports ESLW 0305 objectives for grammar usage. Assessment: Placement in ESLG 0305. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree.
ESLG 0310  ESL Grammar: Intermediate II
A high-intermediate English grammar course designed for non-native speakers of English for instruction in conditionals, gerunds, infinitives, and prepositions. Course content supports ESLW 0310 objectives for grammar usage. Assessment: Placement in ESLG 0310. Prerequisite: ESLG 0305. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree.

ESLG 0315  ESL Grammar: Advanced
An advanced English grammar course designed for non-native speakers of English and focused on noun clauses, adjective clauses, adverb clauses, and adverbial phrases. Course content supports ESLW 0315 objectives for grammar usage and successful transition into English 1301. Assessment: Placement in ESLG 0315. Prerequisite: ESLG 0310. Prerequisite/Concurrent enrollment: ESLW 0315. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree.

ESLR 0305  ESL Reading: Intermediate I
Instruction in intermediate reading comprehension for non-native speakers who score 60-74 on the Compass/ESL Test. Focuses on teaching students with lower level speaking and listening skills to identify topics, main ideas, and supporting details in simplified academic and literary texts. Assessment: Placement in ESLR 0305. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree. ESLR 0305, ESLR 0310, ESLR 0315, and ESLV 0305 may be taken for a combined total of no more than 9 credit hours.

ESLR 0310  ESL Reading: Intermediate II
Instruction in high-intermediate reading comprehension for non-native speakers who score 75-84 on the Compass/ESL Test. Focuses on teaching vernacular vocabulary and syntax in the informal register, context clues, topics, main ideas, supporting details, transitions, and organizational patterns for improving comprehension of abridged academic and literary texts. Assessment: Placement in ESLR 0310. Prerequisite: ESLR 0305. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree. ESLR 0305, ESLR 0310, ESLR 0315, and ESLV 0305 may be taken for a combined total of no more than 9 credit hours.

ESLR 0315  ESL Reading: Advanced
Instruction in advanced reading comprehension to prepare non-native students for admission to reading-restrictive classes. To enroll, students must score 85-95 on the Compass/ESL Test. ESLR 0315 focuses on cultural allusions, connotation of vocabulary, augmentation of reading rate for non-native speakers, implied main ideas, facts and opinion, inferences and conclusions, authors’ purpose, tone, point of view, vocabulary, and graphic aids in unabridged academic texts. Assessment: Placement in ESLR 0315. Prerequisite: ESLR 0310. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree. ESLR 0305, ESLR 0310, ESLR 0315, and ESLV 0305 may be taken for a combined total of no more than 9 credit hours.

ESLV 0305  ESL Vocabulary: Idioms
Instruction in idiomatic American English for second language learners. Increases familiarity with idiomatic English to facilitate comprehension and productive use of idioms in spoken and written discourse. Prerequisites: ESLC 0305 and ESLR 0305, or consent of Instructor or Department Chair. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree. ESLR 0305, ESLR 0310, ESLR 0315, and ESLV 0305 may be taken for a combined total of no more than 9 credit hours.

ESLV 0305  ESL Writing: Intermediate I
Instruction in intermediate writing skills for non-native speakers. Focuses on sentence-level writing and paragraph development. Introduces students to pre-academic, experiential writing. Trains students to develop and organize ideas in a variety of rhetorical modes. Assessment: Placement in ESLW 0305. 3 credit hours.
Note: May not be used to satisfy the requirement for an associate degree.
ESLW 0310  ESL Writing: Intermediate II
Instruction in high-intermediate writing skills for non-native speakers. Focuses on multi-paragraph essays. Introduces students to academic writing. Trains students to develop and organize ideas in a variety of rhetorical modes. Assessment: Placement in ESLW 0310. Prerequisites: ESLG 0305 and ESLW 0305. 3 credit hours.

Note: May not be used to satisfy the requirement for an associate degree.

ESLW 0315  ESL Writing: Advanced
Instruction in advanced essay writing designed to prepare non-native students to enter ENGL 1301. Trains students to write academically acceptable papers in various rhetorical modes with a primary focus on argumentation. Focuses on mechanics of writing, common problems that ESL speakers encounter, research, and documentation. Assessment: Placement in ESLW 0315. Prerequisites: ESLG 0310 and ESLW 0310. Prerequisite/Concurrent enrollment: ESLG 0315. 3 credit hours.

Note: May not be used to satisfy the requirement for an associate degree.

FIRS 1301  Firefighter Certification I
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification II, III, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. Lab required. Prerequisite: Admission to the Program. 3 credit hours. (W)

FIRS 1313  Firefighter Certification III
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. Lab required. Prerequisite: FIRS 1407. 3 credit hours. (W)

FIRS 1319  Firefighter Certification IV
One is a series of courses in basic preparation for a new firefighter. Should be take in conjunction with Firefighter Certification I, II, III, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. Lab required. Prerequisite: FIRS 1313. 3 credit hours. (W)

FIRS 1323  Firefighter Certification V
One is a series of courses in basic preparation for a new firefighter. Should be take in conjunction with Firefighter Certification I, II, III, IV, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. Lab required. Prerequisite: FIRS 1319. 3 credit hours. (W)

FIRS 1329  Firefighter Certification VI
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, III, IV, V, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. Lab required. Prerequisite: FIRS 1323. 3 credit hours. (W)

FIRS 1407  Firefighter Certification II
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, III, IV, V, VI, and VII to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. Lab required. Prerequisite: FIRS 1301, or consent of Program Director. 4 credit hours. (W)

FIRS 1433  Firefighter Certification VII
One in a series of courses in basic preparation for a new firefighter. Should be taken in conjunction with Firefighter Certification I, II, III, IV, V, and VI to satisfy the Texas Commission on Fire Protection (TCFP) curriculum for Basic Structural Fire Suppression, Course #100. Prerequisite: FIRS 1329. 4 credit hours. (W)

FIRT 1301  Fundamentals of Fire Protection
Orientation to the fire service, career opportunities, related fields. 3 credit hours. (W)
FIRT 1315  Hazardous Materials I
The chemical characteristics and behavior of various materials. Storage, transportation, handling hazardous emergency situations, and the most effective methods of hazard mitigation. Lab recommended. 3 credit hours. (W)

FIRT 1327  Building Construction in the Fire Service
Components of building construction that relate to life safety. Includes relationship of construction elements and building design impacting fire spread in structures. 3 credit hours. (W)

FIRT 1338  Fire Protection Systems
Design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. Lab required. Prerequisite: FIRT 1301 or consent of Program Director. 3 credit hours. (W)

FIRT 1342  Fire Officer I
Requirements for Fire Officer I certification as established by the Texas Commission on Fire Protection. Prerequisite: FIRS 1433 or consent of Program Director. 3 credit hours. (W)

FIRT 1343  Fire Officer II
Requirements for Fire Officer II certification as established by the Texas Commission on Fire Protection. Prerequisite: FIRT 1342, and FIRT 2305, or consent of Program Director. 3 credit hours. (W)

FIRT 1349  Fire Administration II
In-depth study of fire service management as pertaining to budgetary requirements, administration, organization of divisions within the fire service, and relationships between the fire service and outside agencies. Prerequisite: FIRT 1301 or consent of Program Director. 3 credit hours. (W)

FIRT 2305  Fire Instructor I
Preparation of fire and emergency services personnel to deliver instruction from a prepared lesson plan. Includes the use of instructional aids and evaluation instruments to meet the Texas Commission of Fire Protection requirements for Fire Instruction I certification. Prerequisite: FIRS 1433. 3 credit hours. (W)

FIRT 2307  Fire Instructor II
Development of individual lesson plans for a specific topic including learning objectives, instructional aids, and evaluation instruments. Includes techniques for supervision and coordination of activities of other instructors to meet Texas Commission on Fire Protection requirements for Fire Instructor II certification. Prerequisite: FIRT 2305 or consent of Program Director. 3 credit hours. (W)

FIRT 2309  Firefighting Strategies and Tactics I
Analysis of the nature of fire problems and selection of initial strategies and tactics including an in-depth study of efficient and effective use of manpower and equipment to mitigate the emergency. Prerequisite: FIRT 1301 or consent of Program Director. 3 credit hours. (W)

FIRT 2351  Company Fire Officer
A capstone course covering fire ground operations and supervisory practices. Includes performance evaluation of incident commander, safety officer, public information officer, and shift supervisor duties. Lab required. Prerequisites: FIRT 1342, FIRT 1343, FIRT 2305, FIRT 2307, and FIRT 2309. 3 credit hours. (W)

FLMC 1301  History of Animation Techniques
A historical perspective of two-dimensional (2-D) and three-dimensional (3-D) animation. This class teaches students traditional forms of animation including cell, stop-motion and zoetropes. Students will also learn the history and evolution of the animation art form. Students will produce original animations utilizing traditional techniques as projects. 3 credit hours. (W)
**FLMC 1331  Video Graphics and Visual Effects I**  
Applications of computers for video production. Design of computer graphic workstations and development of a rationale for selecting software, hardware, and peripherals. Lab required. Prerequisites: ARTC 1302. 3 credit hours. (W)

**FLMC 2305  Film-Style 3-D Animation Production**  
Techniques in 3-D animation for film-style production. Lab required. Prerequisite: ARTV 2351 or consent of Instructor. 3 credit hours. (W)

**FLMC 2331  Video Graphics and Visual Effects II**  
Designing vector and raster graphics; executing rendering techniques; designing and producing three-dimensional (3-D) materials; and selecting hardware, software, and peripherals for video production. Lab required. Prerequisite: ARTV 2355. 3 credit hours. (W)

**FREN 1100  French Conversation I**  
Intensive practice in spoken French. Prerequisite: FREN 1412 or consent of Instructor or Department Chair. Corequisite: FREN 2311. 1 credit hour.

**FREN 1110  French Conversation II**  
Continuation of FREN 1100. Prerequisite: FREN 1100 or consent of Instructor or Department Chair. Corequisite: FREN 2312. 1 credit hour.

**FREN 1411  Beginning French I**  
Introduction to the basic skills of speaking, reading, writing, and listening with attention to selected aspects of French culture; designed for students with little or no previous language training. Instruction is enhanced by the use of tapes, slides, and video cassettes. 4 credit hours.

**FREN 1412  Beginning French II**  
Continuation of FREN 1411. Prerequisite: FREN 1411 or consent of Instructor or Department Chair. 4 credit hours.

**FREN 2303  French Literature I**  
Survey of French literature in its historical context from the 16th century through the 18th century. Continued practice in basic language skills. Reading of selected writers such as Ronsard, Moliere, and Voltaire. Prerequisite: FREN 2312 or consent of Instructor or Department Chair. 3 credit hours.

**FREN 2304  French Literature II**  
Survey of French literature in the 19th and 20th centuries with reading from representative writers such as Hugo, Baudelaire, and Camus. Prerequisite: FREN 2312 or consent of Instructor or Department Chair. 3 credit hours.

**FREN 2311  Intermediate French I**  
Continued development of the four basic language skills with increased attention to reading and writing. Instruction enhanced by slides, tapes, and other audio-visual aids. Prerequisite: FREN 1412 or consent of Instructor or Department Chair. Corequisite: FREN 1100. 3 credit hours.

**FREN 2312  Intermediate French II**  
Continuation of FREN 2311. Prerequisite: FREN 2311 or consent of Instructor or Department Chair. Corequisite: FREN 1110. 3 credit hours.

**GAME 1303  Introduction to Game Design and Development**  
Introduction to electronic game development and game development careers. Includes examination of history and philosophy of games, the game production process, employee factors for success in the field, and current issues and practices in the game development industry. Lab required. Prerequisite: ARTV 1345 or consent of Instructor or Department Chair. 3 credit hours. (W)
GAME 1304  Level Design
Introduction to the tools and concepts used to create levels for games and simulations. Incorporates level design, architecture theory, concepts of critical path and flow, balancing, play testing, and storytelling. Includes utilization of toolsets from industry titles. Lab required. Prerequisite: GAME 1303. 3 credit hours. (W)

GAME 2342  Game Development Using C++
Skill development in C++ programming for games and simulations. Examines real-world C++ development issues including those for real time programming. Lab required. Prerequisite: COSC 1437 or consent of Department Chair. 3 credit hours. (W)

GAME 2344 DirectX Programming Using C++
Exploration of the advanced suite of multimedia application programming interfaces (API) built into the Microsoft Windows operating system. Examples will be in the C++ programming language. Lab required. Prerequisite: COSC 1437. 3 credit hours. (W)

GAME 2359  Game and Simulation Group Project
Creation of a game and/or simulation project utilizing a team approach. Includes the integration of design, art, audio, programming, and quality assurance. Lab required. Prerequisite: GAME 1304. 3 credit hours. (W)

GAME 2386  Internship-Animation, Interactive Technology, Video Graphics and Special Effects
A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: ARTV 1341. 3 credit hours. (W)

GEOG 1301  Physical Geography
Exploration of the physical environment; emphasis on climates, land forms, vegetation, and spatial relationships of selected geographical regions of the world. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

GEOG 1302  Cultural Geography
Examination of the cultural and economic environment; emphasis on origins, diffusion, and distribution of races, religions, and languages. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

GEOG 1303  World Regional Geography
Study of major developed and developing regions with emphasis on awareness of prevailing world conditions and situations. Includes emerging conditions and trends and awareness of the diversity of ideas and practices to be found in those regions. May be used to meet three semester hours of social science elective requirement for education certification in public school teaching. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

GEOL 1305  Natural Disasters
Understanding the causes and effects of natural disasters such as earthquakes, volcanic eruptions, landslides, floods, land subsidence, coastal hazards, etc., and what we can do to mitigate, predict, control, and prevent these catastrophic events. Assessment: Placement in ENGL 1301; MATH 0310; College-Level Reading. 3 credit hours.
Note: Students may take either GEOL 1305 or GEOL 1405 but not both.

GEOL 1401  Earth Science
For the non-science major. Introduces the concepts of earth processes and their relation to man, including basic principles from physical and historical geology, oceanography, astronomy, and meteorology. Lab required. Assessment: Placement in ENGL 1301; MATH 0310; College-Level Reading. 4 credit hours.
GEOL 1402  Dinosaurs!
Examines evolution, ecology, and extinction of the dinosaurs from a physical and historical geology perspective. Comparative anatomy is emphasized. Dinosaur controversies will be examined in light of recent evidence. Field trips and class projects will focus on dinosaur families and habitats. Lab required. Assessment: Placement in ENGL 1301; MATH 0310; College-Level Reading. 4 credit hours.

GEOL 1403  Physical Geology
A basic geology course covering a variety of topics: rocks and minerals, weathering and soils, rivers, sea coasts and ocean floors, deserts, volcanism, plate tectonics, mountain building, earthquakes and topographic maps. Lab required. Assessment: Placement in ENGL 1301; MATH 0310; College-Level Reading. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

GEOL 1404  Historical Geology
An introduction to the earth and its inhabitants as revealed in rocks and fossils. Brief survey of the plant and animal kingdoms, elementary principles of stratigraphy, and a systematic study of the development of the earth from its origin as a planet to the present. Lab required. Prerequisite: GEOL 1401 or GEOL 1403. 4 credit hours.

GEOL 1405  Environmental Geology
Study of geologic constraints upon human activities and the environmental consequences of such activities. It includes mass movements, flooding, earthquakes, and volcanic hazards. Emphasis also includes the environmental aspects of the development of water, energy, and mineral resources. Lab required. Prerequisite: ENVR 1401 or GEOL 1401 or GEOL 1403. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

Note: Students may take either GEOL 1305 or GEOL 1405 but not both.

GEOL 1445  Oceanography
A study of the various aspects of the ocean, including origins of the ocean, earth's ocean, plate tectonics, ocean sediments, the chemistry of seawater, oceans and climates, currents, waves, tides, coastal features, oceanic ecosystems, protection of coastal areas, and resources of the oceans. Lab required. Assessment: Placement in ENGL 1301; MATH 0310; College-Level Reading. 4 credit hours.

GEOL 1447  Introduction to Meteorology
An examination of the Earth's atmosphere, global climate, and associated environmental factors. Includes lab exercises in weather tracking on Weather-Net computer system. Lab required. Assessment: Placement in ENGL 1301; MATH 0310; College-Level Reading. 4 credit hours.

GEOL 2389  Academic Co-op Geology
Integrates on-campus study with practical hands-on work experience in geology. In conjunction with class seminars, the student will set specific goals and objectives in the study of geology. Contact the Cooperative Work Experience Office. 3 credit hours.

GERM 1100  Conversational German I
Intensive practice in spoken German. Prerequisite: GERM 1412 or consent of Instructor or Department Chair. Corequisite: GERM 2311. 1 credit hour.

GERM 1110  Conversational German II
Continuation of GERM 1100. Prerequisite: GERM 1100, or consent of Instructor or Department Chair. Corequisite: GERM 2312. 1 credit hour.
**GERM 1411  Beginning German I**  
Introduction to the basic skills of speaking, reading, writing, and listening; designed for students with little or no previous language training. Includes attention to selected aspects of German civilization. Instruction enhanced by the use of tapes, slides, and video cassettes. 4 credit hours.

**GERM 1412  Beginning German II**  
Continuation of GERM 1411 with an emphasis on the reading of elementary texts. Prerequisite: GERM 1411 or consent of Instructor or Department Chair. 4 credit hours.

**GERM 2311  Intermediate German I**  
Continued development of the four basic language skills with increased attention to reading and writing. Instruction enhanced by the use of tapes, slides, and other audio-visual aids. Prerequisite: GERM 1412 or consent of Instructor or Department Chair. Corequisite: GERM 1100. 3 credit hours.

**GERM 2312  Intermediate German II**  
Continuation of GERM 2311. Prerequisite: GERM 2311, or consent of Instructor or Department Chair. Corequisite: GERM 1110. 3 credit hours.

**GISC 1311  Introduction to Geographic Information Systems (GIS)**  
Introduction to basic concepts of vector GIS using several industry specific software programs including nomenclature of cartography and geography. By the end of the course, students will have sufficient background so that with on-the-job experience they can become expert users of GIS in organizations - building, managing, and using GIS maps and data. Lab required. Prerequisite: BCIS 1305 or COSC 1300 or consent of Instructor or Department Chair. 3 credit hours. \((W)\)

**GISC 2231  Advanced Problems in Geographic Information Systems (GIS)**  
Seminar/Capstone course designed for the final semester of a degree or certificate in Geographic Information Systems (GIS). Projects will include individual and group studies of GIS applications using the skills acquired in previous courses. The student will produce a professional project and present the results to a panel consisting of peers, instructors, or practicing GIS professionals. Lab required. Prerequisite: GISC 2420. 2 credit hours. \((W)\)

**GISC 2420  Intermediate Geographic Information Systems (GIS)**  
This course focuses on the study of spatial data structures and the display, manipulation, and analysis of geographic information. Students will study the technical aspects involved in spatial data handling, analysis, and modeling. Instruction will include theories and procedures associated with the implementation and management of GIS projects. A variety of GIS software packages will be used in the laboratory. Lab required. Prerequisites: GISC 1311 and ITSW 1307. 4 credit hours. \((W)\)

**GOVT 2301  American Government I**  
Introduction to politics and government in the United States. Includes the origin and development of constitutional democracy in the United States, emphasizing the constitutions of the State of Texas and the United States, federalism and intergovernmental relations, local government, and the political process. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.  
*Note: Students transferring a government course from out-of-state must enroll in this course to complete the Texas legislative requirement.*

**GOVT 2302  American Government II**  
Examines the institutional structures of government at both national and state levels, including the legislative process, executive and bureaucratic structures, and judicial process. Explores civil rights and civil liberties, domestic policy, foreign relations, and national defense. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.
GOVT 2304  Introduction to Political Science
Introduction to the history and methods of political science. Examines basic concepts of politics and political behavior, provides overview of the history of the discipline, explores scope and methods of political inquiry, and explores basic models of politics that operate in the modern world. This course does not apply toward the Texas legislative requirement of 6 credit hours of American government for a bachelor’s degree. Prerequisite: Consent of Instructor. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

GOVT 2311  Mexican-American Politics
This course explores the impact of Mexican-Americans on U. S. politics and political institutions and public policy. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

GOVT 2389  Academic Co-op Government
Integrates on-campus study with practical hands-on work experience in government. In conjunction with class seminars, the student will set specific goals and objectives in the study of government. Contact the Cooperative Work Experience Office. Prerequisite: Consent of Instructor. Assessment: Placement in ENGL 1301. 3 credit hours.

GRPH 1359  Vector Graphics for Production
A study and use of vector graphics for production. 3 credit hours. (W)

GRPH 1380  Cooperative Education-Pre-Press/Desktop Publishing and Digital Imaging Design
Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

HAMG 1313  Front Office Procedures
Functions of front office operations as they relate to customer service. Includes a study of front office interactions with other departments in the lodging operation. 3 credit hours. (W)

HAMG 1319  Computers in Hospitality
An introduction to computers and their relationship as an information system to the hospitality industry. The course includes an overview of industry-specific software. 3 credit hours. (W)

HAMG 1321  Introduction to Hospitality Industry
Introduction to the elements of the hospitality industry. 3 credit hours. (W)

HAMG 1324  Hospitality Human Resources Management
Principles and procedures of human resource management in the hospitality industry. 3 credit hours. (W)

HAMG 1340  Hospitality Legal Issues
A course in legal and regulatory requirements that impact the hospitality industry. Topics include Occupational Safety and Health Administration (OSHA), labor regulations, tax laws, tip reporting, franchise regulations, and product liability laws. 3 credit hours. (W)

HAMG 1380  Cooperative Education-Hospitality Administration/Management, General
Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)
HAMG 2301  Principles of Food and Beverage Operations
An introduction to food and beverage management in various hospitality environments. Emphasizes cost controls from procurement to marketing and sales. Examines forecasting, menu planning and pricing, logistical support, production, purchasing, and quality assurance. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

HAMG 2305  Hospitality Management and Leadership
An overview of management and leadership in the hospitality industry with an emphasis on management philosophy, policy formation, communications, motivation, and team building. 3 credit hours. (W)

HAMG 2307  Hospitality Marketing and Sales
Identification of the core principles of marketing and sales and their impact on the hospitality industry. 3 credit hours. (W)

HAMG 2332  Hospitality Financial Management
Methods and applications of financial management within the hospitality industry. Primary emphasis on sales accountability, internal controls, and report analysis. 3 credit hours. (W)

HAMG 2337  Hospitality Facilities Management
Identification of building systems, facilities and sustainability management, and security and safety procedures. 3 credit hours. (W)

HAMG 2380  Cooperative Education-Hospitality Administration/Management, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

HART 1475  Solar Cell and Array Certification Training
Review of Solar Cell and Array concepts and principles in preparation for sitting for a certification examination administered by an outside organization or agency. The course includes National and Local Electrical Code requirements. Lab required. Prerequisites: CETT 1403 and MATH 1314, or consent of Program Director. 4 credit hours. (W)

HART 2472  Alternative Energy Perspectives, Energy Sources, Energy Storage, and Energy Distribution
The course covers principles of alternative/renewable energy technologies (e.g. Solar Electrical Energy Generation, Solar Thermal Energy Generation, Wind Energy Generation, Geo-Thermal Energy Generation). Each alternative is placed in the proper context of the energy equation. Traditional energy sources (e.g. coal, oil, natural gas, hydropower, nuclear) are described and contrasted so that the student sees costs and benefits of both alternative and traditional energy sources. Energy Storage and Energy Distribution is covered as it pertains to each energy technology. Lab required. Prerequisites: MATH 1314 and SMFT 1471, or consent of Program Director. 4 credit hours. (W)

HECO 1307 Personal Finance
Formerly BUSI 1307
Personal financial issues including financial planning, insurance, budgeting, credit, home ownership, savings and tax problems. Lab required. 3 credit hours.
HIST 1301    U.S. History I
History of the United States with focus on development of American characteristics and institutions, including the forging of a new society from European, African, and American cultures. Emphasis on colonial and early national periods through the Civil War and Reconstruction. Students must take 6 credit hours of HIST 1301, HIST 1302, or HIST 2301 to fulfill the Texas legislative requirement for history. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

