

Academic Programs Course Descriptions

ACADEMIC RELATED

ACA 115 Success and Study Skills 0 2 0 0 1

This course provides an orientation to the campus resources and academic skills necessary to achieve educational objectives. Emphasis is placed on an exploration of facilities and services, study skills, library skills, self-assessment, wellness, goal-setting, and critical thinking. Upon completion, students should be able to manage their learning experiences to successfully meet educational goals. This course will include topics such as learning style, online readiness, and personality types.

ACA 122 College Transfer Success 0 2 0 0 1

This course provides information and strategies necessary to develop clear academic and professional goals beyond the community college experience. Topics include the CAA, college policies and culture, career exploration, gathering information on senior institutions, strategic planning, critical thinking, and communications skills for a successful academic transition. Upon completion, students should be able to develop an academic plan to transition successfully to senior institutions. This is a required course for the Associate in Arts and Associate in Science degrees.

ACCOUNTING

ACC 120 Principles of Financial Accounting 3 2 0 0 4

This course introduces business decision-making using accounting information systems. Emphasis is placed on analyzing, summarizing, reporting, and interpreting financial information. Upon completion, students should be able to prepare financial statements, understand the role of financial information in decision-making and address ethical considerations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. (Offered in spring, summer, and fall semesters)

ACC 121 Principles of Managerial Accounting 3 2 0 0 4 Prerequisites: ACC 120

This course includes a greater emphasis on managerial and cost accounting skills. Emphasis is placed on managerial accounting concepts for external and internal analysis, reporting and decision-making. Upon completion, students should be able to analyze and interpret transactions relating to managerial concepts including product-costing systems. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. (Offered in fall semester)

ACC 122 Principles of Financial Accounting II 3 0 0 0 3 Prerequisites: ACC 120

This course provides additional instruction in the financial accounting concepts and procedures introduced in ACC 120. Emphasis is placed on the analysis of specific balance sheet accounts, with in-depth instruction of the accounting principles applied to these accounts. Upon completion, students should be able to analyze data, prepare journal entries, and prepare reports in compliance with generally accepted accounting principles. (Offered in spring and summer semesters)

ACC 129 Individual Income Taxes 2 2 0 0 3

This course introduces the relevant laws governing individual income taxation. Topics include tax law, electronic research and methodologies, and the use of technology for preparation of individual income tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete various individual tax forms. (Offered in fall semester)

ACC 140 Payroll Accounting 1 2 0 0 2

Prerequisites: ACC 115 or ACC 120

This course covers federal and state laws pertaining to wages, payroll taxes, payroll tax forms, and journal and general ledger transactions. Emphasis is placed on computing wages; calculating social security, income, and unemployment taxes; preparing appropriate payroll tax forms; and journalizing/posting transactions. Upon completion, students should be able to analyze data, make appropriate computations, complete forms, and prepare accounting entries using appropriate technology. (Offered in spring semester)

ACC 150 Acct Software Applications 1 2 0 0 2

Prerequisites: ACC 115 or ACC 120

This course introduces microcomputer applications related to accounting systems. Topics include general ledger, accounts receivable, accounts payable, inventory, payroll, and correcting, adjusting, and closing entries. Upon completion, students should be able to use a computer accounting package to solve accounting problems. (Offered in spring semester)

ACC 220 Intermediate Accounting I 3 2 0 0 4

Prerequisites: ACC 120

This course is a continuation of the study of accounting principles with in-depth coverage of theoretical concepts and financial statements. Topics include generally accepted accounting principles and extensive analysis of balance sheet components. Upon completion, students should be able to demonstrate competence in the conceptual framework underlying financial accounting, including the application of financial standards. (Offered in fall semester)

ACC 227 Practices in Accounting 3 0 0 0 3

Prerequisites: ACC 220

This course provides an advanced in-depth study of selected topics in accounting using case studies and individual and group problem solving. Topics include cash flow, financial statement analysis, individual and group problem solving, and practical approaches to dealing with clients, ethics, and critical thinking. Upon completion, students should be able to demonstrate competent analytical skills and effective communication of their analysis in written and/or oral presentations. (Offered in spring semester)

AGRICULTURE

AGR 121 Biological Pest Mgmt 3 0 0 0 3

This course will emphasize the building and maintaining of healthy soil, plant and insect biological cycles as the key to pest and disease management. Course content includes study of major pests and diseases, including structure, life cycle, and favored hosts; and biological and least toxic methods of chemical control. Upon completion, students will be able to identify and recommend methods of prevention and control of selected insects and diseases.

AGR 265 Organic Crop Prod: Spring 2 2 0 0 3

This course includes a study of spring organic crop production practices, including vegetables, cut flowers, and culinary and medicinal herbs. Topics include variety selection, production methods, and record keeping procedures for certification. Upon completion, students will be able to demonstrate a knowledge of organic crop production appropriate for the spring season.

AGR 267 Permaculture 2 2 0 0 3

This course introduces the design of sustainable human habitats as part of a sustainable system, with emphasis placed on living systems of the temperate region. Topics include fundamentals of permaculture system design for farms, including gardens, fields, water, animals, buildings, economics, and society. Upon completion, students should be able to design a functional holistic farm system.

ALTERNATIVE ENERGY TECHNOLOGY**ALT 120 Renewable Energy Tech 2 2 0 0 3**

This course provides an introduction to multiple technologies that allow for the production and conservation of energy from renewable sources. Topics include hydro-electric, wind power, passive and active solar energy, tidal energy; appropriate building techniques, and energy conservation methods. Upon completion, students should be able to demonstrate an understanding of renewable energy production and its impact on humans and their environment.

ANTHROPOLOGY**ANT 210 General Anthropology 3 0 0 0 3**

This course introduces the physical, archaeological, linguistic, and ethnological fields of anthropology. Topics include human origins, genetic variations, archaeology, linguistics, primatology, and contemporary cultures. Upon completion, students should be able to demonstrate an understanding of the four major fields of anthropology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

ART**ART 111 Art Appreciation 3 0 0 0 3**

This course introduces the origins and historical development of art. Emphasis is placed on the relationship of design principles to various art forms including but not limited to sculpture, painting, and architecture. Upon completion, students should be able to identify and analyze a variety of artistic styles, periods, and media. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education humanities/fine arts requirement for the Associate in Arts and the Associate in Science Degrees.

ART 114 Art History Survey I 3 0 0 0 3

This course covers the development of art forms from ancient times to the Renaissance. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education humanities/fine arts requirement for the Associate in Arts and the Associate in Science Degrees.

ART 115 Art History Survey II 3 0 0 0 3

This course covers the development of art forms from the Renaissance to the present. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education humanities/fine arts requirement for the Associate in Arts and the Associate in Science Degrees.

ART 120 3D Printing for the Artist 2 3 0 0 3
Prerequisites: TDP 110

This course provides an introduction to three-dimensional design principles using the basic techniques surrounding 3D Printing. Emphasis is placed on creating expressive works using 3D printing. Upon completion, students should be able to demonstrate an understanding of three-dimensional design as well as demonstrate an ability to create and print an advanced creative project.

ART 121 Two-Dimensional Design 0 6 0 0 3

This course introduces the elements and principles of design as applied to two-dimensional art. Emphasis is placed on the structural elements, the principles of visual organization, and the theories of

color mixing and interaction. Upon completion, students should be able to understand and use critical and analytical approaches as they apply to two-dimensional visual art. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A Course fee is required.

ART 122 Three-Dimensional Design 0 6 0 0 3

This course introduces basic studio problems in three-dimensional visual design. Emphasis is placed on the structural elements and organizational principles as applied to mass and space. Upon completion, students should be able to apply three-dimensional design concepts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 131 Drawing I 0 6 0 0 3

This course introduces the language of drawing and the use of various drawing materials. Emphasis is placed on drawing techniques, media, and graphic principles. Upon completion, students should be able to demonstrate competence in the use of graphic form and various drawing processes. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 132 Drawing II 0 6 0 0 3**Prerequisites: ART 131**

This course continues instruction in the language of drawing and the use of various materials. Emphasis is placed on experimentation in the use of drawing techniques, media, and graphic materials. Upon completion, students should be able to demonstrate increased competence in the expressive use of graphic form and techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. A course fee is required.

ART 135 Figure Drawing I 0 6 0 0 3**Prerequisites: ART 131**

This course introduces rendering the human figure with various drawing materials. Emphasis is placed on the use of the visual elements, anatomy, and proportion in the representation of the draped and undraped figure. Upon completion, students should be able to demonstrate competence in drawing the human figure. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 171 Computer Art I 0 6 0 0 3

This course introduces the use of the computer as a tool for solving visual problems. Emphasis is placed on fundamentals of computer literacy and design through bit-mapped image manipulation. Upon completion, students should be able to demonstrate an understanding of paint programs, printers, and scanners to capture, manipulate, and output images. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 214 Portfolio and Resume 0 2 0 0 1

This course covers resume writing, interview skills, and the preparation and presentation of an art portfolio. Emphasis is placed on the preparation of a portfolio of original artwork, the preparation of a photographic portfolio, approaches to resume writing, and interview techniques. Upon completion, students should be able to mount original art for portfolio presentation, photograph and display a professional slide portfolio, and write an effective resume. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 231 Printmaking I 0 6 0 0 3

This course introduces printmaking: its history, development techniques, and processes. Emphasis is placed on basic applications with investigation into image source and development. Upon completion, students should be able to produce printed images utilizing a variety of methods. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 232 Printmaking II 0 6 0 0 3**Prerequisites: ART 231**

This course includes additional methods and printmaking processes. Emphasis is placed on the printed image as related to method, source, and concept. Upon completion, students should be able to produce expressive images utilizing both traditional and innovative methods. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 235 Figure Drawing II 0 6 0 0 3**Prerequisites: ART 135**

This course extends the study and rendering of the draped and undraped human figure. Emphasis is placed on the exploration of materials and approaches to drawing. Upon completion, students should be able to demonstrate creativity in the representation of the figure. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 240 Painting I 0 6 0 0 3

This course introduces the language of painting and the use of various painting materials. Emphasis is placed on the understanding and use of various painting techniques, media, and color principles. Upon completion, students should be able to demonstrate competence in the use of creative processes directed toward the development of expressive form. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 241 Painting II 0 6 0 0 3**Prerequisites: ART 240**