HIST 1302    U.S. History II
History of the United States from 1877 to the present. Focus on the development of American society in the 20th century, response to the urban-industrial environment, the United States as a world power, and post-World War II society. Students must take 6 credit hours of HIST 1301, HIST 1302, or HIST 2301 to fulfill the Texas legislative requirement for history. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

HIST 2301    History of Texas
History of Texas from the Spanish period to the present. Emphasis on the period of Anglo-American settlement, revolution, Republic, and the development of the modern state. Students must take 6 credit hours of HIST 1301, HIST 1302, or HIST 2301 to fulfill the Texas legislative requirement for history. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

HIST 2311    Western Civilization I
European civilization from ancient times through the Reformation, including Greece and Rome, the development of the Christian Church, medieval culture, the rise of the nation-state, the Commercial Revolution, Renaissance, and the early European empire. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

HIST 2312    Western Civilization II
European civilization from 16th century to the present, including the Wars of Religion, the Enlightenment, the Age of Revolution (scientific, national and industrial), the rise of nationalism, the New Imperialism, the culture of modernity, and 20th century mass politics and world wars. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

HIST 2321    World Civilizations I
Survey of ancient and medieval history, with emphasis on Asian, African and Mediterranean cultures, including the interplay of cultural, economic and religious and political systems from earliest times to 1450. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

HIST 2322    World Civilizations II
Survey of modern world history, with emphasis on Asian, African, American, and European cultures, including the interplay of cultural and economic forces, political and religious forms, across the globe since 1450. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

HIST 2327    Mexican-American History I
This course is a survey of the political, economic, social and cultural history of Mexicans in North America from the pre-Colombian Era through 1850, with emphasis on the Mexican-American War with the United States. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

HIST 2328    Mexican-American History II
This course is a survey of the political, economic, social and cultural history of Mexicans in North America from 1850 to present, with emphasis on the Mexican-American cultural identity and the Civil Rights Movement in the United States. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.
HITT 2381非洲裔美国历史
历史、经济、社会和文化发展与少数群体有关，强调了非洲裔美国人在美国从殖民时代到现代的经历。评估：英语1301级阅读。3学分。

HITT 2389学术Co-op History
本课程以校园学习与实践的动手工作经验为背景。与课堂研讨会相结合，个体学生将设定具体的目标和目标。联系工作体验办公室。先修条件：课程指导。1学分。

HITT 1160临床I - 医疗信息/医疗记录技术
一个基于工作的学习经历，使学生能够应用职业理论，技能，和概念。直接的监督由临床专业人员提供。先修条件：课程指导。1学分。(W)

HITT 1255医疗保健统计
医疗保健统计课程与医院统计课程有关。开发计算和计算数据的能力。评估：数学1314级。2学分。(W)

HITT 1266医疗记录技术/技师
实践性的，全面的职场培训支持由雇主，学院，和学生制定的个性化学习计划。指导的外部经验可能是有偿或无偿的。先修条件：课程指导。2学分。(W)

HITT 1301医疗数据内容和结构
引介系统和过程的收集，保持，和传播。初级和次级与健康相关的信息，包括健康记录内容，文档要求，注册，索引，许可，监管机构，形式，和屏幕在电子和纸质医疗记录中使用。先修条件/同时登记：SRGT 1301。3学分。(W)

HITT 1311计算机与医疗保健
计算机技术与医疗保健有关。要求实验室。3学分。(W)

HITT 1342初步门诊编码
基本门诊编码规则，惯例和指导方针。要求实验室。先修课程：HITT 1301，POFM 1300和SRGT 1301。先修条件/同时登记：BIOL 2404 (或BIOL 2402)。3学分。(W)

HITT 1345医疗保健服务系统
引介组织，融资，和交付医疗保健服务，认证，执照，和监管机构。本课程覆盖替代医疗保健服务系统。3学分。(W)

HITT 2245编码认证考试回顾
编码认证考试的技能和技巧的复习。课程专注于培养通过独特的课程材料的技能，以达到通过编码认证考试的目的。因此，课程的大部分内容涉及到复习和测试。2学分。(W)

HITT 2249 RHIT认证回顾
回顾健康信息技术(RHIT)技能，知识和先修条件：HITT 2361或课程指导。2学分。(W)

HITT 2339医疗信息组织与监督
医疗信息组织和监督的原理。也包括电子记录的健康信息。先修课程：HITT 1301，HPRS 1271和SRGT 1301。3学分。(W)

2010-2011课程描述
HITT 2343   **Quality Assessment and Performance Improvement**  
Study of quality standards and methodologies in the health information management environment. Topics include licensing, accreditation, compilation and presentation of data in statistical formats, quality management and performance improvement functions, utilization management, risk management, and medical staff data quality issues. Prerequisite: HITT 1255. 3 credit hours. *(W)*

HITT 2346   **Advanced Medical Coding**  
ICD and CPT coding rules, conventions, and guidelines in complex case studies. Investigation of government regulations and changes in health care reporting. Electronic encoder use covered and information about ICD-10. Prerequisites: POFM 1300 and SRGT 1301. 3 credit hours. *(W)*

HITT 2361   **Clinical II-Health Information/Medical Records Technology**  
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Students should take this course in their final semester. Prerequisites: HITT 1160 and consent of Program Director. 3 credit hours. *(W)*

HPRS 1204   **Basic Health Profession Skills**  
A study of the concepts that serve as the foundation for health profession courses, including client care and safety issues, basic client monitoring, and health documentation methods. Lab required. 2 credit hours. *(W)*

HPRS 1271   **Introduction to the Healthcare System**  
An overview of roles of various members of the healthcare system and their educational requirements, and issues affecting the delivery of healthcare. Additional concepts explored include the healthcare system, the continuum of care, levels of care, length of stay, healthcare providers, legal and ethical aspects of healthcare, reimbursement, healthcare policy determination and health insurance and managed care. 2 credit hours. *(W)*

HPRS 2300   **Pharmacology for Health Professions**  
A study of drug classifications, actions, therapeutic uses, adverse effects, routes of administration, and calculation of dosages. 3 credit hours. *(W)*

HPRS 2301   **Pathophysiology**  
Study of the pathology and general health management of diseases and injuries across the life span. Topics include etiology, symptoms, and the physical and psychological reactions to diseases and injuries. 3 credit hours. *(W)*

HPRS 2321   **Medical Law and Ethics for Health Professionals**  
Principles, procedures, and regulations governing the legal and ethical relationships among physicians, patients, and health care professionals. Includes current ethical issues related to the various healthcare professions and patient confidentiality. 3 credit hours. *(W)*

HPRS 2371   **The Case Management Process**  
Principles, concepts, process, roles, settings, and clinical practice of healthcare case managers are reviewed with a focus on standards of practice, managed care, quality of care and cost containment. Legal and ethical considerations and evidence-based practice are applied to case-based scenarios. Prerequisite: Awarded an AAS or BS in Nursing or current certification or licensure in a healthcare field of profession. 3 credit hours. *(W)*

HPRS 2372   **Case Management Coordination and Financial Management**  
The concept of coordination of care is studied within the case management continuum of care. Identification, availability, and cost of available resources of care are explored. A case management resource path is developed for a specific disease, condition or injury. Prerequisite/Concurrent enrollment: HPRS 2371. 3 credit hours. *(W)*
HPRS 2373  Case Studies in Healthcare Case Management
Case-based scenarios are used to provide student experience in healthcare case management. Students develop plans of care for cases in selected fields of clinical practice. Prerequisite: Consent of Instructor. Prerequisite/Concurrent enrollment: HPRS 2371 and HPRS 2372. 3 credit hours. (W)

HPRS 2374  Physiopathology
Formerly HPRS 2201
The study of pathophysiological processes underlying human illness. Basic principles and processes covered will include such topics as cellular communication, genetic diseases, immune response, mechanism of infection, fluid and electrolyte disturbances, and tumor biology. A focus on specific body systems and common disorders will emphasize the etiology, clinical manifestation of symptoms, the body's response to altered health states and injury, and the management of diseases across the life span including diagnostic procedures, preventative measures, and current therapeutic regimes. Lab experience provides demonstration of pathological findings of disease. Lab required. Prerequisites: BIOL 2401 and BIOL 2402. 3 credit hours. (W)

HRPO 1302  Human Resource Training and Development
An overview of human resource training and development as related to organizational mission and goals. 3 credit hours. (W)

HRPO 2301  Human Resources Management
Behavioral and legal approaches to the management of human resources in organizations. 3 credit hours. (W)

HRPO 2304  Employee Relations
An examination of policies, practices, and issues required to build strong employee relations. Topics include communications, employee conduct rules, performance appraisal methods, Title VII, Family Medical Leave Act, Fair Labor Standards Act, and Americans with Disabilities Act updates. 3 credit hours. (W)

HRPO 2307  Organizational Behavior
The analysis and application of organizational theory, group dynamics, motivation theory, leadership concepts, and the integration of interdisciplinary concepts from the behavioral sciences. 3 credit hours. (W)

HRPO 2331  International Human Resource Management
A study of the effects of globalization on human resource management. 3 credit hours. (W)

HRPO 2381  Cooperative Education-Human Resources Management/Personnel Administration, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

HUMA 1301  Introduction to the Humanities
Introduction to the Humanities focuses on the study and appreciation of representative examples of visual and performing arts, literature, music and religion of various world cultures. The exploration of interrelationships of the arts and their philosophies emphasizes the nature of humankind and the need to create. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

HUMA 1305  Introduction to Mexican-American Studies
Introduction to the field of Mexican-American/Chicano/a Studies investigates the field from its inception to the present. This interdisciplinary survey is designed to introduce students to the salient cultural, economic, educational, historical, political, and social aspects of the Mexican-American/Chicano/a experience. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.
HUMA 1311  Mexican-American Fine Arts Appreciation
An examination of Mexican-American/Chicano/a artistic expressions in the visual and performing arts. The course will deal with the exploration of the artistic forms that make up sensibilities of the contemporary Mexican-American artist. Includes a survey of Mexican art from pre-Columbian times to the present, including Chicano folk and contemporary art, study of the styles and methods of Mexican-American music and dance. 3 credit hours.

HUMA 2319  Cultural Identity in the U.S.
Emphasizes the cultural, historic, social, and/or economic aspects of various U.S. cultures. Explores human values from perspectives such as national origin, language, race, and religion. May investigate these values through art, performance, and intellectual life. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.
Note: This course may be repeated once for credit with a change in content for a total of 6 credit hours.

HUMA 2323  World Cultures
Study of human cultures throughout history. Addresses the various guises and manifestations of individual and cultural identity as expressed in the artistic, performative, and intellectual lives of peoples throughout the world. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.
Note: Students may take either ANTH 2346 or HUMA 2323 for credit but not both.

IBUS 1300  Global Logistics Management
Global logistics, management processes, procedures, and regulations used in transportation, physical distribution, warehousing, inventory control, materials handling, packaging, plant and warehouse location, risk management, customer service, and networks for logistics, suppliers, and information. Includes decision making and case resolution techniques to solve problems and to develop logistical and information networks for supply chain management appropriate for global corporations. 3 credit hours. (W)

IBUS 1301  Principles of Exports
Export management processes and procedures. Includes governmental controls and compliance, licensing of products, documentation, commercial invoices, and traffic procedures. Emphasizes human and public relations, management of personnel, finance, and accounting procedures. 3 credit hours. (W)

IBUS 1302  Principles of Imports
Practices and processes of import management operations which may include such factors as government controls and compliance. Emphasizes the preparation and understanding of import documents such as customs invoices, packing lists, and commercial invoices. 3 credit hours. (W)

IBUS 1305  Introduction to International Business and Trade
The techniques for entering the international marketplace. Emphasis on the impact and dynamics of sociocultural, demographic, economic, technological, and political-legal factors in the foreign trade environment. Topics include patterns of world trade, internationalization of the firm, and operating procedures of the multinational enterprise. 3 credit hours. (W)

IBUS 1341  Global Supply Chain Management
International purchasing or sourcing. Includes the advantages and the barriers of purchasing internationally, global sourcing, procurement technology, and purchasing processes. Emphasizes issues of contract administration, location, and evaluation of foreign suppliers, total cost approach, exchange fluctuations, customs procedures, and related topics. 3 credit hours. (W)

IBUS 1354  International Marketing Management
Analysis of international marketing strategies using market trends, costs, forecasting, pricing, sourcing, and distribution factors. Development of an international marketing plan. 3 credit hours. (W)
IBUS 1380  Cooperative Education-International Business/Trade/Commerce
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

IBUS 2341  Intercultural Management
Cross-cultural comparisons of management and communications processes. Emphasizes cultural ethnic geographic distinctions and antecedents that affect individual, group, and organizational behavior. May include sociocultural demographics, economics, technology, political-legal issues, negotiations, and processes of decision making in the international cultural environment. 3 credit hours. (W)

IBUS 2345  Import Customs Regulations
Duties and responsibilities of the licensed customs broker such as processes for customs clearance including appraisement, bonded warehouse entry, examination of goods, harmonized tariffs, fees, bonding, penalties, quotas, immediate delivery, consumption, and liquidation, computerized systems, laws, and regulations. 3 credit hours. (W)

IBUS 2381  Cooperative Education-International Business/Trade/Commerce
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

IFWA 1310  Nutrition and Menu Planning
Application of principles of nutrition in planning menus for the food service industry. 3 credit hours. (W)

IMED 1301  Introduction to Digital Media
A survey of the theories, elements, and hardware/software components of digital media. Emphasis on conceptualizing and producing digital media presentations. The focus of the class is interface design, including: color theory, typography, graphics, layout, and interactive design. 3 credit hours. (W)

IMED 1316  Web Design I
Instruction in web design and related graphic design issues including mark-up languages, web sites and browsers. Prerequisites: ARTC 1302 or PHTC 1300; and ARTC 1325 or consent of Instructor. 3 credit hours. (W)

IMED 1341  Interface Design
Skill development in the interface design process including selecting interfaces relative to a project's content and delivery system. Emphasis on aesthetic issues such as iconography, screen composition, colors, and typography. Prerequisite: ITSE 1311 or consent of Instructor or Department Chair. 3 credit hours. (W)

IMED 1345  Interactive Digital Media I - Flash
Exploration of the use of graphics and sound to create interactive digital media applications and/or animations using industry standard authoring software. 3 credit hours. (W)

IMED 2309  Internet Commerce
An overview of the Internet as a marketing and sales tool with emphasis on developing a prototype for electronic commerce. Lab required. Prerequisite: ITSE 1311 or consent of Instructor or Department Chair. 3 credit hours. (W)

IMED 2311  Portfolio Development
Preparation and enhancement of portfolio to meet professional standards, development of presentation skills, and improvement of job-seeking techniques. Lab required. 3 credit hours. (W)
IMED 2315  Web Design II
A study of mark-up language advanced layout techniques for creating web pages. Emphasis on identifying the target audience and producing web sites according to accessibility standards, cultural appearance, and legal issues. Lab required. Prerequisite: IMED 1316. 3 credit hours. (W)

IMED 2345  Interactive Digital Media II - Flash II
Instruction in the use of scripting languages to create interactive digital media applications. Advanced use of graphics and sound to create interactive multimedia animations using industry standard authoring software. Prerequisite: IMED 1345 or consent of Instructor or Department Chair. 3 credit hours. (W)

IMED 2349  Internet Communications
Web server software installation, configuration, and maintenance. Includes scripting, website planning, testing, security, production, and marketing. Lab required. Prerequisite: IMED 1316 or consent of Instructor. 3 credit hours. (W)

INDS 1271  Perspectives on Sustainable Living and Environmentally Conscious Building
The course provides a forum for discussion of perspectives on the principles involved in Sustainable Living and Environmentally Conscious Building. 2 credit hours. (W)

INDS 1280  Cooperative Education-Interior Design-Green Design
Career related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 2 credit hours. (W)

INDS 1301  Basic Elements of Design
A study of basic design concepts with projects in shape, line, value, texture, pattern, spatial illusion, and form. Lab required. 3 credit hours. (W)

INDS 1315  Materials, Methods and Estimating
A study of materials, methods of construction and installation, and estimating for interior design applications. Lab required. Prerequisite: IND 1301 or consent of Program Director. 3 credit hours. (W)

INDS 1319  Technical Drawing for Interior Designers
An introduction to reading and preparing technical construction drawings for interior design, including plans, elevations, details, schedules, dimensions and lettering. Both manual and AutoCAD plans will be generated. Lab required. Prerequisite: DFTG 1309. 3 credit hours. (W)

INDS 1341  Color Theory and Applications
A study of color theory and its applications to interior design. Actual interior design will be given that will involve applying various color systems, with emphasis on Munsell. The student will learn mixing techniques to gain desired hue; value and chroma (intensities) for solving design color schemes. Color psychology and phenomena will be investigated. The students will be introduced to elements and principles of design and will learn to achieve balance, rhythm, emphases, harmony, and variety through the use of color. Additive and subtractive color mixing, and relationship of light will be examined. Lab required. 3 credit hours. (W)

INDS 1345  Commercial Design I
A study of design principles applied to furniture layout and space planning for commercial interiors. Lab required. Prerequisites: DFTG 1309, IND 1301, IND 1319, IND 1341, IND 1371, and IND 2313. 3 credit hours. (W)
INDS 1351  History of Interiors I
Historical survey of antiquities and European styles and periods of architecture, interiors, and furnishings. With consideration of Egypt, Greece, Italy, Spain, and France. Lab required. 3 credit hours. (W)

INDS 1352  History of Interiors II
Historical survey of English, American, Asian, and 20th Century styles and periods of architecture, interiors, and furnishings. Lab required. Prerequisite: INDS 1351. 3 credit hours. (W)

INDS 1371  Introduction to Green Design
A general study of Green Design and sustainable environment. Explore the basic principles of Green/Sustainable Design including passive solar, alternative energy, green water technology, recycling, green building certification outline, and interior air quality in built environment. Lab required. 3 credit hours. (W)

INDS 1372  Computer-Aided Drafting for Interior Designers
An introduction to computer-aided drafting. Emphasis is placed on setup; general knowledge of CAD software; reading basic blueprint; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinating systems; and plot/print to scale; interior furniture layouts. Lab required. 3 credit hours. (W)

INDS 1373  Green Interiors I
Course introduces students to Green interior design and built environment. Emphasis is placed on: analyzing Indoor Air Quality, green interior material and finishes, green cleaning materials, and providing plans and solutions for creating a healthier interior environment. Lab required. Prerequisite: ITSE 1371. 3 credit hours. (W)

INDS 1375  Green Building Certification Training
The course provides a review of Green Building Certification and the Principles involved in Green Building Certification in preparation for sitting for a certification examination administered by an outside organization or agency. Prerequisites: DFTG 1309 and INDS 1371. 3 credit hours. (W)

INDS 1380  Cooperative Education - Interior Design
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

INDS 2307  Textiles for Interior Design
The study of interior design textiles including characteristics, care, codes, and applications. Prerequisites: DFTG 1309, INDS 1301, and INDS 1341 or consent of Program Director. 3 credit hours. (W)

INDS 2313  Residential Design I
The study of residential spaces, including the identification of client needs, programming, standards, space planning, drawings, and presentations. Lab required. Prerequisites: DFTG 1309, INDS 1301, and INDS 1341. 3 credit hours. (W)

INDS 2315  Lighting for Interior Designer
Fundamentals of lighting design, including lamps, luminaries, lighting techniques, and applications for residential and commercial projects. Lab required. 3 credit hours. (W)

INDS 2330  Interior Design Building Systems
An overview of building materials, mechanical systems, and construction techniques as applied to interior design. Discussion of codes, project sequencing and the interpretation of detailed working drawings. Lab required. Prerequisite: INDS 1345 or consent of Program Director. 3 credit hours. (W)
INDS 2335  Residential Design II
A comprehensive study of complex residential interior design problems, including advanced space planning, documentation, specifications, budgets, and presentation renderings. Lab required. Prerequisites: DFTG 2319, INDS 1319, and INDS 2313, or consent of Program Director. 3 credit hours. (W)

INDS 2373  Green Interiors II
This advanced course focuses on Green interior design and built environment. Emphasis is placed on: analyzing recycling contents and procedures, basic knowledge of LEED (Leadership in Energy and Environment Design) certification process, and selecting green materials to retrofit the existing interior materials. Lab required. Prerequisite: INDS 1373. 3 credit hours. (W)

INDS 2374  Sustainable Living
The course provides an introduction to sustainable thinking toward Green Built Environment. Emphasis is placed on: analyzing the Indoor Environment Quality, the effects of Indoor Air Quality on health and the well being of the occupants. The course strives to evaluate the relationship between humans and natural resources. Lab required. Prerequisites: DFTG 1309, INDS 1371, and INDS 1373. 3 credit hours. (W)

INEW 2330  Comprehensive Software Project: Planning and Design
A comprehensive application of skills learned in previous courses in a simulated workplace. Covers the development, testing, and documenting of a complete software and/or hardware solution. This course may be used as a capstone course for a certificate or degree. Prerequisite: Consent of Instructor. 3 credit hours. (W)

INEW 2334  Advanced Web Programming - ASP.NET
Web programming using industry-standard languages and data stores. Topics may include Perl Scripts, Common Gateway Interface (CGI), Database Interaction, Active Server Pages, Java Applets, JavaScripts, tables, HTML, and/or interactive elements. Students will build, implement, and execute fully functional, fully-interactive, dynamic web applications using Active Server Pages (ASP) and other technologies. Prerequisites: COSC 1315 and ITSE 1311 or consent of Instructor or Department Chair. 3 credit hours. (W)

INEW 2338  Advanced Java Programming
A continuation of Java programming techniques such as servlets, and advanced graphical functions. Topics cover the Java 2 Platform, Enterprise Edition (J2EE) which defines the standard for developing component-based multi-tier enterprise applications. The focus of this class will be on development of Java Servlets and Java Server Pages (JSPs). Prerequisite: COSC 1337 or ITSE 2317 or consent of Instructor or Department Chair. 3 credit hours. (W)

INEW 2340  Object-Oriented Design
A study of large system analysis and design concepts from the object-oriented perspective. Includes determining required objects and their interfaces. Also covers relationships between objects. Lab required. Prerequisite: COSC 1337 or COSC 1437 or consent of Department Chair. 3 credit hours. (W)

INMT 1417  Industrial Automation
A study of the applications of industrial automation systems including identification of system requirements, equipment integration, motors, controllers, and sensors. Coverage of setup, maintenance, and testing of the automated system. Lab required. 4 credit hours. (W)

INTC 1305  Introduction to Instrumentation
A survey of the instrumentation field and the professional requirements of the instrumentation technician. Lab required. 3 credit hours. (W)

INTC 1307  Electronic Test Equipment
Theory and application of instrumentation test equipment. Emphasizes accuracy, limitations of instruments, and calibration techniques. Lab required. 3 credit hours. (W)
ITAL 1411  Beginning Italian I  
Introduction to the basic skills of speaking, reading, writing, and listening. Intended for students with little or no previous training in Italian. 4 credit hours.

ITAL 1412  Beginning Italian II  
Continuation of ITAL 1411. Prerequisite: ITAL 1411 or consent of Instructor or Department Chair. 4 credit hours.