This course provides a continuing investigation of the materials, processes, and techniques of painting. Emphasis is placed on the exploration of expressive content using a variety of creative processes. Upon completion, students should be able to demonstrate competence in the expanded use of form and variety. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 264 Digital Photography I 1 4 0 0 3

This course introduces digital photographic equipment, theory and processes. Emphasis is placed on camera operation, composition, computer photo manipulation and creative expression. Upon completion, students should be able to successfully expose, digitally manipulate, and print a well-conceived composition. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 265 Digital Photography II 1 4 0 0 3**Prerequisites: ART 264**

This course provides exploration of the concepts and processes of photo manipulation through complex composite images, special effects, color balancing and image/text integration. Emphasis is placed on creating a personal vision and style. Upon completion, students should be able to produce well-executed images using a variety of photographic and photo manipulative approaches. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 266 Videography I 0 6 0 0 3

This course introduces various aspects of basic video production including concept development, scripting, camera operation, and post-production. Emphasis is placed on creative expression, camera handling, story boarding, and editing. Upon completion, students should be able to demonstrate a basic understanding of video camera operation and production techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 267 Videography II 0 6 0 0 3**Prerequisites: ART 266**

This course is designed to provide a framework for the production of a long-term video project. Emphasis is placed on realization of the unique creative vision. Upon completion, students should be able to produce a thematically coherent, edited video with sound and titling. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ART 271 Computer Art II 0 6 0 0 3**Prerequisites: ART 171**

This course includes advanced computer imaging techniques. Emphasis is placed on creative applications of digital technology. Upon completion, students should be able to demonstrate command of computer systems and applications to express their personal vision. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 281 Sculpture I 0 6 0 0 3

This course provides an exploration of the creative and technical methods of sculpture with focus on the traditional processes. Emphasis is placed on developing basic skills as they pertain to three-dimensional expression in various media. Upon completion, students should be able to show competence in a variety of sculptural approaches. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 282 Sculpture II 0 6 0 0 3**Prerequisites: ART 281**

This course builds on the visual and technical skills learned in ART 281. Emphasis is placed on developing original solutions to sculptural problems in a variety of media. Upon completion, students should be able to express individual ideas using the techniques and materials of sculpture. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A course fee is required.

ART 283 Ceramics I 0 6 0 0 3

This course provides an introduction to three-dimensional design principles using the medium of clay. Emphasis is placed on fundamentals of forming, surface design, glaze application, and firing. Upon completion, students should be able to demonstrate skills in slab and coil construction, simple wheel forms, glaze technique, and creative expression. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. A course fee is required.

ART 284 Ceramics II 0 6 0 0 3

Prerequisites: ART 283

This course covers advanced hand building and wheel techniques. Emphasis is placed on creative expression, surface design, sculptural quality, and glaze effect. Upon completion, students should be able to determine a high level of technical competence in forming and glazing with a development of three - dimensional awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. A course fee is required.

AMERICAN SIGN LANGUAGE**ASL 111 Elementary ASL I 3 0 0 0 3**

This course introduces the fundamental elements of American Sign Language within a cultural context. Emphasis is placed on the development of basic expressive and receptive skills. Upon completion, students will be able to comprehend and respond with grammatical accuracy to expressive American Sign Language and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. (Offered fall and spring semesters)

ASL 112 Elementary ASL II 3 0 0 0 3

Prerequisites: ASL 111

This course is a continuation of ASL 111 focusing on the fundamental elements of American Sign Language in a cultural context. Emphasis is placed on the progressive development of expressive and receptive skills. Upon completion, the students should be able to comprehend and respond with increasing accuracy to expressive American Sign Language and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. (Offered fall and spring semesters)

ASL 181 ASL Lab I 0 2 0 0 1

This course provides an opportunity to enhance acquisition of the fundamental elements of American Sign Language. Emphasis is placed on the progressive development of basic expressive and receptive skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to expressive American Sign Language and demonstrate cultural awareness. (Offered fall and spring semesters)

ASL 182 ASL Lab 2 0 2 0 0 1

This course provides an opportunity to enhance acquisition of the fundamental elements of American Sign Language. Emphasis is placed on the progressive development of basic expressive and receptive skills through the use of supplementary learning media and materials. Upon completion students should be able to comprehend and respond with increasing proficiency to expressive American Sign Language and demonstrate cultural awareness. (Offered fall and spring semesters)

ASL 211 Intermediate ASL I 3 0 0 0 3

Prerequisites: ASL 112

This course provides a review and expansion of the essential skills of American Sign Language. Emphasis is placed on the progressive development of expressive and receptive skills, study of authentic and representative literacy and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively using American Sign Language about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. (Offered spring semester)

ASL 212 Intermediate ASL II 3 0 0 0 3

Prerequisites: ASL 211

This course provides a continuation of ASL 211. Emphasis is placed on the continuing development of expressive and receptive skills, with study of authentic and representative literacy and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. (Offered spring semester)

ASL 221 Advanced ASL I 3 0 0 0 3

Prerequisites: ASL 212

This course provides an expansion of the essential and advanced skills of ASL, including advanced vocabulary, lexicalized fingerspelling, and complex grammatical structures. Emphasis is placed on the advanced development of expressive, receptive and conversational skills, study of authentic and representative literacy and cultural texts. Upon completion, students will communicate more accurately with advanced complexity, and to present the topics in the various registers, pragmatics and genres of ASL. (Offered summer semester)

ASL 222 Advanced ASL II 3 0 0 0 3

Prerequisites: ASL 221

This course provides more expansion of the essential and advanced skills of ASL, including advanced vocabulary, lexicalized fingerspelling, storytelling, and complex grammatical structures. Emphasis is placed on the more advanced development of expressive, receptive, conversational and presentational skills in a variety of discourse genres. Upon completion, students should be able to debate and lecture with advanced complexity, create storytelling, and to present the complementary issues of Deaf community. (Offered fall semester)

ASL 225 Global Deaf Community 3 0 0 0 3

This course provides an overview of issues related to D/deaf people focusing on Deaf history, causes of deafness, communication, and attitudes toward D/deaf people globally. Emphasis is placed on deaf history, causes of deafness, communication, and attitude toward D/ deaf people. Upon completion, students should be able to discuss significant issues related to deafness. (Offered fall semester)

ASL 250 Linguistics of ASL 3 0 0 0 3

Prerequisites: ASL 112

This course is designed to increase knowledge and skills necessary to linguistically analyze ASL. Emphasis is placed on applying phonology, morphology, syntax, semantics, discourse and socio-linguistics of ASL. Upon completion, students should be able to demonstrate knowledge and understanding of the basic linguistics of ASL through a variety of assessment methods. (Offered spring semester)

ASL 281 ASL Lab 3 0 2 0 0 1

This course provides an opportunity to enhance the review and expansion of the essential skills of American Sign Language. Emphasis is placed on the progressive development of expressive and receptive skills through the study of authentic and representative literary and cultural texts through the use of various supplementary

learning media and materials. Upon completion students should be able to communicate effectively, accurately, and creatively about the past, present, and future. (Offered spring semester)

ASL 282 ASL Lab 4 0 2 0 0 1

This course provides an opportunity to enhance the review and expansion of the essential skills of American Sign Language. Emphasis is placed on the continuing development of expressive and receptive skills and the study of authentic and representative literary and cultural texts through the use of various supplementary learning media and materials. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. (Offered spring semester)

ASTRONOMY

AST 111 Descriptive Astronomy 3 0 0 0 3
Corequisites: AST-111A

This course introduces an overall view of modern astronomy. Topics include an overview of the solar system, the sun, stars, galaxies, and the larger universe. Upon completion, students should be able to demonstrate an understanding of the universe around them. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education natural science requirement for the Associate in Arts Degree.

AST 111A Descriptive Astronomy Lab 0 2 0 0 1
Corequisites: AST-111

The course is a laboratory to accompany AST 111. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 111 and which provide practical experience. Upon completion, students should be able to demonstrate an understanding of the universe around them. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education natural science requirement for the Associate in Arts Degree.

AUTOMATION AND ROBOTICS

ATR 112 Intro to Automation 2 3 0 0 3

This course introduces the basic principles of automated systems and describes the tasks that technicians perform on the job. Topics include the history, development, and current applications of robots and automated systems including their configuration, operation, components, and controls. Upon completion, students should be able to understand the basic concepts of automation and robotic systems. A course fee is required.

ATR 211 Robot Programming 2 3 0 0 3

This course provides the operational characteristics of robots and programming in their respective languages. Topics include robot programming, teach pendants, PLC integration, operator interfaces, the interaction of external sensors, machine vision, network systems, and other related devices. Upon completion, students should be able to program and demonstrate the operation of various robots. A course fee is required.

ATR 219 Automation Troubleshooting 1 3 0 0 2

This course introduces troubleshooting procedures used in automated systems. Topics include logical fault isolation, diagnostic software usage, component replacement techniques, and calibration; safety of equipment; and protection of equipment while troubleshooting. Upon completion, students should be able to analyze and troubleshoot an automated system. A course fee is required.

ALTERNATIVE TRANSPORTATION TEC

ATT 115 Green Trans Safety & Service 1 2 0 0 2

This course covers workplace safety, hazardous material and environmental regulation relevant to electric, hybrid and alternative fueled vehicles. Topics include safety of high voltage vehicle systems, gaseous fuel systems and alternative liquid fuels. Upon completion, students should be able to demonstrate safe work practices, utilize appropriate shop tools and explain government regulations associated with alternative transportation.

ATT 125 Hybrid-Electric Transportation 2 4 0 0 4
Prerequisites: TRN 120

This course covers the theory and operation of hybrid-electric drive vehicles. Topics include maintenance, diagnostics, repair and safety procedures for electrically propelled and hybrid vehicles. Upon completion, students should be able to perform diagnostics, maintenance and repair hybrid-electric drive vehicles.

ATT 130 Biofuels for Transportation 2 3 0 0 3

This course covers handling and usage procedures for liquid biofuels used in internal combustion engines. Emphasis is placed on recognizing, evaluating and diagnosing the impact of Biodiesel and Ethanol on fuel, engine and emission systems. Upon completion, students should be able to maintain, diagnose and service vehicles using straight or blended liquid biofuels.

ATT 135 Gaseous Fuels for Transportation 2 3 0 0 3

This course covers handling and usage procedures for liquefied petroleum gas and compressed natural gas used in internal combustion engines. Emphasis is placed on safety and service procedures for liquefied petroleum gas and compressed natural gas fuel systems, fuel system design differences, and engine and emission systems. Upon completion, students should be able to maintain, diagnose and service vehicles using liquefied petroleum gas or compressed natural gas fuel systems.