ITCC 1301  CCNA 1 Cisco Exploration 1 - Network Fundamentals  
A course introducing the architecture, structure, functions, components, and models of the internet. Describes the use of OSI and TCP layered models to examine the nature and roles of protocols and services at the applications, network, data link, and physical layers. Covers the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations. Build simple LAN topologies by applying basic principles of cabling; perform basic configurations of network devices, including routers and switches; and implementing IP addressing schemes. Lab required. 3 credit hours. (W)

ITCC 1304  CCNA 2 Cisco Exploration 2 - Routing Protocols and Concepts  
This course describes the architecture, components, and operation of routers, and explains the principles of routing and routing protocols. Students analyze, configure, verify, and troubleshoot the primary routing protocols RIPv1, RIPv2, EIGRP, and OSPF. Recognize and correct common routing issues and problems. Model and analyze routing processes. Lab required. Prerequisite: ITCC 1301. 3 credit hours. (W)

ITCC 2308  CCNA 3 Cisco Exploration 3 - LAN Switching and Wireless  
This course helps students develop an in-depth understanding of how switches operate and are implemented in the LAN environment for small and large networks. Detailed explanations of LAN switch operations, VLAN implementation, Rapid Spanning Tree Protocol (RSTP), VLAN Trunking Protocol (VTP), Inter-VLAN routing, and wireless network operations. Analyze, configure, verify, and troubleshoot VLANs, RSTP, VTP, and wireless networks. Campus network design and Layer 3 switching concepts are introduced. Lab required. Prerequisite: ITCC 1304. 3 credit hours. (W)

ITCC 2310  CCNA 4 Cisco Exploration 4 - Accessing the WAN  
This course explains the principles of traffic control and access control lists (ACLs) and provides an overview of the services and protocols at the data link layer for wide-area access. Describes user access technologies and devices and discover how to implement and configure Point-to-Point Protocol (PPP), Point-to-Point Protocol over Ethernet (PPPoE), DSL, and Frame Relay. WAN security concepts, tunneling, and VPN basics are introduced. Discuss the special network services required by converged applications and an introduction to quality of service (QoS). Lab required. Prerequisite: ITCC 2308. 3 credit hours. (W)

ITCC 2450  CCNP 1 Building Scalable Internetworks  
Create an efficient and expandable enterprise network by installing, configuring, monitoring, and troubleshooting network infrastructure equipment (especially routers such as Cisco ISRs) according to the Campus Infrastructure module in the Enterprise Composite Network model. Topics include how to configure EIGRP, OSPF, IS-IS, and BGP routing protocols and how to manipulate and optimize routing updates between these routing protocols. Other topics include multicast routing, IPv6, and DHCP configuration. Lab required. Prerequisite: ITCC 2310 or CCNA Certification and consent of Program Director. 4 credit hours. (W)

ITCC 2451  CCNP 2 Implementing Secure Converged Wide Area Networks  
Providing secure enterprise-class network service for teleworkers and branch sites. Students will learn how to secure and expand the reach of an enterprise network with focus on VPN configuration and securing network access. Topics include teleworker configuration and access, Frame-Mode MPLS, site-to-site IPSec VPN, Cisco EZVPN, strategies used to mitigate network attacks, Cisco device hardening and IOS firewall features. Lab required. Prerequisite: ITCC 2310 or CCNA Certification and consent of Program Director. 4 credit hours. (W)

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ITCC 2452  CCNP 3 Building Multilayer Switched Networks
Multilayer Switching teaches about the deployment of state-of-the-art campus LANs. The course focuses on the selection and implementation of the appropriate Cisco IOS services to build reliable, scalable multilayer-switched LANs. Lab required. Prerequisite: ITCC 2310 or CCNA Certification and consent of Program Director. 4 credit hours. (W)

ITCC 2453  CCNP 4 Optimizing Converged Networks
Optimizing and providing effective QOS techniques in converged networks operating voice, wireless, and security applications. Lab required. Prerequisite: ITCC 2310 or CCNA Certification and consent of Program Director. 4 credit hours. (W)

ITCC 2470  Cisco CCNA Security
Replaces ITNW 1449
The Cisco CCNA Security curriculum is taken in preparation for the Implementing Cisco IOS Network Security (IINS) Certification Exam (640-453) leading to the Cisco CCNA Security Certification. The course develops knowledge and skills in the network security area using the available Cisco tools and configurations. Through in-class lecture and lab sections, the following expertise is developed in the following areas: Protocol Sniffers/Analyzers, TCP/IP and common desktop utilities, Cisco IOS software, Cisco VPN clients, and Packet Tracer (PT). Lab required. Prerequisite: ITCC 2310 or CCNA Certification and consent of Program Director. 4 credit hours. (W)

ITCC 2471 CCNP ROUTE: Implementing Cisco IP Routing
The Cisco CCNP ROUTE curriculum is taken in preparation for the Cisco CCNP ROUTE Certification Exam (ROUTE 642-903) leading to the Cisco CCNP ROUTE Certification. The course develops knowledge and skills in the networking area using the available Cisco tools and configurations. Lab required. Prerequisite: ITCC 2310 or CCNA Certification and consent of the Program Director. 4 credit hours. (W)

ITCC 2472 CCNP SWITCH: Implementing Cisco IP Switching
The Cisco CCNP SWITCH curriculum is taken in preparation for the Cisco CCNP SWITCH Certification Exam (SWITCH 642-813) leading to the Cisco CCNP SWITCH Certification. The course develops knowledge and skills in the networking area using the available Cisco tools and configurations. Lab required. Prerequisite: ITCC 2310 or CCNA Certification and consent of the Program Director. 4 credit hours. (W)

ITCC 2473 CCNP TSHOOT: Maintaining and Troubleshooting Cisco IP Networks
The Cisco CCNP TSHOOT curriculum is taken in preparation for the Cisco CCNP TSHOOT Certification Exam (TSHOOT 642-832) leading to the Cisco CCNP TSHOOT Certification. The course develops knowledge and skills in the networking area using the available Cisco tools and configurations. Lab required. Prerequisite: ITCC 2310 or CCNA Certification and consent of the Program Director. 4 credit hours. (W)

ITMT 1300  Implementing and Supporting Microsoft Windows XP Professional
Addresses the implementation and desktop support needs of customers that are planning to deploy and support Microsoft Windows XP Professional in a variety of stand-alone and network operating system environments. In-depth, hands-on training for Information Technology (IT) professionals responsible for the planning, implementation, management, and support of Windows XP Professional. Microsoft Exam #70-270. Lab required. Prerequisite: ITNW 1358 or consent of Instructor or Program Director. 3 credit hours. (W)

ITMT 1440  Managing and Maintaining a Microsoft Windows Server 2003 Environment
Managing accounts and resources, maintaining server resources, monitoring server performance, and safeguarding data in a Microsoft Windows Server 2003 environment. Microsoft Exam #70-290. Lab required. Prerequisite: ITMT 1300 or consent of Instructor or Program Director. 4 credit hours. (W)
ITMT 1450  Implementing, Managing & Maintaining a MS Win Server '03 Network Infrastructure: Network Services
Implementing routing; implementing, managing, and maintaining Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), and Windows Internet Name Service (WINS); securing Internet Protocol (IP) traffic with Internet Protocol security (IPSec) and certificates; implementing a network access infrastructure by configuring the connections for remote access clients; and managing and monitoring network access. Microsoft Exam #70-291. Lab required. Prerequisite: ITMT 1300 or consent of Instructor or Program Director. 4 credit hours. (W)

ITMT 1455  Planning, Implementing, and Maintaining a Microsoft Server 2003 Network Infrastructure
Planning and maintaining a Windows Server 2003 network infrastructure. Microsoft Exam #70-293. Lab required. Prerequisite: ITNW 2471 or consent of Instructor or Program Director. 4 credit hours. (W)

ITMT 2400  Planning, Implementing, and Maintaining a Microsoft Server 2003 Active Directory Infrastructure
Windows Server 2003 directory service environment. Includes forest and domain structure; Domain Name System (DNS); site topology and replication; organizational unit structure and delegation of administration; Group Policy; and user, group, and computer account strategies. Microsoft Exam #70-294. Lab required. Prerequisite: ITMT 1455 or consent of Instructor or Program Director. 4 credit hours. (W)

ITMT 2403  Administering a Microsoft SQL Server Database
In-depth coverage of the knowledge and skills required to install, configure, administer, and troubleshoot the client-server database management system of Microsoft SQL Server databases. Microsoft Exam #70-228. Lab required. Prerequisite: ITMT 1440. 4 credit hours. (W)

ITMT 2430  Designing a Microsoft Windows Server 2003 Active Directory and Network Infrastructure
Designing a Microsoft Active Directory service and network infrastructure for a Microsoft Windows Server 2003 environment. Intended for systems engineers who are responsible for designing directory service and/or network infrastructures. Microsoft Exam #70-297. Lab required. Prerequisite: ITMT 2400. 4 credit hours. (W)

ITMT 2440  Designing Security for Microsoft Networks
Assembling the design team, modeling threats, and analyzing security risks in order to meet business requirements for securing computers in a networked environment. Includes decision-making skills through an interactive tool that simulates real-life scenarios. Focuses on collecting information and sorting through details to resolve a given security requirement. Microsoft Exam #70-298. Lab required. Prerequisite: ITMT 2400. 4 credit hours. (W)

ITMT 2450  Implementing and Managing Microsoft Exchange
Updating and supporting a reliable, secure messaging infrastructure used for creating, storing, and sharing information by using Microsoft Exchange Server 2003. Includes a significant amount of hands-on practices, discussions, and assessments to assist students in becoming proficient in the skills necessary to update and support Exchange Server 2003. Microsoft Exam #70-284. Lab required. Prerequisite: ITMT 1440. 4 credit hours. (W)

ITNW 1280  Cooperative Education - Computer Systems Networking and Telecommunications
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 2 credit hours. (W)

ITNW 1358  Network+
Assists individuals in preparing for the Computing Technology Industry Association (CompTIA) Network+ certification exam and career as a network professional. Prepares individuals for a career as a Network Engineer in the Information Technology support industry. Includes the various responsibilities and tasks required for service engineer to successfully perform in a specific environment. Lab required. 3 credit hours. (W)
ITNW 1380  Cooperative Education - Computer Systems Networking and Telecommunications
Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

ITNW 1451  Fundamentals of Wireless LANs
Design, plan, implement, operate, and troubleshoot Wireless Local Area Networks (WLANs). Includes WLAN design, installation, and configuration; and WLAN security issues and vendor interoperability strategies. Lab required. 4 credit hours. (W)

ITNW 2346  Small Office Home Office: Case Study I
Application of network concepts learned in previous courses. Includes responsibilities and tasks required to successfully perform in the Small Office Home Office (SOHO) environment. Prepares individuals for a career as a Network Engineer in the Information Technology support industry. Includes the various responsibilities and tasks required for service engineer to successfully perform in a specific environment. Case Study I challenges the student to apply the network concepts learned in previous courses to a case-study based problem in a Small Office-Home Office environment. Lab required. Prerequisites: ITMT 1440. 3 credit hours. (W)

ITNW 2350  Enterprise Network: Case Study II
A case study in Convergence Technologies requiring a network engineer to study a problem and design a network solution for an enterprise network. Convergence Technology Case Study II prepares an individual for a career in the Information Technology support industry as a Network Engineer. The course includes various responsibilities and tasks required to successfully perform in a specific environment. Case Study II challenges the student to apply the network concepts learned in previous courses to a case-study-based problem in an Enterprise Network. Lab required. Prerequisites: ITMT 1450. 3 credit hours. (W)

ITNW 2374  Linux Security
The focus of this course is on advanced topics concerning management and advanced security features of systems incorporating Redhat Linux operating system as a server in a networked environment. Areas covered will include Theory of operation, base systems, shells and commands, system services, applications, and troubleshooting. This course will help the student prepare for the Redhat Certified Systems Engineer certification. Lab required. 3 credit hours. (W)

ITNW 2473  Information Storage Management (EMC)
The Information Storage Management course teaches the skills required in designing Storage Systems using Storage Networking Technologies and Virtualization concepts, Business Continuity approaches, and Storage Security and Management strategies. Lab required. Prerequisites: ITMT 1300 and ITNW 1358. 4 credit hours. (W)

ITSC 1309  Integrated Software Applications I - MS Office
Introduction to business productivity software suites using word processing, spreadsheets, databases, and/or presentation software. Prerequisite: POFT 1127 or POFT 1329 or POFT 2301 or consent of Department Faculty Contact. 3 credit hours. (W)

ITSC 1316  Linux Installation and Configuration
Introduction to Linux operating system. Includes Linux installation, basic administration, utilities and commands, upgrading, networking, security, and application installation. Emphasizes hands-on setup, administration, and management of Linux. Lab required. Prerequisite: ITNW 1358 or consent of Instructor or Program Director. 3 credit hours. (W)
ITSC 1364  Practicum - Computer and Information Sciences, General
A basic or intermediate type of non-health professions work-based instruction that provides basic career exploration or helps students gain practical experience in the discipline, enhance skills, and integrate knowledge. The emphasis is on practical work experience. Indirect supervision is provided by the work supervisor. A practicum may be a paid or unpaid learning experience. Prerequisite: Consent of Department Chair. 3 credit hours. (W)

ITSC 2380  Cooperative Education - Computer and Information Sciences, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

ITSE 1301  Web Design Tools - Graphics
Designing and publishing Web documents according to World Wide Web Consortium (W3C) standards. Emphasis on optimization of graphics and images and exploration of the tools available for creating and editing Web documents. Includes in-depth technical investigation of digital imaging on the computer using image editing and/or image creation software. Manipulation, creation, and editing of digital images for a wide assortment of output. Will explore use of industry standard web editing and graphics software packages such as Adobe Photoshop, and Adobe Dreamweaver. 3 credit hours. (W)

ITSE 1306  PHP Programming
Introduction to PHP, including the design of web-based applications, arrays, strings, regular expressions, file input/output, e-mail and database interfaces, stream and network programming, debugging, and security. Emphasizes hands-on programming skills necessary to develop secure and reliable PHP based web applications. Lab required. Prerequisites: COSC 1315 and ITSE 1311 or consent of Instructor or Department Chair. 3 credit hours. (W)

ITSE 1311  Beginning Web Programming
Skill development in web programming including mark-up and scripting languages. May include use of XHTML, CGI, JavaScript, and/or ASP. Introduction to structure and object oriented programming design. Students use Cascading Style Sheets (CSS), XHTML, and JavaScript to design and implement interactive web pages. Hands-on labs allow student to experience each topic discussed. 3 credit hours. (W)

ITSE 1330  Introduction to C# Programming
A study of C# syntax including data types, control structures, functions, syntax, and semantics of the language, classes, class relationships, and exception handling. Prerequisite: COSC 1337 or COSC 1437 or consent of Department Chair. 3 credit hours. (W)

ITSE 1332  Introduction to Visual Basic.NET Programming
A study of Visual Basic.NET (VB.NET) syntax including: data types, control structures, functions, syntax, and semantics of the language, classes, class relationships, and exception handling. An introduction to programming using the Visual Basic.NET language. 3 credit hours. (W)

ITSE 1347  Programming with Visual Basic.NET
Designing and developing enterprise applications using Microsoft Visual Basic.NET in the Microsoft.NET Framework. Includes reference types, class relationships, polymorphism, operators overloading, and creating and handling exceptions. An introduction to Object Oriented Programming techniques. Prerequisite: ITSE 1332. 3 credit hours. (W)

ITSE 1356  Extensible Markup Language (XML)
Introduction of skills and practices related to Extensible Markup Language (XML). Includes Document Type Definition (DTD), well-formed and valid XML documents, XML schemes, and Extensible Style Language (XSL). Prerequisite: ITSE 1311 or consent of Instructor or Department Chair. 3 credit hours. (W)
ITSE 1359  Introduction to Scripting Languages - AJAX
Introduction to scripting languages including: basic data types, control structures, regular expressions, input/output, and textual analysis. Students will learn how to design and implement programming solutions using JavaScript, Cascading Style Sheets, and XML. Course includes introduction to AJAX (Asynchronous JavaScript) and related technologies. Prerequisite: ITSE 2302 or consent of Instructor. 3 credit hours. (W)

ITSE 1380  Cooperative Education - Computer Programming/Programmer, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

ITSE 1391  Special Topics in Computer Programming
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lab required. 3 credit hours. (W)

  Embedded C/C++ Programming
  Exploration of programming embedded systems using an embedded C/C++ compiler. Concepts of interrupts, stacks, RAM (random access memory) types, ROM (read-only memory) types, bit-banding, registers, (GPIO) General Purpose Input/Output, vector tables, buses, exceptions, pipelining, MPU (Microprocessor Units) and RTOSS (recovery time objectives) will be introduced and explained. The course will be as hardware-generic as possible, but labs will be focused on ARM (Advanced RISC (reduced instruction set computer) Machine) Cortex M0 evaluation boards. Prerequisite: COSC 1437.

ITSE 1392  Special Topics in Computer Programming
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lab required. 3 credit hours. (W)

  iPhone Programming
  Course explores developing apps for the I-Phone and I-Pod Touch. Will include Objective-C programming, using iPhone SDK environment, and current issues in programming for the iPhone.

ITSE 1394  Special Topics in Computer Science
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lab required. 3 credit hours. (W)

  Comparing Operating Systems
  This class provides a comparative analysis of current trends in personal computer operating systems including Windows, MAC OS, and Linux OS from an end-user perspective. Hands-on labs allow students to experience using each operating system.

ITSE 2301  Windows Programming Using C++
Introduction to computer programming for Windows using C++. Emphasis on the fundamentals of object-oriented design, development, testing, implementation, and documentation. Includes language syntax, data, and file structures, input/output devices, and files. Uses Visual C++ in an integrated development environment. Prerequisite: COSC 1437 or consent of Instructor or Department Chair. 3 credit hours. (W)
ITSE 2302  Intermediate Web Programming
Techniques for web development. Includes server-side and client-side scripting. Topics may include Perl, HTML, Java applets, JavaScript, and/or ASP. Students design and implement fully interactive web sites using Dynamic HTML (DHTML) techniques that combine XHTML with CSS and JavaScript. Hands-on labs allow students to experience each of the topics discussed. Prerequisite: ITSE 1311 or consent of Instructor or Department Chair. 3 credit hours. (W)

ITSE 2304  Visual Basic.NET Database Development with ADO.NET
Visual Basic.NET applications to access data from a database. Emphasizes Object-Oriented Programming (OOP) and database programming with ADO.NET. Prerequisites: ITSE 1332 and ITSW 1307. 3 credit hours. (W)

ITSE 2309  Database Programming - SQL
Database development using database programming techniques emphasizing database structures, modeling, and database access. 3 credit hours. (W)

ITSE 2313  Web Authoring - Dreamweaver
Instruction in designing and developing web pages that incorporate text, graphics, and other supporting elements using current technologies and authoring tools. Prerequisite: ITSE 1311 or consent of Instructor or Department Chair. 3 credit hours. (W)

ITSE 2317  Java Programming
Introduction to object-oriented Java programming, including the fundamental syntax and semantics of Java for applications and web applets. Review of control structure and data types with emphasis on structured data types. Applies the object-oriented paradigm, focusing on the definition and use of classes along with the fundamentals of object-oriented design. Includes basic analysis of algorithms, searching and sorting techniques, and introduction to software engineering. Lab required. Prerequisite: COSC 1436 or consent of Department Chair. 3 credit hours. (W)

ITSE 2334  Advanced Visual Basic.NET Programming with ASP.NET
Continuation of Visual Basic.NET programming using advanced features. Windows Forms, ADO.NET, XML, Data Bound Controls, DataSet, Assemblies, Attributes, Reflection, Marshalling and Remoting, Threads and Synchronization, Streams, Deployment, Generics, Partial Classes, Application Blocks, and data encryption. Emphasizes using the more advanced features of the .NET Framework Class Library and web programming with ASP.NET. Prerequisites: ITSE 1311 and ITSE 1347. 3 credit hours. (W)

ITSE 2338  C# Database Development with ADO.NET and LINQ
C# applications to access data from a database. Emphasizes Object-Oriented Programming (OOP) and database programming with ADO.NET. Prerequisite: ITSE 1330 or consent of Instructor or Department Chair. 3 credit hours. (W)

ITSE 2347  Advanced Database Programming - Advanced SQL
Database development using complex database programming techniques emphasizing multiple interrelated files, menu design, security implementation, and multiple access. Procedural SQL will be used to study control constructs, cursors, exception handlers, procedures, functions, and data warehousing. Prerequisite: ITSE 2309 or consent of Department Chair. 3 credit hours. (W)

ITSE 2353  Advanced C# Programming with ASP.NET
Continuation of C# programming using advanced features of the .NET Framework Class Library. Windows Forms, ADO.NET, XML, Data Bound Controls, DataSet, Assemblies, Attributes, Reflection, Marshalling and Remoting, Threads and Synchronization, Streams, Deployment, Generics, Partial Classes, Application Blocks, and data encryption. Emphasizes using the more advanced features of the .NET Framework Class Library and web programming with ASP.NET. Prerequisite: ITSE 1330 or consent of Department Chair. 3 credit hours. (W)
ITSE 2354  Advanced Oracle PL/SQL
A continuation of Oracle SQL. Topics include hierarchical queries, set based subqueries, correlated subqueries, scripting, and scripting generation. Emphasizes stored procedures PL/SQL objects, large objects, data structures and processing for aggregated data, and Business Intelligence Query and Analysis. Lab required. Prerequisite: ITSE 2309. 3 credit hours. (W)

ITSE 2380  Cooperative Education - Computer Programming/Programmer, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. Prerequisite: ITSE 1380 or consent of Department Chair. 3 credit hours. (W)

ITSE 2431  Advanced C++ Programming
Further application of C++ programming techniques including subjects such as file access, abstract data structures, class inheritance, and other advanced techniques. Review of control structure and data types with emphasis on structured data types. Applies the object-oriented paradigm, focusing on the definition and use of classes along with the fundamentals of object-oriented design. Includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering. Lab required. Prerequisite: COSC 1436 or consent of Department Chair. 4 credit hours. (W)

ITSW 1304  Introduction to Spreadsheets - Excel
Instruction in the concepts, procedures, and application of electronic spreadsheets. 3 credit hours. (W)

ITSW 1307  Introduction to Database - Access
Introduction to database theory and the practical applications of a database. Emphasis on database design, custom reports, file management, and application creation. 3 credit hours. (W)

ITSW 1380  Cooperative Education - Data Processing and Data Processing Technology/Technician
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

ITSW 2380  Cooperative Education - Data Processing and Data Processing Technology/Technician
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. Prerequisite: ITSW 1380 or consent of Department Chair. 3 credit hours. (W)

ITSY 1300  Fundamentals of Information Security
An introduction to information security including vocabulary and terminology, ethics, the legal environment, and risk management. Identification of exposures and vulnerabilities and appropriate countermeasures are addressed. The importance of appropriate planning, policies and controls is also discussed. Lab required. Prerequisite: BCIS 1305 or COSC 1300 or consent of Instructor or Program Director. 3 credit hours. (W)

ITSY 1400  Fundamentals of Information Security (Security +)
An introduction to information security including vocabulary and terminology, ethics, the legal environment, and risk management. Identification of exposures and vulnerabilities and appropriate countermeasures are addressed. The importance of appropriate planning, policies and controls is also discussed. Lab required. Prerequisite: ITNW 1358. 4 credit hours. (W)
ITSY 2300  Operating System Security
Safeguard computer operating systems by demonstrating server support skills and designing and implementing a security system. Identify security threats and monitor network security implementations. Use best practices to configure operating systems to industry security standards. Lab required. Prerequisite: Any ITCC, ITMC, ITMT or ITNW course, or consent of Instructor or Program Director. 3 credit hours. (W)

ITSY 2301  Firewalls and Network Security
Identify elements of firewall design, types of security threats and responses to security attacks. Use Best Practices to design, implement, and monitor a network security plan. Examine security incident postmortem reporting and ongoing network security activities. Prerequisite: ITSY 2300 or consent of Instructor or Program Director. 3 credit hours. (W)

ITSY 2341  Security Management Practices
Replaces ITSY 2441
In-depth coverage of security management practices, including asset evaluation and risk management; cyber law and ethics issues; policies and procedures; business recovery and business continuity planning; network security design; and developing and maintaining a security plan. Lab required. Prerequisite: ITSY 2300 or consent of Program Director. 3 credit hours. (W)

ITSY 2342  Incident Response and Handling
In-depth coverage of incident response and incident handling, including identifying sources of attacks and security breaches; analyzing security logs; recovering the system to normal; performing postmortem analysis; implementing and modifying security measures. Prerequisite: ITSY 2300 or consent of Instructor or Program Director. 3 credit hours. (W)

ITSY 2343  Computer System Forensics
In-depth study of system forensics including methodologies used for analysis of computer security breaches. Gather and evaluate evidence to perform postmortem analysis of a security breach. Lab required. Prerequisite: ITSY 2342 or consent of Instructor or Program Director. 3 credit hours. (W)

ITSY 2371  e-Commerce and Biometric Authentication
Capstone experience for the security curriculum. Examine digital cryptography including various encryption and key exchange methods. Public Key Infrastructure, digital certificates and digital signatures. Learn e-Commerce and hands-on biometric methods used to authenticate to digital devices. Prerequisites: ITSY 2300 and ITSY 2301 or consent of Instructor or Program Director. 3 credit hours. (W)

ITSY 2401  Firewalls and Network Security
Identify elements of firewall design, types of security threats and responses to security attacks. Use best practices to design, implement, and monitor a network security plan. Examine security incident postmortem reporting and ongoing network security activities. Lab required. Prerequisite: ITSY 2300 or consent of Instructor or Program Director. 4 credit hours. (W)

ITSY 2442  Incident Response and Handling
In-depth coverage of incident response and incident handling, including identifying sources of attacks and security breaches; analyzing security logs; recovering the system to normal; performing postmortem analysis; and implementing and modifying security measures. Lab required. Prerequisite: ITSY 2300 or consent of Instructor or Program Director. 4 credit hours. (W)

ITSY 2443  Computer System Forensics
In-depth study of system forensics including methodologies used for analysis of computer security breaches. Gather and evaluate evidence to perform postmortem analysis of a security breach. Lab required. Prerequisite: ITSY 2442 or consent of Instructor or Program Director. 4 credit hours. (W)
ITSY 2572  Certified Information Systems Security Professional (CISSP) Common Body of Knowledge Domain Instruction
An in-depth study of the 10 domains which make up the Common Body of Knowledge (CBK) of information security professionals. The course is designed to instruct individuals to implement solid security practices, perform risk analysis, identify necessary countermeasures, and help the enterprise as a whole protect its facility, network, systems, and information. Prerequisites: ITSY 1400 and ITSY 2300 or equivalent experience and consent of Program Director. 5 credit hours. (W)

JAPN 1411  Beginning Japanese I
Introduction to the basic skills of speaking, reading, writing, and listening with attention to selected aspects of Japanese culture; designed for students with little or no previous language training. Instruction is enhanced by the use of tapes, slides, and video cassettes. 4 credit hours.