ATT 140 Emerging Transp Tech 2 3 0 0 3

This course covers emerging technologies in the automotive industry and diagnostic procedures associated with those technologies. Topics include exploring new technologies, diagnostic tools, methods and repairs. Upon completion, students should be able to demonstrate practical skills applicable to emerging automotive technologies.

AUTOMOTIVE BODY REPAIR

AUB 111 Painting and Refinishing I 2 6 0 0 4

This course introduces the proper procedures for using automotive refinishing equipment and materials in surface preparation and application. Topics include federal, state, and local regulations, personal safety, refinishing equipment and materials, surface preparation, masking, application techniques, and other related topics. Upon completion, students should be able to identify and use proper equipment and materials in refinishing following accepted industry standards. A course fee is required.

AUB 112 Painting and Refinishing II 2 6 0 0 4
Prerequisites: AUB 111

This course covers advanced painting techniques and technologies with an emphasis on identifying problems encountered by the refinishing technician. Topics include materials application, color matching, correction of refinishing problems, and other related topics. Upon completion, students should be able to perform spot, panel, and overall refinishing repairs and identify and correct refinish problems. A course fee is required.

AUB 114 Special Finishes 1 2 0 0 2
Prerequisites: AUB 111

This course introduces multistage finishes, custom painting, and protective coatings. Topics include base coats, advanced intermediate coats, clear coats, and other related topics. Upon completion, students should be able to identify and apply specialized finishes based on accepted industry standards. A course fee is required.

AUB 121 Non-Structural Damage I 1 4 0 0 3

This course introduces safety, tools, and the basic fundamentals of body repair. Topics include shop safety, damage analysis, tools and equipment, repair techniques, materials selection, materials usage, and other related topics. Upon completion, students should be able to identify and repair minor direct and indirect damage including removal/repairing/ replacing of body panels to accepted standards. A course fee is required.

AUB 122 Non-Structural Damage II 2 6 0 0 4

This course covers safety, tools, and advanced body repair. Topics include shop safety, damage analysis, tools and equipment, advanced repair techniques, materials selection, materials usage, movable glass, and other related topics. Upon completion, students should be able to identify and repair or replace direct and indirect damage to accepted standards including movable glass and hardware. A course fee is required.

AUB 131 Structural Damage I 2 4 0 0 4

This course introduces safety, equipment, structural damage analysis, and damage repairs. Topics include shop safety, design and construction, structural analysis and measurement, equipment, structural glass, repair techniques, and other related topics. Upon completion, students should be able to analyze and perform repairs to a vehicle that has received light/moderate structural damage.

AUB 132 Structural Damage II 2 6 0 0 4
Prerequisites: AUB 131

This course provides an in-depth study of structural damage analysis and repairs to vehicles that have received moderate to heavy structural damage. Topics include shop safety, structural analysis and measurement, equipment, structural glass, advanced repair techniques, structural component replacement and alignment, and other related topics. Upon completion, students should be able to analyze and perform repairs according to industry standards.

AUB 136 Plastics and Adhesives 1 4 0 0 3

This course covers safety, plastic and adhesive identification, and the various repair methods of automotive plastic components. Topics include safety, identification, preparation, material selection, and the various repair procedures including refinishing. Upon completion, students should be able to identify, remove, repair, and/or replace automotive plastic components in accordance with industry standards. A course fee is required.

AUB 160 Body Shop Operations 1 0 0 0 1

This course introduces the day-to-day operations of autobody repair facilities. Topics include work habits and ethics, customer relations, equipment types, materials cost and control, policies and procedures, shop safety and liabilities, and other related topics. Upon completion, students should be able to understand the general operating policies and procedures associated with an autobody repair facility.

AUB 162 Autobody Estimating 1 2 0 0 2

This course provides a comprehensive study of autobody estimating. Topics include collision damage analysis, industry regulations, flat-rate and estimated time, and collision estimating manuals. Upon completion, students should be able to prepare and interpret a damage report.

AUTOMOTIVE

AUT 113 Automotive Servicing I 0 6 0 0 2

This course is a lab used as an alternative to co-op placement. Emphasis is placed on shop operations, troubleshooting, testing, adjusting, repairing, and replacing components using appropriate test equipment and service information. Upon completion, students should be able to perform a variety of automotive repairs using proper service procedures and to operate appropriate equipment. A course fee is required.

AUT 116 Engine Repair 2 3 0 0 3

This course covers the theory, construction, inspection, diagnosis, and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

AUT 116A Engine Repair Lab 0 3 0 0 1
Corequisites: AUT 116

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information. A course fee is required.

AUT 141 Suspension and Steering Sys 2 3 0 0 3

This course covers principles of operation, types, and diagnosis/repair of suspension and steering systems to include steering geometry. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair steering and suspension components, check and adjust alignment angles, repair tires, and balance wheels.

AUT 141A Suspension and Steering Lab 0 3 0 0 1
Corequisites: AUT 141

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include manual and power steering systems and standard and electronically controlled suspension and steering systems. Upon completion, students should be able to service and repair steering and suspension components, check and adjust alignment angles, repair tires, and balance wheels. A course fee is required.

AUT 151 Brake Systems 2 3 0 0 3

This course covers principles of operation and types, diagnosis, service, and repair of brake systems. Topics include drum and disc brakes involving hydraulic, vacuum boost, hydra-boost, electrically powered boost, and anti-lock and parking brake systems. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems.

AUT 151A Brakes Systems Lab 0 3 0 0 1
Corequisites: AUT 151

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include drum and disc brakes involving hydraulic, vacuum-boost, hydra-boost, electrically powered boost, and anti-lock, parking brake systems and emerging brake systems technologies. Upon completion, students should be able to diagnose, service, and repair various automotive braking systems. A course fee is required.

AUT 163 Adv Auto Electricity 2 3 0 0 3
Prerequisites: TRN 120

This course covers electronic theory, wiring diagrams, test equipment, and diagnosis, repair, and replacement of electronics, lighting, gauges, horn, wiper, accessories, and body modules. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, and troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns.

AUT 163A Adv Auto Electricity Lab 0 3 0 0 1
Corequisites: AUT 163

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include networking and module communication, circuit construction, wiring diagrams, circuit testing, troubleshooting and emerging electrical/electronic systems technologies. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair wiring, lighting, gauges, accessories, modules, and electronic concerns. A course fee is required.

AUT 181 Engine Performance 1 2 3 0 0 3

This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to vehicles equipped with complex engine control systems. Topics include an overview of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices. Upon completion, students should be able to describe operation and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information.

AUT 181A Engine Performance 1 Lab 0 3 0 0 1
Corequisites: AUT 181

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include overviews of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices and emerging engine performance technologies. Upon completion, students should be able to describe operation and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information. A course fee is required.

AUT 183 Engine Performance 2 2 6 0 0 4
Prerequisites: AUT 181

This course covers study of the electronic engine control systems, the diagnostic process used to locate engine performance concerns, and procedures used to restore normal operation. Topics will include currently used fuels and fuel systems, exhaust gas analysis, emission control components and systems, OBD II (on-board diagnostics) and inter-related electrical/electronic systems. Upon completion, students should be able to diagnose and repair complex engine performance concerns using appropriate test equipment and service information.

AUT 213 Automotive Servicing 2 1 3 0 0 2

This course is a lab used as an alternative to co-op placement. Emphasis is placed on shop operations, troubleshooting, testing, adjusting, repairing, and replacing components using appropriate test equipment and service information. Upon completion, students should be able to perform a variety of automotive repairs using proper service procedures and to operate appropriate equipment. A course fee is required.

AUT 221 Auto Transm/Transaxles 2 3 0 0 3

This course covers operation, diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of

automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair automatic drive trains.

AUT 221A Auto Transm/Transax Lab 0 3 0 0 1
Corequisites: AUT 221

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to diagnose and repair automatic drive trains. A course fee is required.

AUT 231 Man Trans/Axles/Drtrains 2 3 0 0 3

This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driveshafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train servicing and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair manual drive trains.

AUT 231A Man Trans/Ax/Drtrains Lab 0 3 0 0 1
Corequisites: AUT 231

This course is an optional lab for the program that needs to meet NATEF hour standards but does not have a co-op component in the program. Topics include manual drive train diagnosis, service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to diagnose and repair manual drive trains. A course fee is required.

BANKING AND FINANCE

BAF 110 Principles of Banking 3 0 0 0 3

This course covers the fundamentals of bank functions in a descriptive fashion. Topics include banks and the monetary system, the relationship of banks to depositors, the payment functions, bank loans and accounting, regulations, and examinations. Upon completion, students should be able to demonstrate an understanding of the business of banking from a broad perspective. (Offered fall semester)

BAF 131 Fund of Bank Lending 3 0 0 0 3
Prerequisites: ACC 120

Prerequisites: Registered in Banking Major

This course introduces the basic knowledge and skills needed to be an effective lender. Topics include the functions of the loan interview and credit investigation, the "C"s of credit, elements of loan documentation, and warning signs of problem loans. Upon completion, students should be able to demonstrate an understanding of the credit functions and regulatory issues affecting this key banking function. (Offered spring semester)

BAF 141 Law & Banking Principles 3 0 0 0 3
Prerequisites: Registered in Banking Major

This course provides an overview of the legal aspects of banking and the legal framework within which banks function. Topics include the court system, consumer protection, tangible and intangible property ownership, and the legalities and regulations of bank transactions. Upon completion, students should be able to discuss the non-technical aspects of the legal system and how these affect the bank's organization and operation. (Offered spring semester)

BAF 222 Money and Banking 3 0 0 0 3
Prerequisites: Registered in Banking Major

This course provides a fundamental treatment of how money and banks function in the US and world economies. Topics include the roles of money in the US economy, the functions of the Federal Reserve Board, and the workings of monetary and fiscal policies.

Upon completion, students should be able to explain how the monetary economy functions, how banks are creators of money, and the impact of the Federal Reserve. (Offered spring semester)

BIOLOGY

BIO 090 Foundations of Biology 3 2 0 0 4
Corequisites: DRE 098

This course introduces basic biological concepts. Topics include basic biochemistry, cell structure and function, interrelationships among organisms, scientific methodology, and other related topics. Upon completion, students should be able to demonstrate preparedness for college-level biology courses. A student must earn a "C" or better to progress to the next class. A lab fee is required.