JAPN 1412  Beginning Japanese II
A continuation of JAPN 1411. Prerequisite: JAPN 1411 or consent of Instructor or Department Chair. 4 credit hours.

JAPN 2311  Intermediate Japanese I
Continuing development of the four basic skills of speaking, reading, writing, and listening, emphasizing conversational and reading skills. Designed for students who have completed Beginning Japanese II. Additional Kanji structures are introduced. Also includes attention to selected aspects of Japanese culture. Prerequisite: JAPN 1412 or consent of Instructor or Department Chair. 3 credit hours.

JAPN 2312  Intermediate Japanese II
Continued development of four basic language skills with emphasis on conversation and reading skills. Additional Kanji and grammar structures are introduced. Includes attention to selected aspects of Japanese culture. Prerequisite: JAPN 2311 or consent of Instructor or Department Chair. 3 credit hours.

LEAD 1301  Introduction to Leadership Theory (SLA I)
Study of the various theoretical and practical concepts of leadership and the development of leadership styles. Deliver presentations, create individual portfolios, and work in teams developing strategic initiatives. Prerequisites: Student must have a 2.5 GPA, and submit application for consideration and admittance. 3 credit hours.

LEAD 2301  Advanced Leadership Theory (SLA II)
Concepts essential to the nature of leadership, including the conceptual background theories, approaches, styles and ethical issues in leadership research and thinking. Prerequisites: LEAD 1301, student must have a 2.5 GPA, and submit application for consideration and admittance. 3 credit hours.

LGLA 1303  Legal Research
This course presents law library techniques and computer assisted legal research. 3 credit hours. (W)

LGLA 1307  Introduction to Law and the Legal Professions
This course provides an overview of the law and the legal professions. Topics include legal concepts, systems, and terminology; ethical obligations and regulations; professional trends and issues with particular emphasis on the paralegal's role. 3 credit hours. (W)

LGLA 1342  Federal Civil Litigation
This course presents fundamental concepts and procedures of federal civil litigation with emphasis on the paralegal's role. 3 credit hours. (W)

LGLA 1343  Bankruptcy
This course presents fundamental concepts of bankruptcy law and procedure with emphasis on the paralegal's role. Topics include individual and business liquidation and reorganization. 3 credit hours. (W)
LGLA 1344  Texas Civil Litigation
This course presents the fundamental concepts and procedures of Texas civil litigation with emphasis on the paralegal's role. Prerequisite: LGLA 1342 or consent of Instructor or Department Faculty Contact. 3 credit hours. (W)

LGLA 1353  Wills, Trusts, and Probate Administration
This course presents fundamental concepts of the law of wills, trusts, and probate administration with emphasis on the paralegal's role. 3 credit hours. (W)

LGLA 1355  Family Law
This course presents fundamental concepts of family law with emphasis on the paralegal's role. Topics include formal and informal marriages, divorce, annulment, marital property, and the parent-child relationship. 3 credit hours. (W)

LGLA 1380  Cooperative Education - Legal Assistant/Paralegal
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

LGLA 2239  Certified Legal Assistant Review
This course provides a review of the mandatory and optional topics covered in the Certified Legal Assistant Examination administered by the National Association of Legal Assistants. 2 credit hours. (W)

LGLA 2303  Torts and Personal Injury Law
This course presents fundamental concepts of tort law with emphasis on the paralegal's role. Topics include intentional torts, negligence, and strict liability. 3 credit hours. (W)

LGLA 2307  Law Office Management
This course presents the fundamentals of principles and structure of management, administration, and substantive systems in the law office including law practice technology as applied to paralegals. 3 credit hours. (W)

LGLA 2311  Business Organizations
This course presents basic concepts of business organizations with emphasis on the paralegal's role. Topics include law of agency, sole proprietorships, partnerships, corporations, and other emerging business entities and legal issues affecting business. Prerequisite: LGLA 1307 or LGLA 2333 or consent of Instructor or Department Faculty Contact. 3 credit hours. (W)

LGLA 2333  Advanced Legal Document Preparation
Preparation of legal documents by paralegals based on hypothetical fact situations drawn from various areas including real estate, family law, contracts, litigation, and business organizations. 3 credit hours. (W)

MATH 0131  Beginning Algebra I
This course is an introduction to algebra that also includes the review of foundations of algebra (real number system, operations with real numbers, exponents and order of operations). The course is designed to develop an understanding of solving linear equations, graphing linear equations and introduction to functions. Graphing calculator is required. Lab included. Assessment: Placement in MATH 0305. Prerequisite: MATH 0302. 1 credit hour.

Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.
MATH 0132  Beginning Algebra II
This course is designed to develop an understanding of rules of exponents, polynomials, operations with polynomials, and factoring of the polynomials. The course also includes solving quadratic equations by factoring. Graphing calculator is required. Lab included. Assessment: Placement in MATH 0132. Prerequisite: MATH 0131. 1 credit hour.
Note: May not be used to satisfy the requirement of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.

MATH 0133  Beginning Algebra III
This course is designed to develop an understanding of problem solving techniques, rational expressions and equations. Graphing calculator is required. Lab included. Assessment: Placement in MATH 0133. Prerequisite: MATH 0132. 1 credit hour.
Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.

MATH 0141  Intermediate Algebra I
Solving linear inequalities, algebra of functions, and composition of functions, slope, and different forms of an equation of a line will be discussed in this course. Graphing calculator is required. Lab included. Assessment: Placement in MATH 0310. Prerequisite: MATH 0305 or MATH 0133. 1 credit hour.
Note: May not be used to satisfy the requirement of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.

MATH 0142  Intermediate Algebra II
Solving systems of linear equations and inequalities, radical expressions and functions, operations with radical expressions, and radical equations are discussed in this course. Graphing calculator is required. Lab included. Assessment: Placement in MATH 0142. Prerequisite: MATH 0141. 1 credit hour.
Note: May not be used to satisfy the requirement of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.

MATH 0143  Intermediate Algebra III
The study of complex numbers, rationalizing denominators of radical expressions, quadratic equations, solving nonlinear inequalities, and circles is included in this course. Graphing calculator is required. Lab included. Assessment: Placement in MATH 0143. Prerequisite: MATH 0142. 1 credit hour.
Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.

MATH 0300  Basic Mathematics
Study of arithmetic operations with whole numbers, fractions, decimals, percents, and basic geometry. Introduction to algebra including signed numbers, expressions, and equations. Lab included. 3 credit hours.
Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.

MATH 0302  Pre-algebra
Study of mathematical operations with signed numbers, algebraic expressions, and polynomials; involves solving linear equations and geometric applications. Lab included. Assessment: Placement in MATH 0302. Prerequisite: MATH 0300. 3 credit hours.
Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.
MATH 0305  Beginning Algebra
Study of rational numbers, expressions, linear and quadratic equations, absolute value equations, polynomials, factoring, rational expressions, rational equations, exponents and graphing linear equations. Lab included. Assessment: Placement in MATH 0305. Prerequisite: MATH 0302. 3 credit hours.
*Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.*

MATH 0310  Intermediate Algebra
Study of exponents, functions, radical expressions and equations, quadratic equations and functions, linear and quadratic inequalities, systems of equations and inequalities, and graphing linear equations and inequalities. Lab included. Assessment: Placement in MATH 0310. Prerequisite: MATH 0305. 3 credit hours.
*Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.*

MATH 1314  College Algebra
Relations and functions: linear, polynomial, rational, exponential, logarithmic and inverse functions, composition of functions, absolute value, theory and systems of equations, complex numbers, matrices, sequences, and the binomial theorem. Graphing calculator required. Lab required. Assessment: Placement in MATH 1314, MATH 1324, or MATH 1342. Prerequisite: TSI placement. 3 credit hours.
*Note: Students may take either MATH 1314 or MATH 1414 but not both.*

MATH 1316  Trigonometry
Angular measure, functions of angles, identities, solution of triangles, equations, inverse trigonometric functions, complex numbers, and polar coordinates. Graphing calculator required. Assessment: Placement in MATH 1316, MATH 1325, MATH 1350, or MATH 2373. Prerequisite: MATH 1314 or MATH 1414 or TSI placement. 3 credit hours.

MATH 1324  Finite Mathematics
Equations, inequalities, functions, matrices, linear programming including the simplex method, probability, and statistics. Graphing calculator required. Lab required. Assessment: Placement in MATH 1314, MATH 1324, or MATH 1342. Prerequisite: TSI placement. 3 credit hours.

MATH 1325  Calculus for Business and Economics I
Differential and integral calculus, including exponential and logarithmic functions, average value of a function, and basic differential equations. Graphing calculator required. Lab required. Assessment: Placement in MATH 1316, MATH 1325, MATH 1350, or MATH 2373. Prerequisite: MATH 1314, MATH 1324, or MATH 1414. 3 credit hours.

MATH 1332  College Mathematics
Topics to include graphs and applications to linear and quadratic functions, logarithmic and exponential functions with growth and decay, arithmetic and geometric sequences, mathematics of finance, introductory statistics, counting methods, probability, and other topics in management science and consumer mathematics. Assessment: Placement in MATH 1332. Prerequisite: TSI placement. 3 credit hours.

MATH 1342  Statistics
Data collection and tabulation, measures of central tendency, correlation, linear regression, statistical distributions, probability, and hypothesis testing with applications in various fields. Graphing calculator required. Lab required. Assessment: Placement in MATH 1314, MATH 1324, or MATH 1342. Prerequisite: TSI placement. 3 credit hours.

MATH 1350  Fundamentals of Mathematics I
Concepts of sets, functions, numeration systems, number theory and properties of the natural numbers, integers, rational and real number systems with an emphasis on problem solving and critical thinking. Assessment: Placement in MATH 1316, MATH 1325, MATH 1350, or MATH 2373. Prerequisite: MATH 1314 or MATH 1414. 3 credit hours.
MATH 1351  Fundamentals of Mathematics II
Concepts of geometry, probability and statistics, as well as applications of the algebraic properties of real numbers to concepts of measurement with an emphasis on problem solving and critical thinking. This course is designed specifically for students who seek middle grade (4-8) teacher certification and includes the foundational math concepts taught at the middle grade level. Prerequisite: MATH 1314, MATH 1350, or MATH 1414. 3 credit hours.

MATH 1376  Calculus for Business and Economics II
Continuation of MATH 1325. In this course, application of differential equations, functions of several variables, Lagrange Multipliers, Least Squares Modeling, multiple integrals and infinite series will be covered. Basic concepts are related to multivariable calculus. Graphing calculator required. Lab required. Prerequisite: MATH 1325. 3 credit hours.

MATH 1414  College Algebra
Relations and functions: linear, polynomial, rational, exponential, logarithmic, and inverse functions, composition of functions, absolute value, theory and systems of equations, complex numbers, matrices, sequences, and the binomial theorem. Basic algebra will be reviewed as needed. Graphing calculator required. Assessment: Placement in MATH 1414. Prerequisite: TSI placement. 4 credit hours.
Note: Students may take either MATH 1314 or MATH 1414 but not both.

MATH 2305  Discrete Mathematics
Introductory mathematical logic, algorithms, induction, relations and functions, basic counting techniques, and applications to computing devices. Lab required. Prerequisite: MATH 1376, MATH 2413, or MATH 2417. 3 credit hours.

MATH 2312  Pre-Calculus
Functions and analytic geometry including polynomial, rational, exponential, logarithmic, and trigonometric functions, complex numbers, vectors, conics, transformation of coordinates, polar coordinates, and parametric equations. Emphasis on mathematical reasoning in preparation for calculus. Graphing calculator required. Lab required. Assessment: Placement in MATH 2312. Prerequisite: MATH 1316. 3 credit hours.

MATH 2318  Linear Algebra
Linear equations, matrices, real vector spaces, linear transformations, and eigenvectors. Graphing calculator required. Prerequisite: MATH 2414 or MATH 2419. 3 credit hours.

MATH 2320  Differential Equations
First order differential equations, including exact, separable, linear, and substitution methods. Higher order linear differential equations, power series methods, Laplace transforms, systems of first order linear differential equations, and Euler numerical method. Graphing calculator required. Prerequisite: MATH 2414 or MATH 2419. 3 credit hours.

MATH 2373  Matrices, Vectors, and Linear Programming
Not for science majors. A study of matrices, vectors, determinants, inverses, system of linear equations, and linear programming with applications. Graphing calculator required. Assessment: Placement in MATH 1316, MATH 1325, MATH 1350, or MATH 2373. Prerequisite: MATH 1314 or MATH 1414. 3 credit hours.

MATH 2413  Calculus I
Limits, continuity, derivatives, applications of the derivative, definite, and indefinite integrals. Graphing calculator required. Lab included. Assessment: Placement in MATH 2413 or higher. Prerequisite: MATH 2312. 4 credit hours.
Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Mathematics Department for further information.
MATH 2414  Calculus II  
Applications of integration, techniques of integration, infinite series, parametric equations and polar functions, differential equations, and vectors. Graphing calculator required. Lab included. Prerequisite: MATH 2413. 4 credit hours.  
*Note:* This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Mathematics Department for further information.

MATH 2415  Calculus III  
Vectors in two and three dimensions, vector-valued functions, functions of several variables, partial differentiation, multiple integration, and calculus of vector fields. Graphing calculator required. Lab included. Prerequisite: MATH 2414 or MATH 2419. 4 credit hours.  
*Note:* This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Mathematics Department for further information.

MATH 2417  Accelerated Calculus I  
A study of limits, continuity, the derivative, applications of the derivatives, the definite and indefinite integral and their applications, techniques of integration, derivatives and integrals of trigonometric, logarithmic, hyperbolic, and exponential functions, separable differential equations and their applications. Graphing calculator required. Lab included. Assessment: Placement in MATH 2413 or higher. Prerequisite: MATH 2312. 4 credit hours.  
*Note:* This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Mathematics Department for further information.

MATH 2419  Accelerated Calculus II  
A study of infinite series, parametric equations and polar functions, vectors in two and three dimensions, vector-valued functions, functions of several variables, cylindrical and spherical coordinates, partial derivatives, multiple integrals and their applications. Graphing calculator required. Lab included. Prerequisite: MATH 2414 or MATH 2417. 4 credit hours.  
*Note:* This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Mathematics Department for further information.

MDCA 1343  Medical Insurance/Billing  
Emphasizes accurate ICD-9 and CPT coding of office procedures for payment/reimbursement by patient or third party and prevention of insurance fraud. Additional topics may include managed care or medical economics. Medical insurance billing included. Prerequisite: SRGT 1301. 3 credit hours. *(W)*

MDCA 1348  Pharmacology and Administration of Medications  
Instruction in concepts and application of pharmacological principles. Focuses on drug classifications, principles and procedures of medication administration, mathematical systems and conversions, calculation of drug problems, and medico-legal responsibilities of the medical assistant. Experience in medication administration in the perioperative care of surgical patients is provided in the campus laboratory. Lab required. Prerequisites: BIOL 2401 and BIOL 2402. 3 credit hours. *(W)*

MDCA 1409  Anatomy and Physiology for Medical Assistants  
Emphasis on structure and function of human cells, tissues, organs, and systems with overview of common pathophysiology. Lab required. Prerequisites: EMSP 1501, and consent of Program Director. 4 credit hours. *(W)*

MRKG 1301  Customer Relationship Management  
General principles of customer service including skills, knowledge, attitudes, and behaviors. 3 credit hours. *(W)*

MRKG 1302  Principles of Retailing  
Introduction to the retailing environment, types of retailers, current trends, the employment of retailing techniques, and factors that influence retailing. 3 credit hours. *(W)*
MRKG 1311  Principles of Marketing  
Introduction to the marketing mix functions and process. Includes identification of consumer and organizational needs and explanation of environmental issues. 3 credit hours. (W)  

MRKG 1380  Cooperative Education-Marketing/Marketing Management, General  
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)  

MRKG 2348  Marketing Research and Strategies  
Practical experiences in analyzing marketing studies using data-driven decision-making processes. Includes interrelationships among marketing price, place, promotion, and product responsibility. 3 credit hours. (W)  

MRKG 2349  Advertising and Sales Promotion  
Integrated marketing communications. Includes advertising principles and practices. Emphasizes multi-media of persuasive communication including buyer behavior, budgeting, and regulatory constraints. 3 credit hours. (W)  

MRKG 2381  Cooperative Education-Marketing/Marketing Management, General  
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)  

MRMT 1267  Practicum - Medical Transcription/Transcriptionist  
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Contact the Health Information Technology Program Director. To be completed during the last semester of the Certificate – Medical Transcription. Prerequisite: Consent of Program Director. 2 credit hours. (W)  

MRMT 1307  Medical Transcription I  
Fundamentals of medical transcription with hands-on experience in transcribing physician dictation including basic reports such as history and physicals, discharge summaries, consultation, operative reports, and other medical reports. Utilizes transcribing and information processing equipment compatible with industry standards. Designed to develop speed and accuracy. Lab required. Prerequisite: Consent of Program Director. Corequisite: POFT 1307 and SRGT 1301, or consent of Program Director. 3 credit hours. (W)  

MRMT 2333  Medical Transcription II  
Transcription of advanced medical reports with increasing speed and accuracy including history and physicals, consultations, discharge summaries, operative reports, and other medical reports. Lab required. Prerequisites: MRMT 1307, POFT 1307, and POFT 2301. 3 credit hours. (W)  

MRMT 2371  Medical Transcription III  
Instruction in and hands-on practice of highly-productive transcription techniques using current technology. Production of advanced surgery and medical specialties reports of physician dictation, using shortcuts and text-expanding options as preparation for meeting rapid turnaround transcription requirements. Lab required. Prerequisites: MRMT 2333 and POFI 1301. 3 credit hours. (W)
MUAP 1101 – 1191 Secondary Applied Music-
Private instruction in the area of the student's major, consisting of one 25-minute lesson per week. Students must remain enrolled 1 credit hour of a MUEN course, attend weekly Departmental recitals for the semester, and participate in a jury. Prerequisite: Audition. Contact Music Department for permission prior to registering. 1 credit hour.

Note: Students may receive credit for up to 20 credit hours of any combination of MUAP courses. This includes MUAP 1101-MUAP 1291.

MUAP 1101 Violin
MUAP 1105 Viola
MUAP 1109 Cello
MUAP 1113 Double Bass
MUAP 1115 Electronic Bass
MUAP 1117 Flute
MUAP 1121 Oboe
MUAP 1125 Bassoon
MUAP 1129 Clarinet
MUAP 1133 Saxophone
MUAP 1137 Trumpet
MUAP 1141 French Horn
MUAP 1145 Trombone
MUAP 1149 Baritone
MUAP 1153 Tuba
MUAP 1157 Percussion
MUAP 1158 Drum Set
MUAP 1161 Guitar
MUAP 1162 Jazz Guitar
MUAP 1163 Steel String Guitar
MUAP 1165 Organ
MUAP 1169 Piano
MUAP 1170 Jazz Piano
MUAP 1177 Harp
MUAP 1181 Voice
MUAP 1184 Vocal Coaching
MUAP 1187 Composition
MUAP 1188 Electronic Composition
MUAP 1189 Songwriting
MUAP 1190 Arranging
MUAP 1191 Conducting
MUAP 2201 – 2291 Concentration Applied Music-
For full-time Performing Arts majors (Music, Dance, Theatre) only. Private instruction in the area of the student's concentration, consisting of one 50-minute lesson per week. Students must remain enrolled in at least 4 (four) Performing Arts credits, including one MUSI, MUSB, or MUSC course, at least 1 credit hour of a MUEN course, attend weekly Departmental recitals for the semester, perform in 1 (one) Departmental recital, and participate in a jury for the semester. Prerequisite: Audition. Contact Music Department for permission prior to registering. 2 credit hours.

Note: Students may receive credit for up to 20 credit hours of any combination of MUAP courses. This includes MUAP 1101-2391.

MUAP 2201 Violin
MUAP 2205 Viola
MUAP 2209 Cello
MUAP 2213 Double Bass
MUAP 2215 Electronic Bass
MUAP 2217 Flute
MUAP 2221 Oboe
MUAP 2225 Bassoon
MUAP 2229 Clarinet
MUAP 2233 Saxophone
MUAP 2237 Trumpet
MUAP 2241 French Horn
MUAP 2245 Trombone
MUAP 2249 Baritone
MUAP 2253 Tuba
MUAP 2257 Percussion
MUAP 2258 Drum Set
MUAP 2261 Guitar
MUAP 2262 Jazz Guitar
MUAP 2263 Steel String Guitar
MUAP 2265 Organ
MUAP 2269 Piano
MUAP 2270 Jazz Piano
MUAP 2277 Harp
MUAP 2281 Voice
MUAP 2284 Vocal Coaching
MUAP 2287 Composition
MUSP 2288 Electronic Composition
MUAP 2289 Songwriting
MUAP 2290 Arranging
MUAP 2291 Conducting

MUEN 1121 Jazz Lab Band
Participation in a large band concentrating on jazz and commercial music performance styles. Consisting of 16-21 instrumentalists and one vocalist, the band performs both traditional and contemporary jazz literature. A number of performances both on and off campus are given each semester. Prerequisite: Audition. 1 credit hour.