BIO 111 General Biology I 3 3 0 0 4
Prerequisites: High School biology or BIO 090

This course introduces the principles and concepts of biology. Emphasis is placed on basic biological chemistry, molecular and cellular biology, metabolism and energy transformation, genetics, evolution, and other related topics. Upon completion, students should be able to demonstrate understanding of life at the molecular and cellular levels. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education natural science requirement for the Associate in Arts and the Associate in Science Degrees. A lab fee is required.

BIO 112 General Biology II 3 3 0 0 4
Prerequisites: BIO 111

This course is a continuation of BIO 111. Emphasis is placed on organisms, evolution, biodiversity, plant and animal systems, ecology, and other related topics. Upon completion, students should be able to demonstrate comprehension of life at the organismal and ecological levels. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education natural science requirement for the Associate in Science Degree. A lab fee is required.

BIO 120 Introductory Botany 3 3 0 0 4
Prerequisites: BIO 110 or BIO 111

This course provides an introduction to the classification, relationships, structure, and function of plants. Topics include reproduction and development of seed and non-seed plants, levels of organization, form and function of systems, and a survey of major taxa. Upon completion, students should be able to demonstrate comprehension of plant form and function, including selected taxa of both seed and non-seed plants. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences. A lab fee is required.

BIO 130 Introductory Zoology 3 3 0 0 4
Prerequisites: BIO 110 or BIO 111

This course provides an introduction to the classification, relationships, structure, and function of major animal phyla. Emphasis is placed on levels of organization, reproduction and development, comparative systems, and a survey of selected phyla. Upon completion, students should be able to demonstrate comprehension of animal form and function including comparative systems of selected groups. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences. A lab fee is required.

BIO 140 Environmental Biology 3 0 0 0 3
Corequisites: BIO 140A

This course introduces environmental processes and the influence of human activities upon them. Topics include ecological concepts, population growth, natural resources, and a focus on current

environmental problems from scientific, social, political, and economic perspectives. Upon completion, students should be able to demonstrate an understanding of environmental interrelationships and of contemporary environmental issues. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences. A lab fee is required.

BIO 140A Environmental Biology Lab 0 3 0 0 1
Corequisites: BIO 140

This course provides a laboratory component to complement BIO 140. Emphasis is placed on laboratory and field experience. Upon completion, students should be able to demonstrate an understanding of environmental interrelationships and of contemporary environmental issues. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences. A lab fee is required.

BIO 145 Ecology 3 3 0 0 4
Prerequisites: BIO 110 or BIO 111

This course provides an introduction to ecological concepts using an ecosystems approach. Topics include energy flow, nutrient cycling, succession, population dynamics, community structure, and other related topics. Upon completion, students should be able to demonstrate comprehension of basic ecosystem structure and dynamics. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. A lab fee is required.

BIO 163 Basic Anatomy and Physiology 4 2 0 0 5

This course provides a basic study of the structure and function of the human body. Topics include a basic study of the body systems as well as an introduction to homeostasis, cells, tissues, nutrition, acid-base balance, and electrolytes. Upon completion, students should be able to demonstrate a basic understanding of the fundamental principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. A lab fee is required.

BIO 165 Anatomy and Physiology I 3 3 0 0 4
Prerequisites: DRE 098; CHM 092 or High School chemistry; and BIO 090 or High School biology

This course is the first of a two-course sequence which provides a comprehensive study of the anatomy and physiology of the human body. Topics include the structure, function, and interrelationship of organ systems with emphasis on the processes which maintain homeostasis. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. A lab fee is required.

BIO 166 Anatomy and Physiology II 3 3 0 0 4
Prerequisites: BIO 165

This course is the second in a two-course sequence which provides a comprehensive study of the anatomy and physiology of the human body. Topics include the structure, function, and interrelationship of organ systems with emphasis on the processes which maintain homeostasis. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and the interrelationships of all body systems. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. A lab fee is required.

BIO 175 General Microbiology 2 2 0 0 3**Prerequisites:** BIO 111 or BIO 163 or BIO 165

This course covers principles of microbiology with emphasis on microorganisms and human disease. Topics include an overview of microbiology and aspects of medical microbiology, identification and control of pathogens, disease transmission, host resistance, and immunity. Upon completion, students should be able to demonstrate knowledge of microorganisms and the disease process as well as aseptic and sterile techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. A lab fee is required.

BIO 240 Waste Management 3 0 0 0 3**Prerequisites:** BIO 110 or BIO 111 or BIO 140/140A

This course is a study of human use of and impact on the environment. Topics include how human activities can negatively affect the land and water and how to avoid and cope with waste problems. Upon completion, students should be able to identify both hazardous and nonhazardous waste products and solutions for their management.

BIO 242 Natural Resource Conserv. 3 0 0 0 3**Prerequisites:** BIO 112 or BIO140/140A

This course covers the importance of natural resources and their role in our environment. Emphasis is placed on the physical, biological, and ecological principles underlying natural resource conservation with attention to the biological consequences of human impacts. Upon completion, students should be able to demonstrate an understanding of natural resource conservation. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

BLUEPRINT READING**BPR 111 Print Reading 1 2 0 0 2**

This course introduces the basic principles of print reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic prints and visualize the features of a part or system.

BREWING, DISTILLATION AND FERMENTATION**BDF 110 Fermentation Production 2 4 0 0 4**

This course introduces students to the basic methodologies used in fermentation. Emphasis is placed on the production of fermented products including ingredients, techniques, fermentation management, storage and sanitation. Upon completion, students should be able to design/produce pilot scale products to demonstrate how material selection and process conditions can generate different kinds/qualities of products.

BDF 111 BDF Safety & Sanitation 1 2 0 0 2

This course covers sanitation, handling and safety with fermentation products, facilities and equipment. Emphasis is placed on the proper chemicals, their selection, handling and storage for sanitation control within the fermentation environment. Upon completion, students should be able to safely maintain quality and stability of fermentation products.

BDF 112 Survey of Fermented Products 3 3 0 0 4

This course provides an introduction to fermented products. Emphasis is placed on history, production, characteristics, taxonomy, and evaluation. Upon completion, students should be able to identify and apply factors relevant to the production of fermented products.

BDF 114 Craft Beer Brewing 1 3 0 0 2

This course introduces entry level skills in craft beer brewing. Topics include recipe development, basic sanitation, techniques and equipment used in the production of small batches (5 gallons

or less) of craft beer. Upon completion, students should be able to demonstrate how to produce small batches of craft beer and be able to extrapolate concepts to larger future production. A course fee is required.

BDF 115 Applied Craft Bev Microbiology 3 2 0 0 4

This course provides an introduction to microbiology and laboratory practices in the brewing industry. Emphasis is placed on yeast biology, fermentation, microorganisms in brewery/distillation and sanitation. Upon completion, students should be able to demonstrate an understanding of microbiology, laboratory techniques, and commonly used analysis methodologies applied in the brewing industry. A course fee is required.

BDF 125 Bev Tech & Calculations 1 3 0 0 2

This course introduces technology and mathematical calculations used in craft beverage production. Emphasis is placed on equipment and technology relating to scheduling/record keeping, and recipe development/alcohol control and ingredient usage calculations. Upon completion, students should be able to identify/demonstrate the technology and equipment used in craft beverage production and recipe development.

BDF 175 Distillation Operations 2 4 0 0 4

This course covers the principles and production techniques involved in the distillation of grains, fruits and other carbohydrates associated with craft beverage distillation. Emphasis is placed on materials/processing, fermentation applications, distillation technology, sensory evaluation, quality control, engineering and craft distillery management. Upon completion, students should be able to demonstrate an understanding of distillation operation/management and the impact of sanitation, fermentation, maturation and aging in the production of distillations.

BDF 180 Sensory Evaluation 2 2 0 0 3

This course introduces the visual, olfactory, and gustatory parameters used in the evaluation of beer and distillery products. Emphasis is placed on aromas, finish, flavor/taste interactions, and factors affecting product quality, as well as descriptive analysis/model systems, judging systems, set-up, and operation for beverage competitions. Upon completion, students should be able to demonstrate the fundamental principles/practices in sensory analysis and identify elements that influence sensory qualities of particular craft beverages. A course fee is required.

BDF 225 Filtration & Finishing 2 2 0 0 3

This course covers processing/conditioning factors that affect the end quality and shelf life of fermented craft beverages. Topics include types/operation of filters, natural/forced carbonation, clarification, lagering, additives and product stabilization for packaging. Upon completion, students should be able to demonstrate an understanding of the processes associated with filtration, carbonation and finishing and their impact on the end product. A course fee is required.

BDF 230 Advanced Brewing 2 4 0 0 4

This course covers advanced brewing processes utilizing the equipment of an on-site brewery and fermentation facility. Topics include advanced beer making processes, analysis/monitoring of fermentation, specialty beer production, quality control, sustainable practices and facilities operations and management. Upon completion, students should be able to understand and demonstrate the proper applications of high volume brewing in a production facility.

BDF 236 Brewing/Packaging Maintenance 2 4 0 0 4

The course covers the equipment in a brewing, distillation and fermentation facility and the techniques used for maintenance and troubleshooting. Topics include types of equipment, the role of equipment used in filling and packaging, troubleshooting, and the role of a maintenance technician. Upon completion, students should be able to set up, maintain and troubleshoot equipment in a brewing, distillation and fermentation facility using work techniques appropriate for the industry.

BUSINESS**BUS 110 Introduction to Business 3 0 0 0 3**

This course provides a survey of the business world. Topics include the basic principles and practices of contemporary business. Upon completion, students should be able to demonstrate an understanding of business concepts as a foundation for studying other business subjects. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. (Offered fall and spring semester)

BUS 115 Business Law I 3 0 0 0 3

This course introduces the student to the legal and ethical framework of business. Contracts, negotiable instruments, the law of sales, torts, crimes, constitutional law, the Uniform Commercial Code, and the court systems are examined. Upon completion the student should be able to identify legal and ethical issues that arise in business decisions and the laws that apply to them. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. (Offered fall semester)

BUS 116 Business Law II 3 0 0 0 3

Prerequisites: BUS 115

This course includes the study of the legal and ethical framework of business. Business Organizations, property law, intellectual property law, agency and employment law, consumer law, secured transactions, and bankruptcy are examined. Upon completion, the student should be able to identify legal and ethical issues that arise in business decisions and the laws that apply to them. (Offered spring semester)

BUS 137 Principles of Management 3 0 0 0 3

This course is designed to be an overview of the major functions of management. Emphasis is placed on planning, organizing, controlling, directing, and communicating. Upon completion, students should be able to work as contributing members of a team utilizing these functions of management. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. (Offered fall and spring semesters)

BUS 225 Business Finance 2 2 0 0 3

Prerequisites: ACC 120

This course provides an overview of business financial management. Emphasis is placed on financial statement analysis, time value of money, management of cash flow, risk and return, and sources of financing. Upon completion, students should be able to interpret and apply the principles of financial management. (Offered spring semester)

BUS 228 Business Statistics 2 2 0 0 3

This course introduces the use of statistical methods and tools in evaluating research data for business applications. Emphasis is placed on basic probability, measures of spread and dispersion, central tendency, sampling, regression analysis, and inductive inference. Upon completion, students should be able to apply statistical problem solving to business. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

BUS 239 Bus Applications Seminar 1 2 0 0 2

Prerequisites: ACC 120, BUS 115, BUS 137, MKT 120 and either ECO 151, ECO 251 or ECO 252

This course is designed as a capstone course for Business Administration majors. Emphasis is placed on decision making in the areas of management, marketing, production, purchasing, and finance. Upon completion, students should be able to apply the

techniques, processes, and vital professional skills needed in the work place. (Offered spring semester)

BUS 240 Business Ethics 3 0 0 0 3

This course introduces contemporary and controversial ethical issues that face the business community. Topics include moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students should be able to demonstrate an understanding of their moral responsibilities and obligations as members of the workforce and society. (Offered summer semester)

BUS 270 Professional Development 3 0 0 0 3

This course provides basic knowledge of self-improvement techniques as related to success in the professional world. Topics include positive human relations, job-seeking skills, and projecting positive self-image. Upon completion, students should be able to demonstrate competent personal and professional skills necessary to get and keep a job. (Offered spring semester)

BUS 280 REAL Small Business 4 0 0 0 4

This course introduces hands-on techniques and procedures for planning and opening a small business, including the personal qualities needed for entrepreneurship. Emphasis is placed on market research, finance, time management, and day-to-day activities of owning/operating a small business. Upon completion, students should be able to write and implement a viable business plan and seek funding. (Offered spring semester)

CHEMISTRY**CHM 092 Fundamentals of Chemistry 3 2 0 0 4**

Prerequisites: DMA 010-050

This course covers fundamentals of chemistry with laboratory applications. Topics include measurements, matter, energy, atomic theory, bonding, molecular structure, nomenclature, balancing equations, stoichiometry, solutions, acids and bases, gases, and basic organic chemistry. Upon completion, students should be able to understand and apply basic chemical concepts and demonstrate basic laboratory skills necessary for success in college-level science courses. A student must earn a "C" or better to progress to the next class. A lab fee is required.

CHM 131 Introduction to Chemistry 3 0 0 0 3

Prerequisites: High School chemistry or CHM 092; DMA 010-080

Corequisites: CHM 131A

This course introduces the fundamental concepts of inorganic chemistry. Topics include measurement, matter and energy, atomic and molecular structure, nuclear chemistry, stoichiometry, chemical formulas and reactions, chemical bonding, gas laws, solutions, and acids and bases. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences. A lab fee is required.

CHM 131A Introduction to Chemistry Lab 0 3 0 0 1

Corequisites: CHM 131

This course is a laboratory to accompany CHM 131. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 131. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 131. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences.

CHM 132 Organic and Biochemistry 3 3 0 0 4**Prerequisites:** CHM 131 and CHM 131A or CHM 151

This course provides a survey of major functional classes of compounds in organic and biochemistry. Topics include structure, properties, and reactions of the major organic and biological molecules and basic principles of metabolism. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts needed to pursue studies in related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences. A lab fee is required.

CHM 151 General Chemistry I 3 3 0 0 4**Prerequisites:** High school chemistry or CHM 092, DMA 010-DMA 080

This course covers fundamental principles and laws of chemistry. Topics include measurement, atomic and molecular structure, periodicity, chemical reactions, chemical bonding, stoichiometry, thermochemistry, gas laws, and solutions. Upon completion, students should be able to demonstrate an understanding of fundamental chemical laws and concepts as needed in CHM 152. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education natural science requirement for the Associate in Arts and the Associate in Science Degrees. A lab fee is required.

CHM 152 General Chemistry II 3 3 0 0 4**Prerequisites:** CHM 151

This course provides a continuation of the study of the fundamental principles and laws of chemistry. Topics include kinetics, equilibrium, ionic and redox equations, acid-base theory, electrochemistry, thermodynamics, introduction to nuclear and organic chemistry, and complex ions. Upon completion, students should be able to demonstrate an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education natural science requirement for the Associate in Science Degree. A lab fee is required.

CHM 251 Organic Chemistry I 3 3 0 0 4**Prerequisites:** CHM 152

This course provides a systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons, alkyl halides, alcohols, and ethers; further topics include isomerization, stereochemistry, and spectroscopy. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of covered organic topics as needed in CHM 252. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A lab fee is required.

CHM 252 Organic Chemistry II 3 3 0 0 4**Prerequisites:** CHM 251

This course provides continuation of the systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of aromatics, aldehydes, ketones, carboxylic acids and derivatives, amines and heterocyclics; multi-step synthesis will be emphasized. Upon completion, students should be able to demonstrate an understanding of organic concepts as needed to pursue further study in chemistry and related professional fields. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A lab fee is required.

COMPUTER INFORMATION SYSTEMS**CIS 110 Introduction to Computers 2 2 0 0 3**

This course introduces computer concepts, including fundamental functions and operations of the computer. Topics include identification of hardware components, basic computer operations, security issues, and use of software applications. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in mathematics (Quantitative Option). (Offered fall, spring, and summer semester)

CIS 115 Intro to Programming and Logic 2 3 0 0 3**Prerequisites:** DMA 010-040, MAT 121, or MAT 171

This course introduces computer programming and problem solving in a structured program logic environment. Topics include language syntax, data types, program organization, problem solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-down algorithm design, and implement algorithmic solutions in a programming language. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in mathematics (Quantitative Option). (Offered fall semester)

CRIMINAL JUSTICE**CJC 111 Intro to Criminal Justice 3 0 0 0 3**

This course introduces the components and processes of the criminal justice system. Topics include history, structure, functions, and philosophy of the criminal justice system and their relationship to life in our society. Upon completion, students should be able to define and describe the major system components and their interrelationships and evaluate career options. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. (Offered fall semester)

CJC 112 Criminology 3 0 0 0 3

This course introduces deviant behavior as it relates to criminal activity. Topics include theories of crime causation; statistical analysis of criminal behavior; past, present, and future social control initiatives; and other related topics. Upon completion, students should be able to explain and discuss various theories of crime causation and societal response. (Offered spring semester)

CJC 113 Juvenile Justice 3 0 0 0 3

This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics. Upon completion, students should be able to identify/discuss juvenile court structure/procedures, function and jurisdiction of juvenile agencies, processing/detention of juveniles, and case disposition. (Offered fall semester)

CJC 120 Interviews/Interrogations 1 2 0 0 2

This course covers basic and special techniques employed in criminal justice interviews and interrogations. Emphasis is placed on the interview/interrogation process, including interpretation of verbal and physical behavior and legal perspectives. Upon completion, students should be able to conduct interviews/interrogations in a legal, efficient, and professional manner and obtain the truth from suspects, witnesses, and victims.

CJC 121 Law Enforcement Operations 3 0 0 0 3

This course introduces fundamental law enforcement operations. Topics include the contemporary evolution of law enforcement operations and related issues. Upon completion, students should be able to explain theories, practices, and issues related to law enforcement operations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. (Offered fall semester)

CJC 122 Community Policing 3 0 0 0 3

This course covers the historical, philosophical, and practical dimensions of community policing. Emphasis is placed on the empowerment of police and the community to find solutions to problems by forming partnerships. Upon completion, students should be able to define community policing, describe how community policing strategies solve problems, and compare community policing to traditional policing.

CJC 131 Criminal Law 3 0 0 0 3

This course covers the history/evolution/principles and contemporary applications of criminal law. Topics include sources of substantive law, classification of crimes, parties to crime, elements of crimes, matters of criminal responsibility, and other related topics. Upon completion, students should be able to discuss the sources of law and identify, interpret, and apply the appropriate statutes/elements. (Offered spring semester)

CJC 132 Court Procedure and Evidence 3 0 0 0 3

This course covers judicial structure/process/procedure from incident to disposition, kinds and degrees of evidence, and the rules governing admissibility of evidence in court. Topics include consideration of state and federal courts, arrest, search and seizure laws, exclusionary and statutory rules of evidence, and other related issues. Upon completion, students should be able to identify and discuss procedures necessary to establish a lawful arrest/search, proper judicial procedures, and the admissibility of evidence. (Offered fall semester)

CJC 141 Corrections 3 0 0 0 3

This course covers the history, major philosophies, components, and current practices and problems of the field of corrections. Topics include historical evolution, functions of the various components, alternatives to incarceration, treatment programs, inmate control, and other related topics. Upon completion, students should be able to explain the various components, processes, and functions of the correctional system. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. (Offered spring semester)

CJC 144 Crime Scene Processing 2 3 0 0 3**Prerequisites: Registered Latent Evidence Major**

This course introduces the theories and practices of crime scene processing and investigating. Topics include legal considerations at the crime scene, processing indoor and outdoor scenes, recording, note taking, collection and preservation of evidence and submission to the crime laboratory. Upon completion, the student should be able to evaluate and search various crime scenes and demonstrate the appropriate techniques. (Offered fall semester)

CJC 146 Trace Evidence 2 3 0 0 3**Prerequisites: Registered Latent Evidence Major**

This course provides a study of trace evidence as it relates to forensic science. Topics include collection, packaging, and preservation of trace evidence from crime scenes such as bombings, fires and other scenes. Upon completion, students should be able to demonstrate the fundamental concepts of trace evidence collection, preservation and submission to the crime laboratory. (Offered fall semester)

CJC 151 Intro to Loss Prevention 3 0 0 0 3

This course introduces the concepts and methods related to commercial and private security systems. Topics include the historical, philosophical, and legal basis of security, with emphasis on security surveys, risk analysis, and associated functions. Upon completion, students should be able to demonstrate and understand security systems, risk management, and the laws relative to loss prevention.