Note: Students may take MUEN 1121, MUEN 1122, and MUEN 1123 for a combined total of no more than 8 credit hours.
MUEN 1131  New Music Ensemble  
Performs experimental, avant garde, electronic, and contemporary music for mixed media ensemble. Prerequisite: Audition. 1 credit hour.  
*Note: Students may take MUEN 1131, MUEN 1132, MUEN 1133, MUEN 1134, MUEN 1135, MUEN 1136, MUEN 1137, MUEN 1138, MUEN 1139, and MUEN 1140 for a combined total of no more than 8 credit hours.*

MUEN 1132  Keyboard Ensemble  
Traditional piano literature for multiple performers and arrangements for electronic keyboard ensemble. Several performances each semester. Prerequisite: Audition. 1 credit hour.  
*Note: Students may take MUEN 1131, MUEN 1132, MUEN 1133, MUEN 1134, MUEN 1135, MUEN 1136, MUEN 1137, MUEN 1138, MUEN 1139, and MUEN 1140 for a combined total of no more than 8 credit hours.*

MUEN 1133  Woodwind Ensemble  
A small group of woodwinds performs traditional classical repertoire. Prerequisite: Audition. 1 credit hour.  
*Note: Students may take MUEN 1131, MUEN 1132, MUEN 1133, MUEN 1134, MUEN 1135, MUEN 1136, MUEN 1137, MUEN 1138, MUEN 1139, and MUEN 1140 for a combined total of no more than 8 credit hours.*

MUEN 1134  Brass Ensemble  
A small group of brass players performs traditional classical repertoire. Prerequisite: Audition. 1 credit hour.  
*Note: Students may take MUEN 1131, MUEN 1132, MUEN 1133, MUEN 1134, MUEN 1135, MUEN 1136, MUEN 1137, MUEN 1138, MUEN 1139, and MUEN 1140 for a combined total of no more than 8 credit hours.*

MUEN 1135  Expressions Combo  
Expressions Combo is a small ensemble (4-6) of musicians who serve as the rhythm section for the Expressions Vocal Jazz ensemble. In addition to rehearsing and performing with Expressions, the combo also prepares its own arrangements and performs as an independent ensemble. Typical repertoire includes bebop, Latin, and fusion standards. This ensemble may have several performances each semester. This group may have an annual tour. Prerequisite: Audition. 1 credit hour.  
*Note: Students may take MUEN 1131, MUEN 1132, MUEN 1133, MUEN 1134, MUEN 1135, MUEN 1136, MUEN 1137, MUEN 1138, MUEN 1139, and MUEN 1140 for a combined total of no more than 8 credit hours.*

MUEN 1136  Chamber Ensemble  
A mixed instrumentation of wind and string players performs traditional classical repertoire. Prerequisite: Audition. 1 credit hour.  
*Note: Students may take MUEN 1131, MUEN 1132, MUEN 1133, MUEN 1134, MUEN 1135, MUEN 1136, MUEN 1137, MUEN 1138, MUEN 1139, and MUEN 1140 for a combined total of no more than 8 credit hours.*

MUEN 1137  Guitar Ensemble  
A small group of guitarists performs traditional classical repertoire. Prerequisite: Audition. 1 credit hour.  
*Note: Students may take MUEN 1131, MUEN 1132, MUEN 1133, MUEN 1134, MUEN 1135, MUEN 1136, MUEN 1137, MUEN 1138, MUEN 1139, and MUEN 1140 for a combined total of no more than 8 credit hours.*

MUEN 1138  Percussion Ensemble  
A small group of percussion players performs jazz and traditional repertoire. Prerequisite: Audition. 1 credit hour.  
*Note: Students may take MUEN 1131, MUEN 1132, MUEN 1133, MUEN 1134, MUEN 1135, MUEN 1136, MUEN 1137, MUEN 1138, MUEN 1139, and MUEN 1140 for a combined total of no more than 8 credit hours.*

MUEN 1139  String Ensemble  
A small group of string players performs traditional classical repertoire. Prerequisite: Audition. 1 credit hour.  
*Note: Students may take MUEN 1131, MUEN 1132, MUEN 1133, MUEN 1134, MUEN 1135, MUEN 1136, MUEN 1137, MUEN 1138, MUEN 1139, and MUEN 1140 for a combined total of no more than 8 credit hours.*
MUEN 1140  Jazz Combo
Participation in a small jazz ensemble concentrating on jazz and commercial music performance styles. Ensemble consists of 4-9 instrumental/vocal members. Repertoire includes instrumental and vocal music typical of small jazz groups. A number of performances both on and off campus are given each semester. Prerequisite: Audition or consent of Instructor. 1 credit hour.

Note: Students may take MUEN 1131, MUEN 1132, MUEN 1133, MUEN 1134, MUEN 1135, MUEN 1136, MUEN 1137, MUEN 1138, MUEN 1139, and MUEN 1140 for a combined total of no more than 8 credit hours.

MUEN 1141  Collin County Chorale
Open to all interested students. This mixed choral ensemble studies and performs a wide variety of music representing the choral literature. This ensemble may have several performances each semester. This group may have an annual tour. Prerequisite: Consent of Instructor. 1 credit hour.

Note: Student may take MUEN 1141 and MUEN 1142 for a combined total of no more than 8 credit hours.

MUEN 1142  Expressions Vocal Jazz Ensemble
This group works on a wide variety of jazz styles throughout the year. They also work in conjunction with a jazz combo allowing them to experience solo jazz singing. This select ensemble of 10-16 singers has several performances each semester. This group may have an annual tour. Prerequisite: Audition. 1 credit hour.

Note: Student may take MUEN 1141 and MUED 1142 for a combined total of no more than 8 credit hours.

MUEN 1151  Chamber Singers
A select vocal ensemble consisting of approximately 16 singers. Repertoire includes madrigals and choral literature appropriate for the smaller ensemble. There may be several performances on and off campus each semester. This group may have an annual tour. Prerequisite: Audition. 1 credit hour.

Note: Student may take MUEN 1151 and MUEN 1152 for a combined total of no more than 8 credit hours.

MUEN 1152  Musical Theatre Ensemble
Musical Theater Ensemble is a mixed vocal ensemble consisting of approximately 10 to 15 acting singers with experience in Musical Theater performance. Repertoire will include ensemble singing from contrasting periods of the 20th and 21st Century including classic Musical Theater from the 1940's to the 1960's, musical theater literature from the 1970's to the 1990's and contemporary Musical Theater compositions. Students will also study the differences in vocal and musical styles associated with each period and the technical production appropriate to sing these styles. In addition, they will experience solo singing appropriate to differing periods in Musical Theater, work on staging ensemble numbers and perform a final showcase. The group may present several performances during the semester. Prerequisite: Audition. 1 credit hour.

Note: Students may take MUEN 1151 and MUEN 1152 for a combined total of no more than 8 credit hours.

MUSB 1305  Survey of the Music Business
An overview of the music industry including songwriting, live performance, the record industry, music merchandising, contracts and licenses, and career opportunities. 3 credit hours. (W)

MUSB 1341 Concert Promotion and Venue Management
Concert promotion and venue management. Includes considerations in purchasing a club, concert promotion and advertising, talent buying, city codes, insurance, Texas Alcoholic Beverage Commission Regulation, performance rights organization licenses, personnel management and concert production and administration. Lab required. Prerequisite: MUSB 1305. 3 credit hours. (W)
MUSB 1391 Special Topics in Music Business Management and Merchandising
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lab required. 3 credit hours. (W)

Music Marketing with Emerging Technologies
Topics address marketing with new technologies including web-based networking and social media, global music marketing, creative commons, placing music in film and television, and mobile music applications. Prerequisite: MUSB 1305.

MUSB 2301 Music Marketing
Methods of music distribution, retailing, and wholesaling. Includes identifying a target market, image building, distribution (brick and mortar vs. digital delivery), pricing, advertising, and marketing mix. 3 credit hours. (W)

MUSB 2345 Live Music and Talent Management
An examination of the role, scope, and activities of the talent manager including establishing the artist/manager relationship; planning the artist’s career; and developing goals, strategies, and tactics with an overall view of the live music business. Prerequisite: MUSB 1305. 3 credit hours. (W)

MUSB 2355 Legal Aspects of the Entertainment Industry
Copyright law and the various agreements used in the entertainment industry. Emphasizes contracts used by music publishers, record companies, artist managers, record producers, film and television producers, and booking agencies. Prerequisite: MUSB 1305. 3 credit hours. (W)

MUSB 2380 Cooperative Education-Music Management and Merchandising
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

MUSC 1171 Commercial Class Piano I
Fundamentals of keyboard technique for the non-music major or for the commercial music student. Lab required. 1 credit hour. (W)

MUSC 1172 Commercial Class Piano II
A continuation of MUSC 1171 with added emphasis on development of sight-reading skills, repertoire, and keyboard technique. Lab required. Prerequisite: MUSC 1171 or consent of Instructor. 1 credit hour. (W)

MUSC 1209 Conducting Class
Introduction to the art of conducting including regular and irregular beat patterns, subdivision, and beat pattern varieties applied to musical literature and practical experiences. 2 credit hours. (W)

MUSC 1303 History of Popular Music
A study of commercial music industry trends and developments through historical analysis. Topics include the evolution of the music industry with emphasis on the development of popular musical styles and the impact of culture and technology on industry growth. 3 credit hours. (W)

MUSC 1313 Commercial Music Theory I
Introduction to chord progressions, song forms, and harmonic techniques used in commercial music. Topics include modern chord notation and chord voicings. Prerequisite: MUSI 1301.3 credit hours. (W)
MUSC 1321  Songwriting I
Introduction to the techniques of writing marketable songs including the writing of lyrics and melodies, setting lyrics to music, developing lyrical and musical "hooks," analyzing the marketplace, and developing a production plan for a song demo. 3 credit hours. (W)

MUSC 1323  Audio Electronics
Basic concepts in electricity, Ohm's law, circuit analysis and troubleshooting audio problems. Includes soldering techniques, and equipment maintenance. Lab required. 3 credit hours. (W)

MUSC 1327  Audio Engineering I
Overview of the recording studio. Includes basic studio electronics and acoustic principles, waveform properties, microphone concepts and miking techniques, studio set up and signal flow, recording console theory, signal processing concepts, recorder principles and operation, and an overview of mixing and editing. Lab required. 3 credit hours. (W)

MUSC 1331  MIDI I
Exploration of the history and evolution of Musical Instrument Digital Interface (MIDI) systems and applications. Includes the MIDI language and applications in the studio environment using software-based sequencing programs. Lab required. 3 credit hours. (W)

MUSC 1333  Synthesis I
An exploration of sound synthesis. Includes additive, subtractive, and FM synthesizers. Lab required. 3 credit hours. (W)

MUSC 1405  Live Sound I
An overview of the field of live sound. Includes principles of live sound and the theory and interconnection of the components of a sound reinforcement system. Lab required. Prerequisite: MUSC 1327. 4 credit hours. (W)

MUSC 2313  Commercial Music Theory II
Continuation of Commercial Music Theory I. Emphasizes harmonic and melodic analysis, extended chord theory, and modal and altered scales. Prerequisite: MUSC 1313 or consent of Instructor. 3 credit hours. (W)

MUSC 2314  Improvisation Theory I
Chordal structures of commercial music genres. Emphasizes extemporaneous performance. 3 credit hours. (W)

MUSC 2330  Commercial Music Arranging and Composition
Presentation of arranging and composition for projects in industry recognized genres including songwriting, show writing, video, and film. Class covers popular nomenclature/theory, discovering music sources, common orchestration, writing for rhythm section and manuscript for individual parts. 3 credit hours. (W)

MUSC 2345  Synthesis II
Advanced sound synthesis. Includes hybrid synthesis and digital sampling. Lab required. Prerequisite: MUSC 1333. 3 credit hours. (W)

MUSC 2351  Audio for Video
Advanced audio techniques for video production. Includes synchronization, automated mixdown, audio post production for video, and editing techniques. Lab required. Prerequisite: ARTV 1343 or MUSC 1327. 3 credit hours. (W)

MUSC 2355  MIDI II
Advanced MIDI concepts and techniques. Includes synchronizing MIDI and audio devices and advanced sequencer operation. Lab required. Prerequisite: MUSC 1331. 3 credit hours. (W)

MUSC 2356  Songwriting II
Continuation in the development of techniques for writing marketable songs including the writing of lyrics and melodies, setting lyrics to music, developing lyrical and musical "hooks," analyzing the marketplace, and developing a production plan for a song demo. Prerequisite: MUSC 1321, or consent of Instructor. 3 credit hours. (W)
MUSC 2427  Audio Engineering II
Implementation of the recording process, microphones, audio console, multitrack recorder, and signal processing devices. Lab required. Prerequisites: MUSC 1327 with a grade of "B" or better; or consent of Instructor. 4 credit hours. (W)

MUSC 2447  Audio Engineering III
Advanced practice of procedures and techniques in recording and manipulating audio. Includes digital audio editing, advanced recording techniques, and advanced engineering projects. Lab required. Prerequisite: MUSC 2427 with a grade of "B" or better; or consent of Instructor. 4 credit hours. (W)

MUSC 2448  Audio Engineering IV
The role of the producer. Includes recording, mixing, arranging, analyzing projects, session planning, communication, budgeting, business aspects, technical considerations, and music markets. Covers advanced techniques in recording, mixing, and editing. Lab required. Prerequisite: MUSC 2447 with a grade of "B" or better; or consent of Instructor. 4 credit hours. (W)

MUSI 1116  Aural Skills I
Skills developed include sight-singing, solmization, and melodic and harmonic dictation. Prerequisite: MUSI 1301. 1 credit hour.
Note: Student may take MUSI 1116 and MUSI 1117 for a combined total of no more than 6 credit hours.

MUSI 1117  Aural Skills II
Further emphasis on diatonic sight-singing and dictation. Prerequisite: MUSI 1116. 1 credit hour.
Note: Student may take MUSI 1116 and MUSI 1117 for a combined total of no more than 6 credit hours.

MUSI 1160  Italian Diction
Presents the phonetic sounds of the Italian language, the principles of which will be applied to required vocal repertoire. Required for voice majors, but open to all students with consent of Instructor. 1 credit hour.

MUSI 1161  English Diction
Presents the phonetic sounds of the English language, the principles of which will be applied to required vocal repertoire for transfer music majors. Required for voice majors, but open to all students with consent of Instructor. Prerequisite: MUSC 1301. 1 credit hour.

MUSI 1181  Beginning Piano I
Fundamentals of keyboard technique for music majors, but open to all students. Five finger major and minor positions, two octave major scales, arpeggios, sight reading, elementary chord progressions, and elementary piano repertoire. Lab required. Prerequisite: MUSC 1301. 1 credit hour.
Note: Student may take MUSI 1181, MUSI 1182, MUSI 2181, and MUSI 2182 for a combined total of no more than 4 credit hours.

MUSI 1182  Beginning Piano II
Development on two octave minor scales, arpeggios, diatonic chord progressions, and piano repertoire. This three-hour per week course covers chapters 16-30 of Alfred's Group Piano for Adults, Volume 1. Lab required. Prerequisite: MUSI 1181. 1 credit hour.
Note: Student may take MUSI 1181, MUSI 1182, MUSI 2181, and MUSI 2182 for a combined total of no more than 4 credit hours.

MUSI 1183  Class Voice I
Class instruction in the fundamentals of singing including posture, breath support, vocal production, and diction. For the non-vocal major. 1 credit hour.
Note: Student may take MUSI 1183, MUSI 1184, MUSI 2183, and MUSI 2184 for a combined total of no more than 4 credit hours.
MUSI 1184  Class Voice II
A continuation of MUSI 1183 with further emphasis on proper technique and vocal literature. May be repeated for up to 3 credit hours. Prerequisite: MUSI 1183. 1 credit hour.
Note: Student may take MUSI 1183, MUSI 1184, MUSI 2183, and MUSI 2184 for a combined total of no more than 4 credit hours.

MUSI 1192  Class Guitar I
Class instruction in the fundamentals of beginning guitar. For the non-guitar major. 1 credit hour.
Note: Student may take MUSI 1192, MUSI 1193, MUSI 2192, and MUSI 2193 for a combined total of no more than 4 credit hours.

MUSI 1193  Class Guitar II
Continuation of MUSI 1192 employing advanced reading skills, chord structures, and techniques. Prerequisite: MUSI 1192. 1 credit hour.
Note: Student may take MUSI 1192, MUSI 1193, MUSI 2192, and MUSI 2193 for a combined total of no more than 4 credit hours.

MUSI 1301  Music Fundamentals
Introduces the elements of music theory: scales, intervals, keys, triads, elementary ear training, keyboard harmony, notation, meter, and rhythm. 3 credit hours.

MUSI 1304  Foundations of Music: Teaching Elementary Piano
This course examines various methods, materials, theories, and techniques used in the instruction of keyboard from preschool through intermediate levels, in both individual and group situations. A basic understanding of the physiological mechanics of piano playing and the professional business role of the independent piano studio will be explored. A thorough investigation will be made of current teaching materials and repertoire representing different levels of development. Prerequisite: Consent of Instructor. 3 credit hours.

MUSI 1306  Music Appreciation
Understanding music through the study of cultural periods, major composers, and musical elements. For non-music majors only. Music majors must take MUSI 1307. Assessment: Placement in at least READ 0310. 3 credit hours.

MUSI 1307  Introduction to Music Literature
Study of selected works in music literature from major periods of music history. Includes musical styles, forms, and composers from the Medieval period to the present. Guided listening experiences are an important part of the course. Required for all music majors. Prerequisite: MUSI 1301. 3 credit hours.

MUSI 1310  History of Jazz
Development of jazz music in the 20th century studied through text, audio, and video recordings. Includes the personalities and elements that shaped jazz and the social issues of the times as displayed by the music of each decade. 3 credit hours.

MUSI 1311  Music Theory I
Investigation of music modes, transposition, cadences and non-harmonic tones, phrase structure, musical textures, and four-part voice leading. Prerequisite: MUSI 1301 or consent of Instructor. 3 credit hours.

MUSI 1312  Music Theory II
Development of melody harmonization through the understanding of harmonic progression, usage of 7th chord, elementary modulation, secondary harmonies, and large formal divisions. Prerequisite: MUSI 1311. 3 credit hours.

MUSI 1386  Introduction to Composition
Fundamentals of music composition including structural and formal composition techniques, computer-based musical notation, and basic MIDI sequencing. Prerequisite: MUSI 1301. 3 credit hours.
MUSI 2116  Aural Skills III
Continuation of MUSI 1117. Aural study of superimposition, singing modulations to closely related keys, melodic and harmonic modulations, and compound intervals. Prerequisite: MUSI 1117. 1 credit hour.
Note: Student may take MUSI 2116 and MUSI 2117 for a combined total of no more than 4 credit hours.

MUSI 2117  Aural Skills IV
Final course in Aural Skills sequence. Singing remote modulations and difficult melodies: aural study of unusual and mixed meters: altered chords: 9th, 11th, and 13th chords. Prerequisite: MUSI 2116. 1 credit hour.
Note: Student may take MUSI 2116 and MUSI 2117 for a combined total of no more than 4 credit hours.

MUSI 2181  Beginning Piano III
Continuation of MUSI 1182. Development of three octave scales and arpeggios, accompaniment patterns, intermediate and 20th century piano repertoire, advanced sight reading skills. Lab required. Prerequisite: MUSI 1182. 1 credit hour.
Note: Student may take MUSI 1181, MUSI 1182, MUSI 2181, and MUSI 2182 for a combined total of no more than 4 credit hours.

MUSI 2182  Beginning Piano IV
Final course in Beginning Piano sequence; prepares music majors for piano barrier exams. Culmination of skills including scales and arpeggios four octaves hands together, advanced chord progressions, more difficult piano repertoire, and competency at sight reading. Lab required. Prerequisite: MUSI 2181. 1 credit hour.
Note: Student may take MUSI 1181, MUSI 1182, MUSI 2181, and MUSI 2182 for a combined total of no more than 4 credit hours.

MUSI 2183  Class Voice III
A continuation of the study of the voice concentrating on correct vocal principles in the execution of advanced Dramatic literature. Lab included. Prerequisite: MUSI 1184 or consent of Instructor. 1 credit hour.
Note: Student may take MUSI 1183, MUSI 1184, MUSI 2183, and MUSI 2184 for a combined total of no more than 4 credit hours.

MUSI 2184  Class Voice IV
An advanced continuation of the study of the voice concentrating on correct vocal principles in the execution of Musical Comedy and/or Opera Buffa/Contique. Lab included. Prerequisite: MUSI 2183, or consent of Instructor. 1 credit hour.
Note: Student may take MUSI 1183, MUSI 1184, MUSI 2183, and MUSI 2184 for a combined total of no more than 4 credit hours.

MUSI 2192  Class Guitar III
Continuation of MUSI 1193. Development of two and three octave scales, intermediate guitar repertoire from Renaissance to 20th century music. Prerequisite: MUSI 1193. 1 credit hour.
Note: Student may take MUSI 1192, MUSI 1193, MUSI 2192, and MUSI 2193 for a combined total of no more than 4 credit hours.

MUSI 2193  Class Guitar IV
Final course in sequence of guitar classes. Culmination of skills including completion of major and melodic minor scales, more difficult guitar repertoire, and competency in sight-reading. 1 credit hour.
Note: Student may take MUSI 1192, MUSI 1193, MUSI 2192, and MUSI 2193 for a combined total of no more than 4 credit hours.

MUSI 2311  Music Theory III
Study of music theory from late Renaissance polyphony through Baroque counterpoint and continuing with the chromatic harmonies of the Classic period as found within Sonata Allegro and Rondo formal structures. Prerequisite: MUSI 1312. Corequisites: MUSI 2116 and MUSI 2181. 3 credit hours.
MUSI 2312  Music Theory IV
Music theory beginning with the extended harmonies of the Romantic era and continuing through 20th century formal processes and techniques. Prerequisite: MUSI 2311. 3 credit hours.

MUSI 2389  Academic Co-op Music
An instructional program designed to integrate on-campus study with practical hands-on work experience in music. In conjunction with class seminars, the individual student will set specific goals and objectives in the study of music. Contact the Cooperative Work Experience Office. 3 credit hours.

MUSP 1104 – 1127 Applied Commercial Music:
Private instruction in the area of the student's concentration, with goals related to commercial music. Consists of one 100-minute lesson per week. Students must remain enrolled in three or more credit hours of Music courses (MUSB, MUSC, MUSI, MUSP) as well as one ensemble course. Students must also attend weekly Departmental recitals for the semester, and perform for a jury at the end of the semester. Lab required. Prerequisite: Audition and consent of Instructor. 1 credit hour. (W)
Note: Students may take MUSP 1104 to MUSP 1127 and MUSP 2230 to MUSP 2249 for a combined total of no more than 12 credit hours.
MUSP 1104  Bass Guitar
MUSP 1105  Commercial Guitar
MUSP 1110  Piano
MUSP 1117  Percussion
MUSP 1127  Voice

MUSP 1151  Small Commercial Music Ensemble: Recording
Participation in a small recording ensemble concentrating on commercial music performance styles. Prerequisite: Audition and consent of Instructor. 1 credit hour. (W)
Note: Student may take MUSP 1151 for a combined total of no more than 8 credit hours.

MUSP 1202  Introductory Group Voice
Introduction to Speech Level Singing philosophy and technique with goals related to commercial voice. Emphasizes sight singing and harmony singing applicable to commercial background singing. Lab required. Prerequisite: Audition and consent of Instructor. 2 credit hours. (W)

MUSP 2230 – 2249 Advanced Applied Commercial Music:
Advanced private instruction in the area of the student's concentration, with goals related to commercial music. Consists of one 150-minute lesson per week. Students must remain enrolled in three or more credit hours of music courses (MUSB, MUSC, MUSI, MUSP) as well as one ensemble course. Students must also attend weekly Departmental recitals for the semester, and perform for a jury at the end of the semester. Prerequisite: Audition and consent of Instructor. 2 credit hours. (W)
Note: Students may take MUSP 1104 to MUSP 1127, and MUSP 2230 to MUSP 2249 for a combined total of no more than 12 credit hours.
MUSP 2230  Voice
MUSP 2233  Bass Guitar
MUSP 2235  Piano
MUSP 2237  Commercial Guitar
MUSP 2249  Percussion

NANO 1301  Introduction to Nanotechnology
Definition, history, scope, impacts, and challenges within the rapidly emerging and revolutionary field of nanotechnology. Explores nanotechnology's unique applications, production processes, workplace environment, and occupational outlook. 3 credit hours. (W)
NURA 1160  Clinical-Nursing Aide and Patient Care Assistant
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. The course includes direct "hands-on" patient care. Direct supervision is provided in a long term care setting by the clinical professional who are Registered Nurses. Corequisite: NURA 1301 or consent of Program Director. 1 credit hour. (W)

NURA 1301  Nurse Aide for Health Care
Preparation for entry level nursing assistants to achieve a level of knowledge, skills, and abilities essential to provide basic care to patients of long term care and hospital facilities. Topic examples include resident's rights, communication, safety, observation, reporting and assisting patients in maintaining basic comfort and safety. Emphasis is on effective interaction with members of the health care team. Corequisite: NURA 1160 or consent of Program Director. 3 credit hours. (W)

PHED 1100  Beginning Weight Training
Introduction to weight training and body building; learn the basic techniques for strength development and cardiovascular conditioning. Various weight machines, free weights and aerobic machines are used to establish an individual fitness program. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1102  Intermediate Weight Training
Designed for the individual who has experience in basic weight training skills and wants to increase their knowledge of training techniques and conditioning. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1104  Beginning Jogging and Fitness
Develops cardiovascular endurance, flexibility and strength through jogging, stretching and weight training. Physical fitness assessment leads to development of an individual fitness program. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1106  Walking and Fitness
Improve cardiovascular fitness, muscle tone, and flexibility through a vigorous walking and conditioning program. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1111  Basketball
Develops basic skills and strategies through knowledge of the history, rules, and terminology and through participation in game situations. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1112  Soccer
Develops the basic skills and strategies through knowledge of the history, rules and terminology and through participation in game situations. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.
PHED 1113  Softball
Fundamental skills of throwing, batting, fielding, and base running as well as knowledge of the rules and terminology, and participation in game situations. 1 credit hour.

Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1114  Volleyball
Individual skills and techniques, application of rules and an introduction to offensive and defensive strategies are stressed. 1 credit hour.

Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1115  Archery
Investigates the basic techniques, rules and scoring as well as the history and terminology of archery. 1 credit hour.

Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1116  Badminton
History, rules, basic strokes and strategies in singles and doubles play are emphasized through intraclass competition. 1 credit hour.

Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1117  Beginning Tennis
Stresses rules, scoring and fundamental techniques for beginners. Participation by skill level for singles and doubles play is made to ensure vigorous activity for cardiovascular fitness. 1 credit hour.

Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1118  Intermediate Tennis
Develops and improves each skill level in serving, forehand and backhand drives, lobs and volleys. Performance strategies for both singles and doubles are drilled. 1 credit hour.

Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1120  Beginning Racquetball
Instruction in rules and basic skills; develops the fundamental techniques of court play for beginners. Participation by skill level assures vigorous activity for cardiovascular fitness. 1 credit hour.

Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1121  Intermediate Racquetball
Drills in serving, forehand and backhand drives, kill shots, Z shots and lobs help develop strategies for singles and doubles play. 1 credit hour.

Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1123  Beginning Golf
Stresses basic skills, history, terminology and scoring of golf. 1 credit hour.

Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.
PHED 1124  Intermediate Golf
Develops advanced skill techniques and strategies of golf. Prerequisite: PHED 1123 or consent of Instructor. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1125  Bowling
Teaches ball selection, stance, four-step approach, rules, and scoring procedures. Emphasis on game situations. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1126  Self-Defense
Basic understanding and practical application of fundamental self-defense techniques through physical conditioning. Includes balance, focus, breath control, block and counter, avoiding attack, striking, thrusting and kicking. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1127  Beginning Karate
Introduction to basic techniques, formal exercises, and sparring techniques for the beginner. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1129  Introduction to Hatha Yoga
Practice of yogic postures, or "asana," defined as the physical positioning that coordinates breathing with moving and holding still for the purpose of both stretching and strengthening parts of the body. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range and PHED 2147; however, the same course cannot be taken more than twice.

PHED 1130  Intermediate Hatha Yoga
The refinement of the asanas (postures) covered in PHED 1129, with emphasis on breath work. Introduces more advanced asanas; emphasis on integrating yoga into daily routines at home and work. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1131  Beginning Swimming
Non-swimmers and beginners are taught basic swimming skills and strokes. Emphasizes personal safety skills and confidence in the water. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1133  Introduction to Racquet Sports
Introduction to the rules, scoring, and fundamental techniques in the following sport: tennis, badminton, racquetball. Participation will help develop muscular and cardiovascular fitness and hand eye coordination. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1136  Water Aerobics
Fitness level is improved through exercises in the water. A non-impact style of exercises that utilizes water resistance for increasing muscular strength, endurance, and cardiovascular fitness. Swimming skills are not necessary. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.
PHED 1137  Swimming Conditioning
Fitness level is improved through swimming strokes and water exercises. Different swimming programs enhance muscular strength, endurance and cardiovascular fitness. Prerequisite: Consent of Instructor. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1140  Beginning Aerobic Dance
Aerobic exercise and step training incorporating light weights. Includes interval training, which adds a new variation to aerobic endurance and flexibility. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1147  Beginning Aerobic Kickboxing/Karate
Cardiovascular and body conditioning are acquired through the use of karate and martial arts techniques set to music and integrating punching bags. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1148  Introduction to Team Sports
Develops the basic skills and strategies through the knowledge of the history, rules, and terminology. Students will participate in game situations. Three of the following activities will be elected for instruction: Basketball, Flag Football, Soccer, Softball, or Volleyball. 1 credit hour.
Note: A student may receive up to 4 credit hours of any combination of PHED course numbers in the 1100-1148 range; however, the same course cannot be taken more than twice.

PHED 1253  Lifeguard Training
Skills, methods, and techniques involved in lifesaving and water safety are reviewed. Successful completion leads to American Red Cross Lifesaving Certification. Student must provide documentation that the American Red Cross requirements for Lifeguard Training have been met prior to enrolling in this course. Prerequisite: Consent of Instructor. 2 credit hours.

PHED 1301  Foundations of Sport and Physical Activity
Historical foundations, principles and philosophical aspects of sport and physical activity are studied. Investigates teacher qualifications, career opportunities, and leaders affecting the discipline in the United States. 3 credit hours.

PHED 1304  Personal Health
Acquire the knowledge to improve the quality of one's life, protect yourself from disease, and become an informed consumer. Nutrition, mental health, physical fitness, drugs, and sex education are discussed. 3 credit hours.

PHED 1306  Safety and First Aid
Learn to recognize, evaluate and prioritize the first aid needs of individuals in emergency situations. Lectures, demonstrations and practical experience provide qualified students with American Red Cross certification. 3 credit hours.

PHED 1336  Introduction to Sports Management
The course will introduce basic principles of administration, marketing, management, and operations in relation to the various careers in sports management. An overview of the sports industry will be introduced. 3 credit hours.

PHED 1337  Leadership and Communication in Sport
The course will introduce basic principles of leadership, communication, ethics, and marketing in relation to the sport management field and careers in sports. 3 credit hours.
PHED 1338  Concepts of Physical Fitness and Wellness
Introduces basic concepts of fitness, nutrition, health promotion, and disease prevention. Gain knowledge to make intelligent choices that contribute to a healthy lifestyle. Incorporates both lecture and physical activity laboratories. 3 credit hours.

PHIL 1301  Introduction to Philosophy
Critical and reflective thinking as applied to basic problems of existence and to the meaning of human life. Selective philosophical problems are examined through the views of major philosophers. Includes ancient, medieval, and modern thought. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

PHIL 1304  Comparative Religion
Study of religious traditions: Eastern, Western, ancient, and modern. Emphasis on such topics as the nature of God, religious experience, immortality, and human freedom. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

PHIL 1316  History of World Religions I-Eastern Religions
This course is designed to introduce students to a historical study of Hinduism, Buddhism, and the religions of China, Japan and other Asian countries. In addition to the history of these religions, beliefs and practices of the principal religions will be topics of discussion. The course will provide students with a condensed introduction to Asian civilizations as students explore the complex interaction of religion and society throughout this region of the world. Assessment: Placement in College-Level Reading. 3 credit hours.

PHIL 1317  History of World Religions II-Western Religions
This course is designed to introduce students to a historical study of western religions; emphasis will be placed on Judaism, Christianity and Islam, and other religions found in the West. Students will be introduced not only to the historical developments and inter-relations between these religions, but also the beliefs and practices of these religions. Assessment: Placement in College-Level Reading. 3 credit hours.

PHIL 2303  Introduction to Logic
Symbolic and informal logic; emphasis on logical argument, fallacies, inductive and deductive proof, and correct reasoning. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

PHIL 2306  Introduction to Ethics
Traditional theories and problems in the field of moral philosophy. Using seminal works from the history of western philosophical thought, this course examines the meaningfulness of ethical discourse and explores what makes an action right or wrong, good or evil. Includes contemporary issues in light of historical ethics. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

PHIL 2307  Introduction to Social and Political Philosophy
Focuses on the concepts of force, power, and authority as well as on natural rights, justice, education, freedom, and responsibility. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

PHIL 2321  Philosophy of Religion
A critical investigation of important philosophical concerns with respect to religious ideas of faith, such as the existence and nature of God, the problem of evil, and ideas of the sacred and profane. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

PHTC 1300  Photo Digital Imaging I
Computer and software instruction for electronic imaging. Includes color, gray scale, image conversion, presentation, and ethics. Lab required. Prerequisite: ARTS 2356 or PHTC 1311. 3 credit hours. (W)
PHTC 1311  Fundamentals of Photography/Digital
An introduction to camera operation and image production, composition, supplemental lighting, and use of exposure meters and filters. Lab required. 3 credit hours. (W)

PHTC 1341  Color Photography I
Examination of color theory as it applies to photography. Emphasis on color concepts and the intricacies of seeing and photographing in color. Lab required. Prerequisite: ARTS 2356 or PHTC 1311. 3 credit hours. (W)

PHTC 1343  Expressive Photography
A study of formal, professional, and individual uses of photography by applying photographic technology to personalized needs. Emphasis on creative visual thinking and problem solving and the exploration of personal vision. Lab required. Prerequisite: ARTS 2356 or PHTC 1311. 3 credit hours. (W)

PHTC 1345  Illustrative Photography I
Instruction in the technical aspects involved in commercial photography. Topics include lighting equipment, techniques of production photography, reproduction principles, illustrative techniques, and advertising. Lab required. Prerequisite: ARTS 2356 or PHTC 1311. 3 credit hours. (W)

PHTC 1347  Landscape Photography
Skill development in the inspection of the landscape visually and photographically utilizing various camera formats. Topics include exploration of historic, geographical, and cultural locations, and review of landscape photographers. Lab required. Prerequisite: ARTS 2356 or PHTC 1311. 3 credit hours. (W)

PHTC 1351  Photojournalism I
Presentation of photographic techniques used by photojournalists in newspapers, magazines, and trade publications including news, feature, sports, editorial portraits, and photo essays. Includes a study of layout design and the freelance market. Lab required. Prerequisite: ARTS 2356 or PHTC 1311. 3 credit hours. (W)

PHTC 1353  Portraiture I
Photographic principles applied to portrait lighting, posing, printing and subject rapport. This is a foundation course in photographic portraiture. Assignments are designed to provide both aesthetic challenges as well as comprehensive studio technique. All students must participate in class demos and stick close to prescribed procedures on assignments in order to maintain studio privileges. There will be a mixture of color and black and white materials used, with accent on studio time rather than darkroom or computer time. Lab required. Prerequisite: ARTS 2356 or PHTC 1311. 3 credit hours. (W)

PHTC 2331  Architectural Photography
Study of the equipment, processes, and procedures necessary for the photography of building exteriors and interiors, dusk/night and night architectural landscapes, and construction progress. Lab required. Prerequisite: ARTS 2356 or PHTC 1311. 3 credit hours. (W)

PHTC 2340  Photographic Studio Management
Photography business management, pricing, market analysis, promotion, networking, job acquisition, and photographic equipment analysis. Lab required. 3 credit hours. (W)

PHTC 2341  Color Photography II
Skill development in advanced color image production. Emphasis on use of specialized color techniques and applications. Lab required. Prerequisite: PHTC 1300. 3 credit hours. (W)

PHTC 2342  Fashion Photography
Fashion photography in terms of trends and techniques included in studio and location work. Emphasizes model direction and lighting control. Lab required. Prerequisite: ARTS 2356, or PHTC 1311. 3 credit hours. (W)
PHTC 2343  Portfolio Development
A culmination experience for the evaluation of the student’s photographic competencies. Includes association with a professional photographic organization, skills in resume creation, completion of portfolio, professional self-presentation, comprehensive exam, and seminars in areas of photographic interest. Lab required. Prerequisites: Completed a minimum of 6 credit hours of PHTC courses, or consent of Department Chair. 3 credit hours. (W)

PHTC 2349  Photo Digital Imaging II
Continued skill development in the use of the computer and software for photographic manipulation and output. Lab required. Prerequisite: PHTC 1300. 3 credit hours. (W)

PHTC 2353  Portraiture II
A continuation of the study of principles of effective portraiture with specific emphasis on unique presentation and environmental and location studies. Lab required. Prerequisite: PHTC 1353. 3 credit hours. (W)

PHYS 1401  General Physics I
Algebra-based physics course for the science major in areas of biology, medicine, and pharmacy. Includes laws of motion of objects, heat, work and energy, and sound. Lab required. Assessment: Placement in MATH 2312; College-Level Reading. Prerequisites: High school pre-calculus or equivalent within the last five years with a grade of "C" or better. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

PHYS 1402  General Physics II
A continuation of Physics 1401. Includes electricity, magnetism, light, optics, relativity and atomic physics. Lab required. Prerequisite: PHYS 1401 within the last five years with a grade of "C" or better. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

PHYS 1403  Stars and Galaxies
Introduction to stars and galaxies; basic tools and concepts in astronomy and physics are discussed. Subjects studied include stellar evolution, supernovae, black holes, neutron stars, galaxies, and quasars. Laboratory exercises, night observations, planetarium and observatory visits combine to enhance lecture material. Lab required. Assessment: Placement in MATH 0310, College-Level Reading. 4 credit hours.

PHYS 1404  Solar System
Introduction to the solar system; basic tools and concepts in astronomy and physics are discussed. Subjects studied include planets, moons, asteroids, comets, solar system formation, and solar system exploration. Laboratory exercises, night observations, planetarium and observatory visits combine to enhance lecture material. Lab required. Assessment: Placement in MATH 0310, College-Level Reading. 4 credit hours.

PHYS 1405  Conceptual Physics
This course is a non-mathematical presentation of the elements of classical and modern physics. Emphasizes the understanding of concepts rather than the development of computational skills. There are no math or science prerequisites. What students should bring to this course is curiosity about how the world works. Intended for liberal arts and other non-science majors. Lab required. 4 credit hours.

PHYS 1410  Physics of Music and Sound
This course is a study of the physics governing production, transmission and perception of sound. The focus is on the physical characteristics of sound, as well as the basic physical relationships that govern all vibrations and waves. We will also consider how sound is affected by the environment (acoustics) and how sound is physically and physiologically perceived. Laboratory exercises and classroom demonstrations combine to enhance lecture material. Lab required. Assessment: Placement in MATH 0310; College-Level Reading. 4 credit hours.
PHYS 1415  Physical Science I  
Investigation of everyday phenomena of the physical world, which helps students to achieve a well-grounded understanding of selected science concepts as well as the skills that enable and encourage rational independent thinking. Lab required. Assessment: Placement in MATH 0310, College-Level Reading. 4 credit hours.

PHYS 1417  Physical Science II  
Investigation of topics in physics, chemistry, geology, and meteorology in the context of a one-semester astronomy course. Topics will include: Celestial measurement of time, calendars, and seasons; geology and meteorology of the Earth, Moon, and planets; Chemistry and physics of stars and galaxies; and the interdisciplinary question of life beyond Earth. Laboratory exercises and night observations combine to enhance lecture material. Lab required. Assessment: Placement in MATH 0310; College-Level Reading. 4 credit hours.

PHYS 2389  Academic Co-op Physics  
Integrates on-campus study with practical hands-on work experience in physics. In conjunction with class seminars, the student will set specific goals and objectives in the study of physics. Contact the Cooperative Work Experience Office. 3 credit hours.

PHYS 2425  University Physics I  
A calculus-based analysis of classical physics for science majors in fields such as physics, computer science and engineering. Includes laws of motion, force, momentum, work and energy, angular momentum, and rotational and oscillatory motion. Lab required. Prerequisite: MATH 2413 within the last five years with a "C" or better. Prerequisite/concurrent enrollment: MATH 2414. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

PHYS 2426  University Physics II  
Addresses electric fields, AC and DC currents, dielectrics, magnetic fields, magnetic properties of matter, inductance, electromagnetism, properties of waves and optics. Lab required. Prerequisites: MATH 2414 and PHYS 2425 within the last five years with a "C" or better. 4 credit hours.

Note: This course is also offered through the Center for Advanced Study in Mathematics and Natural Sciences (CASMNS). Contact the Natural Sciences Department for further information.

PLAB 1323  Phlebotomy  
Skill development in the performance of a variety of blood collection methods using proper techniques and standard precautions. Includes vacuum collection devices, syringes, capillary skin puncture, butterfly needles and blood culture, and specimen collection on adults, children, and infants. Emphasis on infection prevention, patient identification, specimen labeling, quality assurance, specimen handling, processing, accessioning, professionalism, ethics, and medical terminology. Lab required. Prerequisite: Current Healthcare Provider Cardiopulmonary Resuscitation (CPR) Certification from American Heart Association (AHA). Corequisite: PLAB 1360. 3 credit hours. (W)

PLAB 1360  Clinical - Phlebotomy  
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Current Healthcare Provider Cardiopulmonary Resuscitation (CPR) Certification for American Heart Association (AHA). Corequisite: PLAB 1323. 3 credit hours. (W)

POFI 1301  Computer Applications I-MS Word Productivity  
Overview of computer office applications including current terminology and technology. Introduction to computer hardware, software applications, and procedures. Prerequisite: POFT 2301 or consent of Department Faculty Contact. 3 credit hours. (W)
POFI 2301  Word Processing-MS Word
Word processing software focusing on business applications. Prerequisite: POFT 1329 or POFT 2301 or consent of Department Faculty Contact. 3 credit hours. (W)

POFI 2331  Desktop Publishing for the Office-MS Office
In-depth coverage of desktop publishing terminology, text editing, and use of design principles. Emphasis on layout techniques, graphics, multiple page displays, and business applications. Prerequisite: POFI 2301 or consent of Department Faculty Contact. 3 credit hours. (W)

POFL 1359  Legal Transcription
This course presents legal transcription techniques. Prerequisite: POFI 2301 or POFT 2301 or consent of Department Faculty Contact. 3 credit hours. (W)

POFL 1380  Cooperative Education - Legal Administrative Assistant/Secretary
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. Prerequisite: Consent of Department Faculty Contact. 3 credit hours. (W)

POFM 1300  Medical Coding Basics
Presentation and application of basic coding rules, principles, guidelines, and conventions utilizing various coding systems. Lab required. Prerequisite/Concurrent enrollment: SRGT 1301. 3 credit hours. (W)

POFM 1380  Cooperative Education - Medical Administrative/Executive Assistant and Medical Secretary
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. Prerequisite: Consent of Department Faculty Contact. 3 credit hours. (W)

POFT 1127  Introduction to Keyboarding
Skill development in keyboarding techniques. Emphasis on the development of acceptable speed and accuracy. 1 credit hour. (W)

POFT 1307  Proofreading and Editing
Instruction in proofreading and editing skills necessary to assure accuracy in business documents. Prerequisite: POFT 1127 or POFT 1329 or POFT 2301 or consent of Department Faculty Contact. 3 credit hours. (W)

POFT 1319  Records and Information Management I
Introduction to basic records and information management filing systems including manual and electronic filing. Prerequisite: POFT 1127 or POFT 1329 or POFT 2301 or consent of Department Faculty Contact. 3 credit hours. (W)

POFT 1329  Beginning Keyboarding
Skill development of keyboarding techniques. Emphasis on development of acceptable speed and accuracy levels and formatting basic documents. 3 credit hours. (W)

POFT 1349  Administrative Office Procedures II
In-depth coverage of office procedures with emphasis on decision making, goal setting, management theories, and critical thinking. To be completed during the last semester of the Office Systems Technology degree or certificate. Prerequisite: POFI 2301 or POFT 2301 or consent of Department Faculty Contact. 3 credit hours. (W)
POFT 1380  Cooperative Education - Administrative Assistant and Secretarial Science, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. Prerequisite: Consent of Department Faculty Contact. 3 credit hours. (W)

POFT 2203  Speed and Accuracy Building
Review, correct, and improve keyboarding techniques for the purpose of increasing speed and improving accuracy. Prerequisite: POFT 1127 or POFT 1329 or POFT 2301 or consent of Department Faculty Contact. 2 credit hours. (W)

POFT 2301  Intermediate Keyboarding
A continuation of keyboarding skills emphasizing acceptable speed and accuracy levels and formatting documents. Prerequisite: POFT 1329 or consent of Department Faculty Contact. 3 credit hours. (W)

POFT 2312  Business Correspondence and Communication
Development of writing and presentation skills to produce effective business communications. Prerequisite: Pofi 1301 or POFI 2301 or POFT 1329 or POFT 2301 or consent of Department Faculty Contact. 3 credit hours. (W)

POFT 2380  Cooperative Education-Administrative Assistant and Secretarial Science, General
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. Prerequisite: Consent of Department Faculty Contact. 3 credit hours. (W)

PSTR 1301  Fundamentals of Baking
Fundamentals of baking including dough, quick breads, pies, cakes, cookies, tarts, and doughnuts. Instruction in flours, fillings, and ingredients. Topics include baking terminology, tool and equipment use, formula conversions, functions of ingredients, and the evaluation of baked products. Professional chef uniform and kitchen tools required. Lab required. 3 credit hours. (W)

Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

PSTR 1305  Breads and Rolls
Concentration on fundamentals of chemically and yeast raised breads and rolls. Instruction on commercial preparation of a wide variety of products. Professional chef uniform and kitchen tools required. Lab required. Prerequisites: CHEF 1305 with a grade of “C” or better and PSTR 1301 with a grade of “C” or better. 3 credit hours. (W)

Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

PSTR 1306  Cake Decorating I
Introduction to skills, concepts and techniques of cake decorating. Professional chef uniform and kitchen tools required. Lab required. Prerequisites: CHEF 1305 with a grade of “C” or better and PSTR 1301 with a grade of “C” or better. 3 credit hours. (W)

Note: Culinary lab classes required extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.
PSTR 1310  Pies, Tarts, Teacakes, and Cookies
Focus on preparation of American and European style pie and tart fillings and dough, cookies, teacakes, custard and batters. Instruction in finishing and presentation techniques. Professional chef uniform and kitchen tools required. Lab required. Prerequisites: CHEF 1305 with a grade of “C” or better and PSTR 1301 with a grade of “C” or better. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

PSTR 1312  Laminated Dough, Pate a Choux, and Donuts
Focus on preparation of laminated dough to include puff pastry, croissant, and Danish and a variety of pate a choux (eclair paste) products and donuts. Fillings and finishing techniques included. Professional chef uniform and kitchen tools required. Lab required. Prerequisites: CHEF 1305 with a grade of “C” or better and PSTR 1301 with a grade of “C” or better. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

PSTR 1340  Plated Desserts
Preparation and service of hot and cold desserts with a focus on individual desserts, a la minute preparations, and numerous components within one preparation. Emphasis on station organization, timing, and service coordination for restaurant dessert production. Professional chef uniform and kitchen tools required. Prerequisites: CHEF 1305 with a grade of “C” or better and PSTR 1301 with a grade of “C” or better. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

PSTR 1380  Cooperative Education-Baking and Pastry Arts/Baker/Pastry Chef
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 3 credit hours. (W)

PSTR 2301  Chocolates and Confections
Production and decoration of traditional truffles, marzipan, molded and hand-dipped chocolate, caramels, nougats, and pate de fruit. Professional chef uniform and kitchen tools required. Lab required. Prerequisites: CHEF 1305 with a grade of "C" or better and PSTR 1301 with a grade of “C” or better. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

PSTR 2307  Cake Decorating II
A course in decoration of specialized and seasonal products. Professional chef uniform and kitchen tools required. Lab required. Prerequisite: PSTR 1306. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

PSTR 2331  Advanced Pastry Shop
A study of classical desserts, French and international pastries, hot and cold desserts, ice creams and ices, chocolate work, and decorations. Emphasis on advanced techniques. Professional chef uniform and kitchen tools required. Prerequisites: CHEF 1305 with a grade of “C” or better and PSTR 1301 with a grade of “C” or better. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.
PSTR 2380  Cooperative Education-Baking and Pastry Arts/Baker/Pastry Chef
Career-related activities encountered in the student’s area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Prerequisites: CHEF 1305 with a grade of “C” or better, PSTR 1301 with a grade of “C” or better, and completion of 9 credit hours in the major core of PSTR. 3 credit hours. (W)

PSYC 2301  General Psychology
Introduction to scientific psychology as applied to human behavior, including research methods, physiological factors, learning, motivation, emotions, personality, adjustment, stress, psychological disorders and therapies. These principles will be applied to the human experience. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

PSYC 2302  Applied Psychology
Application of psychological principles to human relations issues in organizational settings. Emphasis on self-understanding, interpersonal relations, and career development. Assessment: Placement in ENGL 1301. 3 credit hours.