CJC 170 Critical Incident Management for Public Safety 3 0 0 0 3

This course prepares the student to specialize in the direct response, operations, and management of critical incidents. Emphasis is placed upon the theoretical and applied models to understand and manage disasters, terrorism, and school/work place violence. Upon completion, the student should be able to identify and discuss managerial techniques, legal issues, and response procedures to critical incidents. (Offered spring semester)

CJC 212 Ethics and Community Relations 3 0 0 0 3

This course covers ethical considerations and accepted standards applicable to criminal justice organizations and professionals. Topics include ethical systems; social change, values, and norms; cultural diversity; citizen involvement in criminal justice issues; and other related topics. Upon completion, students should be able to apply ethical considerations to the decision-making process in identifiable criminal justice situations. (Offered spring semester)

CJC 213 Substance Abuse 3 0 0 0 3

This course is a study of substance abuse in our society. Topics include the history and classifications of drug abuse and the social, physical, and psychological impact of drug abuse. Upon completion, students should be able to identify various types of drugs, their effects on human behavior and society, and treatment modalities.

CJC 215 Organization and Administration 3 0 0 0 3

This course introduces the components and functions of organization and administration as it applies to the agencies of the criminal justice system. Topics include operations/functions of organizations; recruiting, training, and retention of personnel; funding and budgeting; communications; span of control and discretion; and other related topics. Upon completion, students should be able to identify and discuss the basic components and functions of a criminal justice organization and its administrative operations.

CJC 221 Investigative Principles 3 2 0 0 4

This course introduces the theories and fundamentals of the investigative process. Topics include crime scene/incident processing, information gathering techniques, collection/preservation of evidence, preparation of appropriate reports, court presentations, and other related topics. Upon completion, students should be able to identify, explain, and demonstrate the techniques of the investigative process, report preparation, and courtroom presentation. (Offered fall semester)

CJC 222 Criminalistics 3 0 0 0 3

This course covers the functions of the forensic laboratory and its relationship to successful criminal investigations and prosecutions. Topics include advanced crime scene processing, investigative techniques, current forensic technologies, and other related topics. Upon completion, students should be able to identify and collect relevant evidence at simulated crime scenes and request appropriate laboratory analysis of submitted evidence.

CJC 223 Organized Crime 3 0 0 0 3

This course introduces the evolution of traditional and non-traditional organized crime and its effect on society and the criminal justice system. Topics include identifying individuals and groups involved in organized crime, areas of criminal activity, legal and political responses to organized crime, and other related topics. Upon completion, students should be able to identify the groups and activities involved in organized crime and the responses of the criminal justice system.

CJC 231 Constitutional Law 3 0 0 0 3

The course covers the impact of the Constitution of the United States and its amendments on the criminal justice system. Topics include the structure of the Constitution and its amendments, court decisions pertinent to contemporary criminal justice issues, and other related topics. Upon completion, students should be able to identify/discuss the basic structure of the United States Constitution and the rights/procedures as interpreted by the courts. (Offered fall semester)

CJC 241 Community-Based Corrections 3 0 0 0 3

This course covers programs for convicted offenders that are used both as alternatives to incarceration and in post-incarceration situations. Topics include offenders, diversion, house arrest, restitution, community service, probation and parole, including both public and private participation, and other related topics. Upon completion, students should be able to identify/discuss the various programs from the perspective of the criminal justice professional, the offender, and the community.

CJC 245 Friction Ridge Analysis 2 3 0 0 3

Prerequisites: Registered Latent Evidence Major

This course introduces the basic elements of fingerprint technology and techniques applicable to the criminal justice field. Topics include the history and meaning of fingerprints, pattern types and classification filing sequence, searching and referencing. Upon completion, the students should be able to discuss and demonstrate the fundamental techniques of basic fingerprint technology. (Offered spring semester)

CJC 246 Adv Friction Ridge Analysis 2 3 0 0 3

Prerequisites: CJC 245 and Registered Latent Evidence Major

This course introduces the theories and processes of advanced friction ridge analysis. Topics include evaluation of friction ridges, chart preparation, comparative analysis for values determination rendering proper identification, chemical enhancement and AFIS preparation and usage. Upon completion, students must show an understanding of proper procedures for friction ridge analysis through written testing and practical exercises. (Offered spring semester)

CJC 255 Issue in Crim Justice App 3 0 0 0 3

Prerequisites: CJC 111, CJC 221 and CJC 231

This course provides an opportunity to exhibit interpersonal and technical skills required for application of criminal justice concepts in contemporary practical situations. Emphasis is placed on critical thinking and integration of theory and practical skills components. Upon completion, students should be able to demonstrate the knowledge required of any entry-level law enforcement officer. (Offered spring semester)

COMMUNICATION**COM 120 Intro Interpersonal Communication 3 0 0 0 3**

This course introduces the practices and principles of interpersonal communication in both dyadic and group settings. Emphasis is placed on the communication process, perception, listening, self-disclosure, speech apprehension, ethics, nonverbal communication, conflict, power, and dysfunctional communication relationships. Upon completion, students should be able to demonstrate interpersonal communication skills, apply basic principles of group discussion, and manage conflict in interpersonal communication situations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in communications.

COM 140 Intro Intercultural Communication 3 0 0 0 3

This course introduces techniques of cultural research, definitions, functions, characteristics, and impacts of cultural differences in public address. Emphasis is placed on how diverse backgrounds influence the communication act and how cultural perceptions and experiences determine how one sends and receives messages. Upon completion,

students should be able to demonstrate an understanding of the principles and skills needed to become effective in communicating outside one's primary culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in communications.

COM 160 Small Group Communication 3 0 0 0 3

This course provides an overview of the theory, practice, and critical analysis of communication in the small group setting. Emphasis is placed on group development, conflict, and conformity; leadership skills and styles; group roles and ranks; and decision making, problem solving, and conflict resolution. Upon completion, students should be able to apply topics of gender, culture, and social-emotional functions within group settings. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

COM 231 Public Speaking 3 0 0 0 3

This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education communications requirement for the Associate in Arts and the Associate in Science Degrees.

COSMETOLOGY**COS 111 Cosmetology Concepts I 4 0 0 0 4**

Prerequisites: DMA 010-030

Corequisites: COS 112

This course introduces basic cosmetology concepts. Topics include safety, first aid, sanitation, bacteriology, anatomy, diseases and disorders, hygiene, product knowledge, chemistry, ethics, manicures, and other related topics. Upon completion, students should be able to safely and competently apply cosmetology concepts in the salon setting. (Offered fall and spring semesters)

COS 112 Salon I 0 24 0 0 8

Corequisites: COS 111

This course introduces basic salon services. Topics include scalp treatments, shampooing, rinsing, hair color, design, haircutting, permanent waving, pressing, relaxing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate salon services. (Offered fall and spring semesters)

COS 113 Cosmetology Concepts II 4 0 0 0 4

Corequisites: COS 114

This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, chemistry, manicuring, chemical restructuring, and hair coloring. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting. (Offered fall, spring, and summer semesters)

COS 114 Salon II 0 24 0 0 8

Corequisites: COS 113

This course provides experience in a simulated salon setting. Topics include basic skin care, manicuring, nail application, scalp treatments, shampooing, rinsing, hair color, design, haircutting, chemical restructuring, pressing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services. A course fee is required. (Offered fall and spring semesters)

COS 115 Cosmetology Concepts III 4 0 0 0 4
Corequisites: COS 116

This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, salon management, salesmanship, skin care, electricity/light therapy, wigs, thermal hair styling, lash and brow tinting, superfluous hair removal, and other related topics. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting. (Offered fall, spring, and summer semester)

COS 116 Salon III 0 12 0 0 4
Corequisites: COS 115

This course provides comprehensive experience in a simulated salon setting. Emphasis is placed on intermediate-level of skin care, manicuring, scalp treatments, shampooing, hair color, design, haircutting, chemical restructuring, pressing, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services. A course fee is required. (Offered fall, spring and summer semesters)

COS 117 Cosmetology Concepts IV 2 0 0 0 2
Corequisites: COS 118

This course covers advanced cosmetology concepts. Topics include chemistry and hair structure, advanced cutting and design, and an overview of all cosmetology concepts in preparation for the licensing examination. Upon completion, students should be able to demonstrate an understanding of these cosmetology concepts and meet program completion requirements. (Offered fall, spring and summer semesters)

COS 118 Salon IV 0 21 0 0 7
Corequisites: COS 117

This course provides advanced experience in a simulated salon setting. Emphasis is placed on efficient and competent delivery of all salon services in preparation for the licensing examination and employment. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology Licensing Examination and meet entry-level employment requirements. A course fee is required. (Offered fall and spring semesters)

COS 119 Esthetics Concepts I 2 0 0 0 2

This course covers the concepts of esthetics. Topics include orientation, anatomy, physiology, hygiene, sterilization, first aid, chemistry, basic dermatology, and professional ethics. Upon completion, students should be able to demonstrate an understanding of the concepts of esthetics and meet course requirements. (Offered fall semester)

COS 120 Esthetics Salon I 0 18 0 0 6

This course covers the techniques of esthetics in a comprehensive experience in a simulated salon setting. Topics include client consultation, facials, body treatments, hair removal, make-up applications, and color analysis. Upon completion, students should be able to safely and competently demonstrate esthetic services on clients in a salon setting. A course fee is required. (Offered fall semester)

COS 125 Esthetics Concepts II 2 0 0 0 2
Prerequisites: COS 119

This course covers more comprehensive esthetics. Topics include nutrition, business management, makeup, and color analysis. Upon completion, students should be able to demonstrate an understanding of the advanced esthetics concepts and meet course requirements. (Offered spring semester)

COS 126 Esthetics Salon II 0 18 0 0 6
Prerequisites: COS 120

This course provides experience in a simulated esthetics setting. Topics include machine facials, aromatherapy, massage therapy, electricity, and apparatus. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology licensing examination for Estheticians. A course fee is required. (Offered spring semester)

COS 240 Contemporary Design 1 3 0 0 2
Prerequisites: COS 111 and COS 112

This course covers methods and techniques for contemporary designs. Emphasis is placed on contemporary designs and other related topics. Upon completion, students should be able to demonstrate and apply techniques associated with contemporary design. (Offered fall and spring semesters)

COS 250 Computerized Salon Ops 1 0 0 0 1

This course introduces computer and salon software. Emphasis is placed on various computer and salon software applications. Upon completion, students should be able to utilize computer skills and software applications in the salon setting. (Offered fall and spring semesters)

COS 251 Manicure Instructor Concepts 8 0 0 0 8

This course introduces manicuring instructional concepts. Topics include orientation, theories of education, unit planning, daily lesson planning, laboratory management, student assessment, record keeping, and other related topics. Upon completion, students should be able to identify theories of education, develop lesson plans, demonstrate supervision techniques, and assess student classroom performance.