PSYC 2306  Human Sexuality
Understanding of human sexuality - includes an appreciation of different approaches to sexuality as well as an awareness of one’s own sexuality and its impact on adjustment to life. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

Note: Students may take either PSYC 2306 or SOCI 2306 but not both.

PSYC 2314  Life Span Psychology
A life-span approach to human development - studies the processes of life from conception through adulthood and aging. Includes physical, cognitive, and psychosocial aspects of human growth, development and behavior. These principles will be applied to daily lifestyles. Assessment: Placement in ENGL 1301; College-Level Reading. Prerequisite: PSYC 2301. 3 credit hours.

PSYC 2315  Psychology of Adjustment
Gives students deeper insight into their lives and those around them. Includes enhancing self awareness, stress coping, healthy relationships and dealing with loss. Assessment: Placement in ENGL 1301; College-Level Reading. 3 credit hours.

PSYC 2316  Psychology of Personality
In-depth study of theories of personality with practical application of each. Methods of personality measurement and assessment are also included. Assessment: Placement in ENGL 1301; College-Level Reading. Prerequisite: PSYC 2301. 3 credit hours.

PSYC 2319  Social Psychology
Research and theory regarding social factors that influence human behavior. Focuses on attitudes, interpersonal attraction, aggression, conformity, communication, values, roles and group processes. These principles will be applied to the human experience. Assessment: Placement in ENGL 1301. 3 credit hours.

PSYC 2371  Death and Dying
This course will explore the social, emotional, and cognitive processes involved in our understanding and acceptance of death and dying. A cross-cultural perspective of these issues will be presented. Topics discussed include the grief and loss, death coping across the life-span, social and institutional contexts of death, hospice alternatives, funerals and wills, organ donation, and ways to help both dying persons and survivors cope. Assessment: Placement in ENGL 1301. 3 credit hours.
PSYC 2372  Abnormal Psychology  
An introduction to the study of abnormal behavior. The course focuses on the causes, symptoms, assessment and treatment of mental disorders, with emphasis on contemporary issues regarding the nature of mental disorders. Assessment: Placement in ENGL 1301. Prerequisite: PSYC 2301. 3 credit hours.

PSYC 2389  Academic Co-op Psychology  
Integrates on-campus study with practical hands-on work experience in psychology. In conjunction with class seminars, the student will set specific goals and objectives in the study of psychology. Contact the Cooperative Work Experience Office. Assessment: Placement in ENGL 1301. Prerequisite: Consent of Instructor. 3 credit hours.

RBTC 1305  Robotic Fundamentals  
An introduction to flexible automation. Topics include installation, repair, maintenance, and development of flexible robotic manufacturing systems. 3 credit hours. (W)

READ 0300  Developmental Reading I  
Raises the reading level of students through the acquisition of basic vocabulary and comprehension skills. Lab included. Assessment: Placement in READ 0300. 3 credit hours.  
Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.

READ 0305  Developmental Reading II  
Offers additional instruction in developing vocabulary and comprehension skills. Effective study skills are introduced. Lab included. Assessment: Placement in READ 0305. Prerequisite: READ 0300. 3 credit hours.  
Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.

READ 0310  Developmental Reading III  
Seeks to further improve student's vocabulary, comprehension and study skills. Lab included. Assessment: Placement in READ 0310. Prerequisite: READ 0305. 3 credit hours.  
Note: May not be used to satisfy the requirements of an associate degree. Developmental courses may be taken for a combined total of no more than 27 credit hours.

RELE 1301  Principles of Real Estate I  
A beginning overview of licensing as a real estate broker or salesperson. Includes ethics of practice as a license holder, titles to and conveyance of real estate, legal descriptions, deeds, encumbrances and liens, distinctions between personal and real property, appraisal, finance and regulations, closing procedures, and real estate mathematics. Covers at least three hours of classroom instruction on federal, state, and local laws relating to housing discrimination, housing credit discrimination, and community reinvestment. Fulfills at least 30 of 60 hours of required instruction for salesperson license. 3 credit hours. (W)

RELE 1303  Real Estate Appraisal  
A study of the central purposes and functions of an appraisal, social and economic determinants of value, appraisal case studies, cost, market data and income approaches to value estimates, final correlations, and reporting. 3 credit hours. (W)

RELE 1307  Real Estate Investments  
Characteristics of real estate investments. Includes techniques of investment analysis, time-valued money, discounted and non-discounted investment criteria, leverage, tax shelters, depreciation, and applications to property tax. 3 credit hours. (W)
RELE 1309  Real Estate Law  
Provides a study of legal concepts of real estate, land description, real property rights, estates in land, contracts, conveyances, encumbrances, foreclosures, recording procedures, and evidence of title. 3 credit hours. (W)

RELE 1311  Law of Contracts  
Elements of a contract, offer and acceptance, the statute of frauds, specific performance and remedies for breach, unauthorized practice of law, commission rules relating to use of adopted forms and owner disclosure requirements. 3 credit hours. (W)

RELE 1315  Property Management  
A study of the role of the property manager, landlord policies, operational guidelines, leases, lease negotiations, tenant relations, maintenance, reports, habitability laws, and the Fair Housing Act. 3 credit hours. (W)

RELE 1319  Real Estate Finance  
An overview of monetary systems, primary and secondary money markets, sources of mortgage loans, federal government programs, loan applications, processes and procedures, closing costs, alternative financial instruments, equal credit opportunity laws affecting mortgage lending, Community Reinvestment Act, and the state housing agency. 3 credit hours. (W)

RELE 1321  Real Estate Marketing  
A study of real estate professionalism and ethics: characteristics of successful salespersons, time management, psychology of marketing, listing procedures, advertising, negotiating and closing financing, and the Deceptive Trade Practice Act. 3 credit hours. (W)

RELE 1325  Real Estate Mathematics  
Basic arithmetic skills. Includes mathematical logic, percentages, interest, time value of money, depreciation, amortization, proration, and estimation of closing statements. 3 credit hours. (W)

RELE 1327  Real Estate Commercial Appraisal  
Principles and techniques used in the valuation of commercial property. Topics include purposes and functions of an appraisal, social and economic forces affecting value, appraisal case studies, cost, and income approaches to value. 3 credit hours. (W)

RELE 1338  Principles of Real Estate II  
A continuing overview of licensing as a broker or salesperson. Includes ethics of practice as a license holder, titles to and conveyance of real estate, legal descriptions, deeds, encumbrances and liens, distinctions between personal and real property, appraisal, finance and regulations, closing procedures, and real estate mathematics. Covers at least three hours of classroom instruction on federal, state, and local laws relating to housing, discrimination, housing credit discrimination, and community reinvestment. Fulfills at least 30 of 60 hours of required instruction for salesperson license. 3 credit hours. (W)

RELE 1380  Cooperative Education - Real Estate  
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

RELE 2301  Law of Agency  
A study of law of agency including principal-agent and master-servant relationships, the authority of an agent, the termination of an agent's authority, the fiduciary and other duties of an agent, employment law, deceptive trade practices, listing or buying procedures, and the disclosure of an agency. 3 credit hours. (W)
RELE 2331  Real Estate Brokerage
A study of law of agency, planning and organization, operational policies and procedures, recruiting, selection and training of personnel, records and control, and real estate firm analysis and expansion criteria. 3 credit hours. (W)

RELE 2381  Cooperative Education - Real Estate
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

RNSG 1219  Integrated Nursing Skills I
Study of the concepts and principles essential for demonstrating competence in the performance of basic nursing skills for care of diverse clients across the lifespan. Topics include knowledge, judgment, skills, and professional values within a legal/ethical framework. Focus will be on assessment, critical thinking, performance, and teaching/learning needs associated with fundamental skills and procedures and communication/documentation of nursing care. Prerequisite: Admission to the Associate Degree Nursing Program. Corequisites: RNSG 1360 and RNSG 1523, or consent of Program Director. 2 credit hours.

RNSG 1227  Transition from Vocational/Paramedic to Professional Nursing
Study of the differences in the role of a Licensed Vocational Nurse or Paramedic with a Registered Nurse. Topics include health promotion, expanded assessment, analysis of data, nursing process, pharmacology, multidisciplinary teamwork, communication, and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework throughout the lifespan. Prerequisites: Consent of Program Director. Major Requirement: AAS – Nursing. 2 credit hours. (W)

RNSG 1229  Integrated Nursing Skills II
Study of the concepts and principles necessary to perform intermediate or advanced nursing skills for care of diverse clients across the lifespan. Topics include knowledge, judgment, skills, and professional values within a legal/ethical framework. Focus on concepts and principles required to competently perform safe, intermediate nursing skills for diverse client systems across the lifespan in a caring environment. Requires ability to accurately communicate skills/procedures rendered, client teaching, client responses and outcomes in both written and verbal venues. Prerequisite: RNSG 1219, RNSG 1360, and RNSG 1523, or consent of Program Director. Corequisite: RNSG 1461 and RNSG 2504, or consent of Program Director. Major Requirement: AAS – Nursing. 2 credit hours.

RNSG 1360  Clinical I-Nursing-Registered Nurse Training
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. With the course focus being on the understanding and application of the nursing process, the student will develop nursing care plans, identify client systems teaching/learning needs, utilize independent, caring nursing interventions, and therapeutic communication to meet the basic client needs and appropriately record client information and care. Prerequisite: Admission to the Associate Degree Nursing Program. Corequisite: RNSG 1219 and RNSG 1523, or consent of Program Director. Major Requirement: AAS – Nursing. 3 credit hours.
RNSG 1461  Clinical II-Nursing-Registered Nurse Training
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Clinical experiences are unpaid external learning experiences. The course will focus on application on critical thinking skills and implementation of the nursing process to plan care for client systems with common physiologic and psychosocial health needs/problems in the structured care setting. Care will include measures to meet client systems teaching/learning needs, using therapeutic communication to improve client compliance with therapeutic holistic plan of care in a caring environment. Course requires communication/documentation utilizing appropriate nursing terminology and analysis of client. Prerequisites: RNSG 1219, RNSG 1360 and RNSG 1523, or consent of Program Director. Corequisites: RNSG 1229 and RNSG 2504, or consent of Program Director. Major Requirement: AAS – Nursing. 4 credit hours.

RNSG 1523  Introduction to Professional Nursing for Integrated Programs
Introduction to the profession of nursing including the roles of the registered nurse with emphasis on health promotion and primary disease prevention across the lifespan; essential components of the nursing health assessment; identification of deviations from expected health patterns; the application of a systematic, problem-solving process to provide basic nursing care to diverse clients across the lifespan; and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework. Special emphasis will be placed on the understanding and application of the nursing process, developing critical thinking skills, and basic caring interventions to meet basic physiologic client needs. Prerequisite: Admission to the Associate Degree Nursing Program. Corequisites: RNSG 1219 and RNSG 1360, or consent of Program Director. Major Requirement: AAS – Nursing. 5 credit hours.

RNSG 2207  Transition to Nursing Practice
Introduction to selected concepts related to the role of the professional nurse as a provider of care, coordinator of care, and member of the profession. Review of trends and issues impacting nursing and health care today and in the future. Topics include knowledge, judgment, skill, and professional values within a legal/ethical framework. Focus on multifaceted factors impacting nursing care, primary, secondary, and tertiary health outcomes for diverse client systems across the wellness-illness continuum in a variety of settings within hospital and community and the changing healthcare environment. Prerequisites: RNSG 1219, RNSG 1229, RNSG 1360, RNSG 1461, RNSG 1523, RNSG 2460, RNSG 2504, and RNSG 2514. Corequisites: RNSG 2535 and RNSG 2561, or consent of Program Director. Major Requirement: AAS – Nursing. 2 credit hours. (W)

RNSG 2460  Clinical III-Nursing-Registered Nurse Training
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. The course will focus on application of critical thinking skills and implementation of the nursing process to plan care for client systems with complex physiologic and psychosocial health needs/problems in the structured care setting. Care will include measures to meet client systems teaching/learning needs, using therapeutic communication to improve client compliance with the therapeutic holistic plan of care in a caring environment. Course requires communication/documentation utilizing appropriate nursing terminology and analysis of client(s). Prerequisites: RNSG 1219, RNSG 1229, RNSG 1360, RNSG 1461, RNSG 1523, and RNSG 2504. Corequisite: RNSG 2514 or consent of Program Director. Major Requirement: AAS – Nursing. 4 credit hours.
RNSG 2504 Integrated Care of the Client with Common Health Care Needs
Application of a systematic problem-solving process and critical thinking skills to provide nursing care to diverse clients/families across the lifespan with common health care needs including, but not limited to, common childhood/adolescent diseases, uncomplicated perinatal care, mental health concepts, perioperative care, frequently occurring adult health problems and health issues related to aging. Emphasis on secondary disease prevention and collaboration with members of the multidisciplinary healthcare team. Content includes applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework facilitating the student's advancement in the role/competencies as a Provider of Care. Prerequisites: RNSG 1219, RNSG 1360 and RNSG 1523. Corequisites: RNSG 1229 and RNSG 1461, or consent of Program Director. Major Requirement: AAS – Nursing. 5 credit hours.

RNSG 2514 Integrated Care of the Client with Complex Health Care Needs
Application of a systematic problem-solving process and critical thinking skills to provide comprehensive nursing care to diverse clients/families across the lifespan with complex healthcare needs including, but not limited to, complex childhood/adolescent diseases, complicated perinatal care, acute mental illness, complex perioperative care, serious adult health problems and health issues related to aging. Emphasis on tertiary disease prevention, health maintenance/restoration and collaboration with members of the multidisciplinary healthcare team. Topics include the role of the nurse as client advocate and coordinator of care and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework. Focus on utilization of the nursing process to evaluate, analyze nursing care provided, with modifications to care to better meet individual client needs. Prerequisites: RNSG 1219, RNSG 1229, RNSG 1360, RNSG 1461, RNSG 1523, and RNSG 2504. Corequisite: RNSG 2460, or consent of Program Director. Major Requirement: AAS – Nursing. 5 credit hours. (W)

RNSG 2535 Integrated Client Care Management
Application of client assessment skills, critical thinking, and independent nursing interventions to care for diverse clients/families throughout the lifespan whose healthcare needs may be difficult to predict. Emphasis on collaborative clinical decision-making, nursing leadership skills, and client management. Topics include the significance of professional development, trends in nursing and healthcare, and applicable knowledge, judgment, skills, and professional values within a legal/ethical framework. Courses stresses implementation, analysis, and adaptation nursing care for client systems with advanced and integrated health needs/problems including their teaching/learning needs and transition into the role/competencies of the professional nurse. Prerequisites: RNSG 1219, RNSG 1229, RNSG 1360, RNSG 1461, RNSG 1523, RNSG 2461, RNSG 2504, and RNSG 2514. Corequisites: RNSG 2207 and RNSG 2561, or consent of Program Director. Major Requirement: AAS – Nursing. 5 credit hours. (W)

RNSG 2561 Clinical IV-Nursing-Registered Nurse Training
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Course focuses on transition for student nurse to the roles/competencies of the professional nurse utilizing nursing process to meet the advanced and integrated health needs of the client systems within hospital and community. Direct supervision is provided by the clinical professional and is an unpaid clinical experience. Prerequisites: RNSG 1360, RNSG 1461, RNSG 2460 and RNSG 2514. Corequisites: RNSG 2207 and RNSG 2535 or consent of Program Director. Major Requirement: AAS – Nursing. 5 credit hours.

RSPT 1160 Clinical I-Respiratory Care Therapist
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Consent of Program Director. Corequisite: Consent of Program Director. Major Requirement: AAS – Respiratory Care. 1 credit hour. (W)
RSPT 1201  Introduction to Respiratory Care
An introduction to the field of respiratory care. Topics include the history of respiratory care, hospital organization, medical malpractice, ethics, vital signs, body mechanics, basic cardiopulmonary assessment, infection control, and cardiopulmonary resuscitation (CPR). Lab required. Prerequisite: Admission to the Respiratory Care Program. Corequisites: RSPT 1307 and RSPT 1410. Major Requirement: AAS – Respiratory Care. 2 credit hours. (W)

RSPT 1307  Cardiopulmonary Anatomy and Physiology
An introduction to the anatomy and physiology of the cardiovascular and pulmonary systems. Lab required. Prerequisite: Admission to the Respiratory Care Program. Major Requirement: AAS – Respiratory Care. 3 credit hours. (W)

RSPT 1361  Clinical II-Respiratory Care Therapist
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RSPT 1160. Major Requirement: AAS Respiratory Care. 3 credit hours. (W)

RSPT 1362  Clinical III-Respiratory Care Therapist
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RSPT 1361. Major Requirement: AAS Respiratory Care. 3 credit hours. (W)

RSPT 1410  Respiratory Care Procedures I
Essential knowledge of the equipment and techniques used in the treatment of cardiopulmonary disease. Contents areas include: oxygen therapy, humidity and aerosol therapy, lung expansion therapy, bronchial hygiene therapy, pulse oximetry, arterial blood gas sampling, and interpretation. Lab required. Prerequisite: Admission to the Respiratory Care Program. Major Requirement: AAS – Respiratory Care. 4 credit hours. (W)

RSPT 1411  Respiratory Care Procedures II
Provides students with essential knowledge of airway care and mechanical ventilation. Airway care includes indications, techniques, equipment, and hazards and complications. Mechanical ventilation includes indications, initiation, modes, clinical application, management, complications, and weaning. Lab required. Prerequisite: RSPT 1410. Major Requirement: AAS – Respiratory Care. 4 credit hours. (W)

RSPT 2130  Respiratory Care Examination Preparation
Comprehensive review to optimize respiratory care credentialing exam success. Lab required. Prerequisites: RSPT 2255, RSPT 2353, and RSPT 2360. Corequisites: RSPT 2139, RSPT 2231, RSPT 2247, and RSPT 2361. Major Requirement: AAS – Respiratory Care. 1 credit hour. (W)

RSPT 2139  Advanced Cardiac Life Support
Advanced Cardiac Life Support (ACLS) with an emphasis on airway management. Designed to develop skills for resuscitation of the adult. Includes strategies for managing and stabilizing the cardiopulmonary arrested patient. May include certification. Prerequisites: RSPT 2255 and RSPT 2471. Corequisites: RSPT 2130, RSPT 2231, RSPT 2247, and RSPT 2361. Major Requirement: AAS – Respiratory Care. 1 credit hour. (W)

RSPT 2217  Respiratory Care Pharmacology
Formerly RSPT 2317
A study of drugs that affect cardiopulmonary systems. Emphasis on classifications, route of administration, dosages and calculations, and physiological interactions. Prerequisites: RSPT 1160, RSPT 1201, RSPT 1307, and RSPT 1410. Corequisites: RSPT 1361, RSPT 1411, and RSPT 2310. Major Requirement: AAS – Respiratory Care. 2 credit hours. (W)
RSPT 2231  Simulations in Respiratory Care  
Theory and history of clinical simulation examinations. Includes construction types, scoring, and mechanics of taking the computerized simulation examination. Lab required. Prerequisite: RSPT 2355. Major Requirement: AAS – Respiratory Care. 2 credit hours. (W)

RSPT 2247  Specialties in Respiratory Care  
Emerging and specialty practices in respiratory care. An introduction to areas of interest in which the Respiratory Therapist may find application and/or employment. The depth of instruction will provide the indications, expected outcomes, hazards and methods for hyperbaric oxygen (HBO), extracorporeal membrane oxygenation (ECMO), nitric oxide (NO), sleep studies, nutritional assessment, metabolic monitoring, exercise/stress testing, and electroencephalograms. Also includes home care/rehabilitation, and fluid and electrolyte balance. Prerequisite: RSPT 2453. Major Requirement: AAS – Respiratory Care. 2 credit hours. (W)

RSPT 2255  Critical Care Monitoring  
Formerly RSPT 2355  
Advanced monitoring techniques used clinically to assess a patient in the critical care setting. Lab required. Prerequisites: RSPT 1362 and RSPT 2471. Corequisites: RSPT 2353 and RSPT 2360. Major Requirements: AAS – Respiratory Care. 2 credit hours. (W)

RSPT 2310  Cardiopulmonary Disease  
Etiology, pathogenesis, pathology, diagnosis, history, prognosis, manifestations, treatment, and detection of cardiopulmonary diseases. Lab required. Prerequisites: RSPT 1307 and RSPT 1410. Corequisites: RSPT 1361, RSPT 1411, and RSPT 2217. Major Requirement: AAS – Respiratory Care. 3 credit hours. (W)

RSPT 2353  Neonatal/Pediatric Cardiopulmonary Care  
Formerly RSPT 2453  
Advanced study of acute care, monitoring, and management of the neonatal/pediatric patient. Lab required. Prerequisites: RSPT 1362 and RSPT 2471. Corequisites: RSPT 2255 and RSPT 2360. Major Requirement: AAS – Respiratory Care. 3 credit hours. (W)

RSPT 2360  Clinical IV-Respiratory Care Therapist  
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RSPT 1362. Major Requirement: AAS – Respiratory Care. 3 credit hours. (W)

RSPT 2361  Clinical V-Respiratory Care Therapist  
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: RSPT 2360. Corequisite: BIOL 2421 or consent of Program Director. Major Requirement: AAS – Respiratory Care. 3 credit hours. (W)

RSPT 2471  Respiratory Care Procedures III  
RSTO 1301  Beverage Management
A study of the beverage service of the hospitality industry including spirits, wines, beers, and non alcoholic beverages. Topics include purchasing, resource control, legislation, marketing, physical plant requirements, staffing, service, and the selection of wines to enhance foods. Students must be 21 years of age to take this course. 3 credit hours. (W)

RSTO 1304  Dining Room Service
Introduces the principles, concepts, and systems of professional table service. Topics include dining room organization, scheduling, and management of food service personnel. Prerequisite/Concurrent enrollment: CHEF 1314. 3 credit hours. (W)
Note: Culinary lab classes require extended periods of time standing in place, lifting heavy weights (up to 60 pounds), reaching, bending, and working around open flames and with cleaning chemicals.

RSTO 1325  Purchasing for Hospitality Operations
Study of purchasing and inventory management of foods and other supplies to include development of purchase specifications, determination of order quantities, formal and informal price comparisons, proper receiving procedures, storage management, and issue procedures. Emphasis on product cost analysis, yields, pricing formulas, controls, and record keeping at each stage of the purchasing cycle. 3 credit hours. (W)

RSTO 1380  Cooperative Education: Food and Beverage/Restaurant Operations Manager
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. Contact the Cooperative Work Experience Office. 3 credit hours. (W)

RSTO 2307  Catering
Principles, techniques, and applications for both on-premises, off-premises, and group marketing of catering operations including food preparation, holding, and transporting techniques. Lab required. 3 credit hours. (W)

RTVB 1329  Scriptwriting
Writing scripts for film and electronic media. Emphasizes format and style for commercials, public service announcements, promos, news, and documentaries. Lab required. Assessment: Placement in ENGL 1301 and College-Level Reading. 3 credit hours. (W)

RUSS 1411  Beginning Russian I
Introduction to the basic skills of speaking, reading, writing, and listening with attention to selected aspects of Russian culture; designed for students with little or no previous language training. Instruction is enhanced by the use of tapes, slides, computer software, and video cassettes. 4 credit hours.