COS 252 Manicure Instructor Practicum 0 15 0 0 5

Prerequisites: NC Cosmetology or Manicurist License and six months work experience in a cosmetic arts salon

Corequisites: COS 251

This course covers supervisory and instructional skills for teaching manicuring students in a laboratory setting. Topics include demonstrations of services, supervision, student assessment, and other related topics. Upon completion, students should be able to demonstrate competence in the areas covered by the Manicuring Instructor Licensing Examination and meet program completion requirements. A course fee is required.

COS 253 Esthetics Instructor Concepts I 6 15 0 0 11

This course introduces esthetic instructional concepts and skills. Topics include orientation, theories of education, unit planning, daily lesson plans, laboratory management, student assessment in a laboratory setting. Upon completion, students should be able to demonstrate esthetic services and instruct and objectively assess student performance in a classroom setting. A course fee is required. (Offered fall semester)

COS 254 Esthetics Instructor Concepts II 6 15 0 0 11
Prerequisites: COS 253

This course covers advanced esthetic instructional concepts and skills. Topics include practical demonstrations, lesson planning, lecture techniques, development and administration of assessment tools record keeping and other related topics. Upon completion, students should be able to demonstrate competencies in the areas covered by the Esthetics Instructor Licensing examination and meet program requirements. A course fee is required. (Offered spring semester)

COS 271 Instructor Concepts I 5 0 0 0 5

Prerequisites: Cosmetology License and six months experience as a licensed cosmetologist

Corequisites: COS 272

This course introduces the basic cosmetology instructional concepts. Topics include orientation, theories of education, unit planning, daily lesson planning, laboratory management, student assessment, record keeping, and other related topics. Upon completion, students should be able to identify theories of education, develop lesson plans, demonstrate supervisory techniques, and assess student performance in a classroom setting. (Offered fall semester)

COS 272 Instructor Practicum I 0 21 0 0 7

Prerequisites: Cosmetology License and six months experience as a licensed cosmetologist

Corequisites: COS 271

This course covers supervisory and instructional skills for teaching entry-level cosmetology students in a laboratory setting. Topics include demonstrations of services, supervision, and entry-level student assessment. Upon completion, students should be able to demonstrate salon services and instruct and objectively assess the entry-level student. A course fee is required. (Offered fall semester)

COS 273 Instructor Concepts II 5 0 0 0 5

Prerequisites: COS 271 and COS 272

Corequisites: COS 274

This course covers advanced cosmetology instructional concepts. Topics include practical demonstrations, lesson planning, lecture techniques, development and administration of assessment tools, record keeping, and other related topics. Upon completion, students should be able to develop lesson plans, demonstrate supervision techniques, assess student performance in a classroom setting, and keep accurate records. (Offered spring semester)

COS 274 Instructor Practicum II 0 21 0 0 7

Prerequisites: COS 271 and COS 272

Corequisites: COS 273

This course is designed to develop supervisory and instructional skills for teaching advanced cosmetology students in a laboratory setting. Topics include practical demonstrations, supervision, and advanced student assessment. Upon completion, students should be able to demonstrate competence in the areas covered by the Instructor Licensing Examination and meet program completion requirements. This is a certificate-level course. A course fee is required. (Offered spring semester)

COMPUTER SCIENCE**CSC 134 C++ Programming 2 3 0 0 3**

This course introduces computer programming using the C++ programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test and debug at a beginning level. This course has been approved to satisfy the Comprehensive Articulation Agreement as a pre-major and/or elective course requirement. (Offered spring semester)

CSC 151 JAVA Programming 2 3 0 0 3

This course introduces computer programming using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion students should be able to design, code, test, debug JAVA language programs. This course has been approved to satisfy the Comprehensive Articulation Agreement as a pre-major and/or elective course requirement. (Offered fall semester)

CSC 153 C# Programming 2 3 0 0 3

This course introduces computer programming using the C# programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment at the beginning level. (Offered spring semester)

CSC 234 Advanced C++ Programming 2 3 0 0 3

Prerequisites: CSC 134

This course is a continuation of CSC 134 using the C++ programming language with standard programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug and document programming solutions. (Offered fall semester)

CSC 251 Adv JAVA Programming 2 3 0 0 3

Prerequisites: CSC 151

This course is a continuation of CSC 151 using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment. (Offered spring semester)

CSC 289 Programming Capstone Project 1 4 0 0 3

Prerequisites: CTS 285

This course provides an opportunity to complete a significant programming project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, testing, presentation, and implementation. Upon completion, students should be able to complete a project from the definition phase through implementation. (Offered spring semester)

COMPUTER INFORMATION TECHNOLOGY**CTS 120 Hardware/Software Support 2 3 0 0 3**

This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers. (Offered fall semester)

CTS 125 Presentation Graphics 2 2 0 0 3

Prerequisites: CIS 110 or CIS 111

This course provides hands-on experience with a graphics presentation package. Topics include terminology, effective chart usage, design and layout, integrating hardware components, and enhancing presentations with text, graphics, audio and video. Upon completion, students should be able to design and demonstrate an effective presentation. (Offered spring and summer semesters)

CTS 130 Spreadsheet 2 2 0 0 3

Prerequisites: CIS 110 or CIS 111 or OST 137

This course introduces basic spreadsheet design and development. Topics include writing formulas, using functions, enhancing spreadsheets, creating charts, and printing. Upon completion, students should be able to design and print basic spreadsheets and charts. (Offered fall, spring, and summer semesters)

CTS 155 Tech Support Functions 2 2 0 0 3

This course introduces a variety of diagnostic and instructional tools that are used to evaluate the performance of technical support technologies. Emphasis is placed on technical support management techniques and support technologies. Upon completion, students should be able to determine the best technologies to support and solve actual technical support problems. (Offered spring semester)

CTS 217 Computer Train/Support 2 2 0 0 3

This course introduces computer training and support techniques. Topics include methods of adult learning, training design, delivery, and evaluation, creating documentation, and user support methods. Upon completion, students should be able to design and implement training and provide continued support for computer users. (Offered spring semester)

CTS 285 Systems Analysis and Design 3 0 0 0 3
Prerequisites: CIS 115

This course introduces established and evolving methodologies for the analysis, design, and development of an information system. Emphasis is placed on system characteristics, managing projects, prototyping, CASE/OOM tools, and systems development life cycle phases. Upon completion, students should be able to analyze a problem and design an appropriate solution using a combination of tools and techniques. (Offered fall semester)

CTS 289 System Support Project 1 4 0 0 3
Prerequisites: CTS 285

This course provides an opportunity to complete a significant support project with minimal instructor assistance. Emphasis is placed on written and oral communication skills, project definition, documentation, installation, testing, presentation, and user training. Upon completion, students should be able to complete a project from the definition phase through implementation. (Offered spring semester)

DATABASE MANAGEMENT TECHNOLOGY**DBA 110 Database Concepts 2 3 0 0 3**

This course introduces database design and creation using a DBMS product. Emphasis is placed on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports, and forms. (Offered spring semester)

DRAFTING**DFT 151 CAD I 2 3 0 0 3**

This course introduces CAD software as a drawing tool. Topics include drawing, editing, file management, and plotting. Upon completion, students should be able to produce and plot a CAD drawing. For online sections of this course, a computer capable of running Solidworks and Solidworks Student Design Kit software (included with the text) are required.

DFT 154 Intro Solid Modeling 2 3 0 0 3

This course is an introduction to basic three-dimensional solid modeling and design software. Topics include basic design, creation, editing, rendering and analysis of solid models and creation of multi-view drawings. Upon completion, students should be able to use design techniques to create, edit, render and generate a multi-view drawing. For online sections of this course, a computer capable of running Solidworks and Solidworks Student Design Kit software (included with the text) are required.

DFT 170 Engineering Graphics 2 2 0 0 3

This course introduces basic engineering graphics skills and applications. Topics include sketching, selection and use of current methods and tools, and the use of engineering graphics applications. Upon completion, students should be able to demonstrate an understanding of basic engineering graphics principles and practices. This course has been approved to satisfy the Comprehensive Articulation Agreement as a pre-major and/or elective course requirement.

DRAMA/THEATRE**DRA 111 Theatre Appreciation 3 0 0 0 3**

This course provides a study of the art, craft, and business of the theatre. Emphasis is placed on the audience's appreciation of the work of the playwright, director, actor, designer, producer, and critic. Upon completion, students should be able to demonstrate a vocabulary of theatre terms and to recognize the contributions of various theatre artists. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 112 Literature of the Theatre 3 0 0 0 3

This course provides a survey of dramatic works from the classical Greek through the present. Emphasis is placed on the language of drama, critical theory, and background as well as on play reading and analysis. Upon completion, students should be able to articulate, orally and in writing, their appreciation and understanding of dramatic works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 120 Voice for Performance 3 0 0 0 3

This course provides guided practice in the proper production of speech for the theatre. Emphasis is placed on improving speech, including breathing, articulation, pronunciation, and other variables. Upon completion, students should be able to demonstrate effective theatrical speech. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 124 Readers Theatre 3 0 0 0 3

This course provides a theoretical and applied introduction to the medium of reader's theatre. Emphasis is placed on the group performance considerations posed by various genres of literature. Upon completion, students should be able to adapt and present a literary script following the conventions of reader's theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 130 Acting I 0 6 0 0 3

This course provides an applied study of the actor's craft. Topics include role analysis, training the voice, and body concentration, discipline, and self-evaluation. Upon completion, students should be able to explore their creativity in an acting ensemble. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 131 Acting II 0 6 0 0 3
Prerequisites: DRA 130

This course provides additional hands-on practice in the actor's craft. Emphasis is placed on further analysis, characterization, growth, and training for acting competence. Upon completion, students should be able to explore their creativity in an acting ensemble. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 140 Stagecraft 1 0 6 0 0 3

This course introduces the theory and basic construction of stage scenery and properties. Topics include stage carpentry, scene

painting, stage electrics, properties, and backstage organization. Upon completion, students should be able to pursue vocational and avocational roles in technical theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 141 Stagecraft II 0 6 0 0 3
Prerequisites: DRA 140