RUSS 1412  Beginning Russian II
Continuation of RUSS 1411. Prerequisite: RUSS 1411 or consent of Instructor or Department Chair. 4 credit hours.

RUSS 2311  Intermediate Russian I
Intensive review of Russian grammar followed by continued development of speaking, listening, reading and writing skills. Instruction enhanced by slides, tapes, and other audio-visual aids. Prerequisite: RUSS 1412 or consent of Instructor or Department Chair. 3 credit hours.

RUSS 2312  Intermediate Russian II
Continuation of RUSS 2311. Instruction enhanced by slides, tapes, and other audio-visual aids. Prerequisite: RUSS 2311 or consent of Instructor or Department Chair. 3 credit hours.
SGNL 1401  American Sign Language (ASL): Beginning I  
Introduction to American Sign Language, Deaf culture, and to a brief history of sign and culture. Includes development of expressive and receptive sign skills, together with the learning of numbers, sign vocabulary, and the manual alphabet. Class is conducted primarily without voice. Lab required. 4 credit hours.

SGNL 1402  American Sign Language (ASL): Beginning II  
Study of sign vocabulary, numbers, fingerspelling and Deaf culture. Emphasizes further development of receptive skills, expressive skills, application of rudimentary syntactical and grammatical structures, and an understanding of Deaf and Hearing cultures. Class is conducted primarily without voice. Lab required. Prerequisite: SGNL 1401 or credit by exam. 4 credit hours.

SGNL 2301  American Sign Language (ASL): Intermediate I  
Includes the integration of ASL expressive and receptive skills using bilingual techniques. Also includes a study of vocabulary, idioms, culture, ASL linguistics, manual and non-manual aspects of ASL, and cross-cultural communication techniques. Highly interactive, centering on lab exercises, peer critiques, guest lectures, and on the application of basic ethical behavior. Class is conducted primarily without voice. Lab required. Prerequisite: SGNL 1402 or credit by exam. 3 credit hours.

SGNL 2302  American Sign Language (ASL): Intermediate II  
Continuation of SGNL 2301; further application of introductory level interpreting and transliterating skills with appropriate RID guidelines governing ethical behavior. Provides students the opportunity to interpret for guest speakers. Class is conducted primarily without voice. Lab required. Prerequisite: SGNL 2301 or credit by exam. 3 credit hours.

SLNG 1311  Fingerspelling and Numbers  
Development of expressive and receptive skills in fingerspelling and numbers. Receptive skills focus on whole word phrase recognition and fingerspelling/number comprehension in context. Expressive skills focus on the development of speed, clarity, and fluency. Through classroom and lab experience, this course will focus on the 26 hand configurations of the manual alphabet, numbers, and Fingerspelled Loan Signs. Additional receptive and expressive skill building for students to recognize: cardinal numbers, ordinal numbers, transitional handshapes, fractions, mathematical functions, monetary designations, time, age, and counting; as well as proper formation, placement, positioning, rhythm, and transitions of fingerspelled handshapes, states and cities and related fingerspelling theories and methodologies. This course is conducted primarily without voice. Lab required. Prerequisite/Concurrent enrollment: SGNL 1402. 3 credit hours. (W)

SLNG 1321  Introduction to the Interpreting Profession  
An overview of the field of American Sign Language (ASL)/English interpretation. Provides a historical framework for the current principles, ethics, roles, responsibilities, and standard practices of the interpreting profession. Lab required. Prerequisite/Concurrent enrollment: SGNL 2302. 3 credit hours. (W)

SLNG 1391  Special Topics in Sign Language Interpreter  
Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lab required. 3 credit hours. (W)
SLNG 1447  Deaf Culture
Historical and contemporary perspective of American Deaf culture using a socio-cultural model. Includes cultural identity and awareness, values, group norms, communication, language, and significant contributions made by D/deaf people to the world. Different views and theories will be introduced including developmental issues examined through psychological and sociocultural perspectives. Educational, social, and political factors unique to the Deaf community will be explored, as well as community organizations, impact of technology, and emerging issues/trends or advocacy within the Deaf community. This course is an introduction to the American Deaf Culture and components of the Deaf community. 4 credit hours. (W)

SLNG 2266  Practicum I-Sign Language Interpretation and Translation
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisite: SLNG 2301. 2 credit hours. (W)

SLNG 2267  Practicum II-Sign Language Interpretation and Translation
Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student. Prerequisites: SLNG 2266 and SLNG 2311 or SLNG 2331. 2 credit hours. (W)

SLNG 2301  Interpreting I
An overview of the interpreting process and models of interpretation. Introduces the skills necessary to achieve dynamic message equivalence in interpreting American Sign Language (ASL) to English and English to ASL. This course focuses on skills building and developing fluency in interpreting. Continuing to incorporate and add to information from SLNG 1321 such as the physical and mental requirements of interpreting, the TX DARS/ODHHS/BEI and National RID Professional Code of Conduct, and general business practices. Includes methods and techniques of interpreting through practical application by using role-plays. Continued focus on the differences between interpreting and transliterating and various special settings. This class is conducted with and without voice. Lab required. Prerequisite: SLNG 1321. 3 credit hours. (W)

SLNG 2311  Interpreting in Specialized Settings
Overview of interpreting/transliterating with special populations (e.g., deaf/blind, high visual, oral) and/or special settings (e.g., religious, artistic, medical, legal, mental health). Reinforces interpreting theories and techniques in relation to the special population(s) and/or setting(s). This course includes special settings such as educational, mental health, medical, legal, employment-related, artistic and platform interpreting. Continued focus on skill building, physical and mental requirements of interpreting, RID Code of Ethics, methods and techniques of interpreting through practical application, voice interpreting, use of role plays, and differences between interpreting and transliterating in various theoretical models. Lab required. Prerequisite: SLNG 2301. 3 credit hours. (W)

SLNG 2331  Interpreting III
A practice-oriented course to strengthen skills in the integration and application of interpreting using complex source materials. Continued exposure to simulated interpreting/transliterating experiences. The course will develop voicing skills with a focus on chunking, dynamic equivalence, word selection, register, receptive skills, proper location of voice interpreters, team interpreting, the use of a CDI, and other aspects of voicing. Special requirements of voice interpreting will also be included, such as methods and techniques of voice-overs, voicing for Deaf individuals who use ASL, as well as Deaf individuals who may not use ASL. Lab required. Prerequisite: SLNG 2301 or SLNG 2311, or state or national interpreter certification. 3 credit hours. (W)

SMFT 1343  Semiconductor Manufacturing Technology I
A study of the processes, materials, and equipment used in the manufacturing of semiconductors, including an overview of the semiconductor industry, related terminology, and standard safety practice. Lab required. 3 credit hours. (W)
SMFT 1370  Introduction to Silicon Solar Cell Engineering
The chemistry, device physics, and materials science of Photovoltaic Solar Cell technology which results in the production of electricity from sunlight is covered. An overview of the process flows used to manufacture solar cells, the resulting device characteristics, the variety of solar cell structures and the solid state electronics characterization of the structures is presented. The course is taught from an operations perspective using an appropriate level of mathematics for comprehension. Lab required. 3 credit hours. (W)

SMFT 1372  Introduction to Silicon Solar Cell Manufacturing
The course covers the fundamentals of silicon Photovoltaic Solar Cell fabrication from ingot to the final solar cell array. The basic chemistry, physics, and materials science of the fabrication process is presented. The course is taught from an operations perspective using an appropriate level of mathematics for comprehension. Lab required. 3 credit hours. (W)

SMFT 1374  Intro to Materials Tech, Measurement Tech & Characterization Meth Used in Semiconductor Solar Cell Manufacturing
The course will include an in-depth coverage of materials measurement techniques, statistical process control/capability analysis, six sigma process characterization, and FEMA from the perspective of Photovoltaic Solar Cell materials characterization, electrical characterization and optical characterization technology and techniques. The course is taught from an operations perspective using an appropriate level of mathematics for comprehension. Lab required. Prerequisites: SMFT 1370 and SMFT 1372, or consent of Program Director. 3 credit hours. (W)

SMFT 1471  Fundamentals of Solar Cell Engineering
The chemistry, device physics, and materials science of Photovoltaic Solar Cell technology which results in the production of electricity from sunlight is covered. An overview of the process flows used to manufacture solar cells, the resulting device characteristics, the variety of solar cell structures and the solid state electronics characterization of the structures is presented. The course is taught from an engineering perspective using an appropriate level of mathematics for the engineering models presented. Lab required. Prerequisite: MATH 1314 or consent of Program Director. 4 credit hours. (W)

SMFT 1473  Fundamentals of Solar Cell Manufacturing
The course covers the fundamentals of Photovoltaic Solar Cell fabrication from ingot to the final solar cell array. The basic chemistry, physics, and materials science of the fabrication process is presented. The course is taught from an engineering perspective using an appropriate level of mathematics for the engineering models presented. Lab required. Prerequisite: MATH 1314 or consent of Program Director. 4 credit hours. (W)

SMFT 1475  Materials Tech, Measurement Tech & Characterization Meth used in Semiconductor Solar Cell Manufacturing
The course will include an in-depth coverage of materials measurement techniques, statistical process control/capability analysis, six sigma process characterization, and FEMA from the perspective of Photovoltaic Solar Cell materials characterization, electrical characterization and optical characterization technology and techniques. The course is taught from an engineering perspective using an appropriate level of mathematics for the engineering models presented. Lab required. Prerequisites: SMFT 1471 and SMFT 1473, or consent of Program Director. 4 credit hours. (W)

SMFT 2343  Semiconductor Manufacturing Technology II
The continuation of Semiconductor Manufacturing Technology I covering the processes, materials, and equipment used in the manufacturing of semiconductors. Topics address process-yield analysis and process troubleshooting. Lab required. Prerequisite: SMFT 1343 or consent of Instructor or Program Director. 3 credit hours. (W)
SMFT 2370  Semiconductor Solar Cell Manufacturing Facilities, Methods and Safety
The course describes the facilities in which semiconductor solar cells are manufactured and the requirements for cleanliness in the facilities. The materials used to fabricate solar cells are described along with the safety implications of utilizing these materials. Methods of manufacturing work flow and the facilitation/use of vacuum systems, continuous flow fabrication systems and industrial test equipment are discussed in detail. Lab required. 3 credit hours. (W)

SMFT 2379  Advanced Topics in Solar Cell Design
The course reviews current advanced topics in solar cell design from the current literature, current conference records and current workshops. Relationships between the customary approaches in production and the advanced designs are sought and are rendered. Discussions of the production worthiness of the advanced designs result in technical assessment of the design's worthiness for fabrication and a cost benefit analysis. Lab required. Prerequisite: MATH 2413 or consent of Program Director. 3 credit hours. (W)

SMFT 2471  Advanced Solar Cell Design and Engineering
In-depth coverage of advanced semiconductor solar cell structures incorporated in industrial production today, in process development for tomorrow and in the feasibility and concept phase for the future. Lab required. Prerequisite: MATH 2413 or consent of Program Director. 4 credit hours. (W)

SOCI 1301  Introduction to Sociology
Introduction to the scientific study of social factors that influence human behavior. Includes analysis of culture and socialization processes, social interaction, deviance, social stratification/inequality, race relations, global interdependence, and gender. Assessment: Placement ENGL 1301; College-Level Reading. 3 credit hours.

SOCI 1306  Social Problems
In-depth examination of selected social problems, their nature, cause, extent, and effects upon society. Social problems will be analyzed at the local, state, national, and international levels. Includes inequality based on race, gender, age, and class. Assessment: Placement ENGL 1301. 3 credit hours.

SOCI 2301  Marriage and Family
A functional approach to understanding the structural, developmental, and institutional aspects of marriage; a multicultural perspective on the family with consideration given to courtship, mate selection, marriage and its dynamics, conflict, family violence, child-rearing patterns, the later years of marriage, divorce, and remarriage. Assessment: Placement ENGL 1301. 3 credit hours.

SOCI 2306  Human Sexuality
Understanding of human sexuality; includes an appreciation of different approaches to sexuality as well as an awareness of one’s own sexuality and its impact on adjustment to life. Assessment: Placement ENGL 1301; College-Level Reading. 3 credit hours.

Note: Student may take either PSYC 2306 or SOCI 2306 but not both.

SOCI 2319  Minority Studies
Examines the historical, social, and cultural factors that account for present circumstances and affect future prospects of specific subordinate groups in society. Special emphasis on the causes, persistence, and consequences of prejudice and discrimination and the ways and extent to which each may be reduced. Assessment: Placement ENGL 1301; College-Level Reading. 3 credit hours.

SOCI 2340  Drug Use and Abuse
This course is the study of the use and abuse of drugs in today's society with emphasis on the physiological, psychological, and sociological factors that contribute to this behavior. Assessment: Placement ENGL 1301; College-Level Reading. 3 credit hours.
**SOCI 2389  Academic Co-op Sociology**
Integrates on-campus study with practical hands-on work experience in sociology. In conjunction with class seminars, the student will set specific goals and objectives in the study of sociology. Contact the Cooperative Work Experience Office. Assessment: Placement ENGL 1301. Prerequisite: Consent of Instructor. 3 credit hours.

**SOCW 2361  Introduction to Social Work**
An overview of the history, fields, skills, and values of social work practice in the United States. Includes volunteer placement with a social service agency (Service Learning). Assessment: Placement ENGL 1301; College-Level Reading. 3 credit hours.

**SOCW 2362  Social Welfare**
This course provides an overview of contemporary social welfare including income support services, mental health services and services for children and families. It includes an examination of social welfare policy and programs. Assessment: Placement ENGL 1301; College-Level Reading. Prerequisite/Concurrent enrollment: SOCW 2361. 3 credit hours.

**SPAN 1300  Conversational Spanish I**
Intensive practice in spoken Spanish. Prerequisite: SPAN 1412 or consent of Instructor or Department Chair. 3 credit hours.

**SPAN 1310  Conversational Spanish II**
Continuation of Spanish 1300. Prerequisite: SPAN 1300 or consent of Instructor or Department Chair. 3 credit hours.

**SPAN 1411  Beginning Spanish I**
Introduction to the four basic skills of speaking, reading, writing and listening to Spanish with attention to selected aspects of Hispanic culture; designed for students with little or no previous language training. Instruction enhanced by the use of slides, tapes, computer software, and video cassettes. 4 credit hours.

**SPAN 1412  Beginning Spanish II**
Continuation of SPAN 1411. Prerequisite: SPAN 1411 or consent of Instructor or Department Chair. 4 credit hours.

**SPAN 2311  Intermediate Spanish I**
Continued development of speaking, listening, reading and writing skills. Instruction enhanced by the use of slides, tapes and other audio-visual aids. Prerequisite: SPAN 1412 or consent of Instructor or Department Chair. 3 credit hours.

**SPAN 2312  Intermediate Spanish II**
Extensive written and oral work and extensive reading of literary works in Spanish of moderate difficulty. Prerequisite: SPAN 2311 or consent of Instructor or Department Chair. 3 credit hours.

**SPAN 2313  Spanish for Native Speakers I**
Designed for students for whom Spanish is the primary or secondary method of communication at home, but who have no formal instruction in the language. In addition to grammar and vocabulary review, this course will allow students to develop advanced written and oral communication skills. Prerequisite: SPAN 1412 or consent of Instructor or Department Chair. 3 credit hours.

**SPAN 2315  Spanish for Native Speakers II**
Designed for students for whom Spanish is the primary or secondary method of communication at home, but who have no formal instruction in the language. In addition to grammar and vocabulary review, this course will allow students to develop advanced written and oral communication skills. Prerequisite: SPAN 2313 or consent of Instructor or Department Chair. 3 credit hours.
SPAN 2321  Spanish Literature I
Study of Spanish literature from its origin to 1700. Lectures, discussions, and reading of major literary works with some attention to historical contexts. Prerequisite: SPAN 2312 or consent of Instructor or Department Chair. 3 credit hours.

SPAN 2322  Spanish Literature II
Study of Spanish literature from 1700 to the present. Lectures, discussions, and readings of major literary works with some attention to historical contexts. Prerequisite: SPAN 2312 or consent of Instructor or Department Chair. 3 credit hours.

SPCH 1144  Forensic Activities I
This course consists of laboratory/practicum experience for students who participate in the preparation of forensic activities. 1 credit hour.

SPCH 1311  Fundamentals of Speech Communication
Survey of basic factors affecting human interaction through communication; emphasis on the development of oral communication competencies; practice in delivering oral presentations. Assessment: Placement ENGL 1301; College-Level Reading. 3 credit hours.

SPCH 1315  Public Speaking I
Study and practice in the preparation and delivery of oral presentations; practice in different types of speeches and forms of delivery; evaluation of speakers and speeches. Assessment: Placement ENGL 1301; College-Level Reading. 3 credit hours.

SPCH 1318  Interpersonal Communication
Theories and exercises in verbal and nonverbal communication with focus on interpersonal relationships. The course focuses on interpersonal contexts such as gender communication, romantic and family relationships, conflict, intercultural communication, and listening. Assessment: Placement ENGL 1301; College-Level Reading. 3 credit hours.

SPCH 1321  Business and Professional Speaking
Study of the importance of oral communication in business; practice in small group communication; study of the relationship of communication to organizational conflict, management and international business; practice in conducting and participating in business interviews and presentations. Assessment: Placement ENGL 1301; College-Level Reading. 3 credit hours.

SPCH 2335  Argumentation and Debate
This course introduces the students to various argumentation techniques. The student will learn basic research skills and methods of cataloging evidence. The student will learn to organize and present ideas in effective communication paradigms. Individual debate and team formats will be demonstrated. 3 credit hours.

SPCH 2389  Academic Co-op Speech
Integrates on-campus study with practical hands-on work experience in speech. In conjunction with class seminars, the student will set specific goals and objectives in the study of speech. Contact the Cooperative Work Experience Office. Assessment: Placement ENGL 1301; College-Level Reading. 3 credit hours.

SRGT 1160  Clinical-Surgical Technology I
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: Admission to the Surgical Technology Program. Corequisite: SRGT 1409, or consent of Program Director. Major Requirement: AAS – Surgical Technology. 1 credit hour. (W)
SRGT 1161  Clinical-Surgical Technology II
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisites: SRGT 1160 and SRGT 1409. Corequisite: SRGT 1541, or consent of Program Director. Major Requirement: AAS – Surgical Technology. 1 credit hour. (W)

SRGT 1171  Transition to Practice for the Surgical Technologist
This course provides surgical technology students with information and skills to assist in transition from the role of student to the role of a practicing surgical technologist. Information gained about high performance work teams is applied to the surgical setting. Service quality management and diversity concepts are applied to surgical settings. Lab included. Prerequisites: SRGT 1542 and SRGT 2260. Corequisites: SRGT 2130 and SRGT 2361, or consent of Program Director. Major Requirement: AAS – Surgical Technology. 1 credit hour. (W)

SRGT 1301  Medical Terminology I
Study of the basic structure of medical words including prefixes, suffixes, roots, combining forms, plurals, pronunciation, spelling, and the definitions of medical terms. Emphasis is on building a professional vocabulary required for employment within the allied health care professions. 3 credit hours. (W)

SRGT 1409  Fundamentals of Peri-operative Concepts and Techniques
In-depth coverage of peri-operative concepts such as aseptic principles and practices, infectious processes, wound healing, and creation and maintenance of the sterile field. In addition, peri-operative, intra-operative and post operative patient care concepts, the role of the surgical technologist on the surgical team, development of a surgical conscience; critical thinking; ethical and legal aspects and basic concepts of workplace management are reviewed. Lab included. Prerequisite: Admission to the Surgical Technology Program. Corequisites: HPRS 2201, and SRGT 1160, or consent of Program Director. Major Requirement: AAS – Surgical Technology. 4 credit hours. (W)

SRGT 1541  Surgical Procedures I
Introduction to surgical procedures and related pathologies. Emphasis on surgical procedures related to the general, obstetrics/gynecology, genitourinary, otorhinolaryngology, and orthopedic surgical specialties incorporating instruments, equipment, and supplies required for peri-operative patient care. Lab required. Prerequisites: HPRS 2201, SRGT 1160, and SRGT 1409. Corequisites: MDCA 1348 and SRGT 1161, or consent of Program Director. Major Requirement: AAS – Surgical Technology. 5 credit hours. (W)

SRGT 1542  Surgical Procedures II
Introduction to surgical procedures and related pathologies. Emphasis on surgical procedures related to the thoracic, peripheral vascular, plastic/reconstructive, ophthalmology, cardiac, and neurological surgical specialties incorporating instruments, equipment, and supplies required for peri-operative patient care. Lab required. Prerequisites: SRGT 1161 and SRGT 1541. Corequisite: SRGT 2260, or consent of Program Director. Major Requirement: AAS – Surgical Technology. 5 credit hours. (W)

SRGT 2130  Professional Readiness
Transition into the professional role of the surgical technologist. Includes professional readiness for employment, attaining certification, and maintaining certification status. A capstone experience may be included. Prerequisites: SRGT 1542 and SRGT 2260. Corequisites: SRGT 1171 and SRGT 2361, or consent of Program Director. Major Requirement: AAS – Surgical Technology. 1 credit hour. (W)

SRGT 2260  Clinical-Surgical Technology III
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisites: SRGT 1161 and SRGT 1541. Corequisite: SRGT 1542, or consent of Program Director. Major Requirement: AAS – Surgical Technology. 2 credit hours. (W)
SRGT 2361  Clinical-Surgical Technology IV  
A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisites: SRGT 1542 and SRGT 2260. Corequisites: SRGT 1171 and SRGT 2130, or consent of Program Director. Major Requirement: AAS – Surgical Technology. 3 credit hours. (W)

TECA 1303  Family, School, and Community  
A study of the relationship among the child, family, community and schools, including parent education and involvement, family and community lifestyles, child abuse, and current family life issues. Lab required. Assessment: Placement in ENGL 0315; READ 0310. 3 credit hours.

TECA 1311  Educating Young Children  
An introduction to the education of the young child, including developmentally appropriate practices and programs, theoretical and historical perspectives, ethical and professional responsibilities and current issues. Lab required. Assessment: Placement in ENGL 0315; READ 0310. 3 credit hours.

TECA 1318  Wellness of the Young Child  
A study of the factors that impact the well-being of the young child including healthy behavior, food nutrition, fitness, and safety practices. Focus on local and national standards and legal implications of relevant policies and regulations. Lab required. Assessment: Placement in ENGL 0315; READ 0310. 3 credit hours.

TECA 1354  Child Growth and Development  
A study of the physical, emotional, social and cognitive factors of growth and development of children birth through adolescence. Assessment: Placement in ENGL 0315; READ 0310. 3 credit hours.

TRVM 1327  Special Events Design  
The development of a special event from the conceptual stage through completion. Emphasis on industry terminology, factors to consider when planning a special event, and contingency plans. 3 credit hours. (W)

TRVM 1380  Cooperative Education-Tourism and Travel Service Management  
Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component. 3 credit hours. (W)

TRVM 2301  Introduction to Convention/Meeting Management  
Overview of the meetings and convention industry and the various aspects and skills involved in planning and managing meeting, conventions, and expositions. Emphasis on types of meetings, meeting markets, industry suppliers, budget and program planning, site selection and contract negotiations, registration and housing, food and beverage requirements, function and meeting room setup, and audiovisual requirements. 3 credit hours. (W)

TRVM 2333  Applied Convention/Meetings Management  
Practical application of meetings and exposition skills through a case study or participation in a conference/meeting. Includes integration of meeting planning tools that compare and discriminate between key areas of program development and convention objectives. Prerequisite: TRVM 2301 or consent of Instructor or Department Chair. 3 credit hours. (W)

TRVM 2355  Exposition and Trade Show Operations  
A discussion of management of the specific problems of trade shows and exhibitions, including design, construction, and regulation. Includes logistics for planning events, such as crowd control, special effects, lighting, decorations and audio. Procedures for conducting fairs, festivals, sports events, and grand openings. 3 credit hours. (W)