This course provides additional hands-on practice in the elements of stagecraft. Emphasis is placed on the design and implementation of the arts and crafts of technical theatre. Upon completion, students should be able to pursue vocational and avocational roles in technical theatre. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 145 Stage Make-up 1 2 0 0 2

This course covers the research, design, selection of materials, and application of stage make-up, prosthetics, wigs, and hairpieces. Emphasis is placed on the development of techniques, style, and presentation of the finished make-up. Upon completion, students should be able to create and apply make-up, prosthetics, and hairpieces. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 170 Play Production I 0 9 0 0 3

This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 171 Play Production II 0 9 0 0 3
Prerequisites: DRA 170

This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 211 Theatre History I 3 0 0 0 3

This course covers the development of theatre from its origin to the closing of the British theatre in 1642. Topics include the history, aesthetics, and representative dramatic literature of the period. Upon completion, students should be able to trace the evolution of theatre and recognize the styles and types of world drama. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 212 Theatre History II 3 0 0 0 3

This course covers the development of theatre from 1660 through the diverse influences which shaped the theatre of the twentieth century. Topics include the history, aesthetics, and representative dramatic literature of the period. Upon completion, students should be able to trace the evolution of theatre and recognize the styles and types of world drama. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

DRA 270 Play Production III 0 9 0 0 3
Prerequisites: DRA 171

This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental

practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

DRA 271 Play Production IV 0 9 0 0 3
Prerequisites: DRA 270

This course provides an applied laboratory study of the processes involved in the production of a play. Topics include fundamental practices, principles, and techniques associated with producing plays of various periods and styles. Upon completion, students should be able to participate in an assigned position with a college theatre production. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

ELECTRONIC COMMERCE

ECM 210 Intro to Electronic Commerce 2 2 0 0 3

This course introduces the concepts and tools to implement electronic commerce via the Internet. Topics include application and server software selection, securing transactions, use and verification of credit cards, publishing of catalogs, and site administration. Upon completion, students should be able to setup a working e-commerce Internet web site. (Offered summer semester)

ECONOMICS

ECO 251 Principles of Microeconomics 3 0 0 0 3

This course introduces economic analysis of individual, business, and industry in the market economy. Topics include the price mechanism, supply and demand, optimizing economic behavior, costs and revenue, market structures, factor markets, income distribution, market failure, and government intervention. Upon completion, students should be able to identify and evaluate consumer and business alternatives in order to efficiently achieve economic objectives. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education social/behavioral science requirement for the Associate in Arts and the Associate in Science Degrees. (Offered fall and spring semesters)

ECO 252 Principles of Macroeconomics 3 0 0 0 3

This course introduces economic analysis of aggregate employment, income, and prices. Topics include major schools of economic thought; aggregate supply and demand; economic measures, fluctuations, and growth; money and banking; stabilization techniques; and international trade. Upon completion, students should be able to evaluate national economic components, conditions, and alternatives for achieving socioeconomic goals. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education social/behavioral science requirement for the Associate in Arts and the Associate in Science Degrees. (Offered fall and spring semesters)

EDUCATION

EDU 119 Intro to Early Child Education 4 0 0 0 4

This course introduces the foundations of early childhood education, the diverse educational settings for young children, professionalism and planning intentional developmentally appropriate experiences for each child. Topics include theoretical foundations, national early learning standards, NC Foundations for Early Learning and Development, state regulations, program types, career options, professionalism, ethical conduct, quality inclusive environments, and curriculum responsive to the needs of each child/family. Upon completion, students should be able to design a career/professional development plan, and appropriate environments, schedules, and activity plans. (Offered fall, spring and summer semesters)

EDU 131 Child, Family, and Community 3 0 0 0 3
Corequisite: DRE 097

This course covers the development of partnerships between culturally and linguistically diverse families, children, schools and communities. Emphasis is placed on developing skills and identifying benefits for establishing, supporting, and maintaining respectful, collaborative relationships between diverse families, programs/schools, and community agencies/resources. Upon completion, students should be able to explain appropriate relationships between families, educators, and professionals that enhance development and educational experiences of all children. This course emphasizes evidence-based practices and strategies that support all children and families including those with diverse abilities with 15 hours of required service learning. A course fee is required. (Offered fall and spring semesters)

EDU 144 Child Development I 3 0 0 0 3
Corequisite: DRE 097

This course includes the theories of child development, needs, milestones, and factors that influence development, from conception through approximately 36 months. Emphasis is placed on developmental sequences in physical/motor, emotional/social, cognitive, and language domains and the impact of multiple influences on development and learning. Upon completion, students should be able to compare/contrast typical/atypical developmental characteristics, explain environmental factors that impact development, and identify strategies for enhancing development. Emphasis is placed on evidence-based practices and strategies as well as a child case study, which requires observations and interviews. (Offered fall semester)

EDU 145 Child Development II 3 0 0 0 3
Corequisite: DRE 097

This course includes the theories of child development, needs, milestones, and factors that influence development, from preschool through middle childhood. Emphasis is placed on developmental sequences in physical/motor, emotional/social, cognitive, and language domains and the impact of multiple influences on development and learning. Upon completion, students should be able to compare/contrast typical/atypical developmental characteristics, explain environmental factors that impact development, and identify strategies for enhancing development. Emphasis is placed on evidence-based practices and strategies as well as a child case study, which requires observations and interviews. A course fee is required. (Offered spring semester)

EDU 146 Child Guidance 3 0 0 0 3
Corequisite: DRE 097

This course introduces principles and practical techniques including the design of learning environments for providing developmentally appropriate guidance for all children, including those at risk. Emphasis is placed on observation skills, cultural influences, underlying causes of behavior, appropriate expectations, development of self-control and the role of communication and guidance. Upon completion, students should be able to demonstrate direct/indirect strategies for preventing problem behaviors, teaching appropriate/acceptable behaviors, negotiation, setting limits and recognizing at risk behaviors. This course emphasizes evidence-based practices and strategies that support all children and families and at least 10 hours of observation in a preschool classroom. A course fee is required. (Offered fall semester)

EDU 151 Creative Activities 3 0 0 0 3
Corequisite: DRE 097

This course covers planning, creation and adaptation of developmentally supportive learning environments with attention to curriculum, interactions, teaching practices and learning materials. Emphasis is placed on creating and adapting integrated, meaningful, challenging and engaging developmentally supportive

learning experiences in art, music, movement and dramatics for all children. Upon completion, students should be able to create, adapt, implement and evaluate developmentally supportive learning materials, experiences and environments. Emphasis is placed on evidence-based practices and strategies with visitations to and observations of community organizations that relate to creative arts. A course fee is required. (Offered fall and spring semesters)

EDU 153 Health, Safety and Nutrition 3 0 0 0 3
Corequisites: DRE 097 + Students are required to complete or show current certification in Infant & Child CPR and First Aid to pass this course.

This course covers promoting and maintaining the health and well-being of all children. Topics include health and nutritional guidelines, common childhood illnesses, maintaining safe and healthy learning environments, recognition and reporting of abuse and neglect and state regulations. Upon completion, students should be able to demonstrate knowledge of health, safety, and nutritional needs, safe learning environments, and adhere to state regulations. This course emphasizes evidence-based practices and strategies and proof of CPR and First Aid Certification. (Offered fall semester)

EDU 157 Active Play 2 2 0 0 3

This course introduces the use of indoor and outdoor physical activities to promote the physical, cognitive, and social/emotional development of children. Topics include the role of active play, development of play skills, playground design, selection of safe equipment, and materials and surfacing for active play. Upon completion, students should be able to discuss the stages of play, the role of teachers in play, and the design of appropriate active play areas and activities. A course fee is required. (Offered fall semester)

EDU 163 Classroom Mgt and Instruction 3 0 0 0 3
Corequisite: DRE 097

This course covers management and instructional techniques with school-age populations. Topics include classroom management and organization, teaching strategies, individual student differences and learning styles, and developmentally appropriate classroom guidance techniques. Upon completion, students should be able to utilize developmentally appropriate behavior management and instructional strategies that enhance the teaching/learning process and promote students' academic success. (Offered fall semester)

EDU 173 Becoming a Professional in ECE 3 0 0 0 3
Corequisite: DRE 097

This course is an introduction to the early childhood profession. Emphasis is placed on the NAEYC Ethical Code, professional growth through involvement in professional organizations, and development of a professional portfolio. Upon completion, students should be able to identify professional resources and community partners in order to involve oneself in the early childhood field. This course emphasizes evidence-based practices and strategies that support all children and families and 15 hours of required service learning. (Offered fall and spring semesters)

EDU 184 Early Childhood Intro Practicum 1 3 0 0 2
Prerequisites: EDU 119
Corequisite: DRE 097

This course introduces students to early childhood settings and applying skills in a three star (minimum) or NAEYC accredited or equivalent, quality early childhood environment. Emphasis is placed on observing children and assisting in the implementation of developmentally appropriate activities/environments for all children; and modeling reflective/professional practices. Upon completion, students should be able to demonstrate developmentally appropriate interactions with children and ethical/professional behaviors as indicated by assignments and on-site faculty visits. This course emphasizes evidence-based practices and strategies that support

all children and families including those with diverse abilities and 45 hours practicum in preschool classrooms. A course fee is required. (Offered spring semester)

EDU 216 Foundations of Education 4 0 0 0 4
Corequisite: DRE 098

This course introduces the American educational system and the teaching profession. Topics include historical and philosophical foundations of education, contemporary educational, structural, legal, and financial issues, and experiences in public school classrooms. Upon completion, students should be able to relate classroom observations to the roles of teachers and schools and the process of teacher education. This course emphasizes evidence-based practices and strategies that support all children and families as well as observations and/or interviews in public schools. This course has been approved to satisfy the Comprehensive Articulation Agreement as a pre-major and/or elective course requirement. (Offered fall semester)

EDU 221 Children with Exceptionalities 3 0 0 0 3
Prerequisites: EDU 144 and EDU 145
Corequisite: DRE 098

This course introduces children with exceptionalities, their families, support services, inclusive/diverse settings, and educational/family plans based on the foundations of child development. Emphasis is placed on the characteristics of exceptionalities, observation and assessment of children, strategies for adapting the learning environment, and identification of community resources. Upon completion, students should be able to recognize diverse abilities, describe the referral process, and depict collaboration with families/professionals to plan/implement, and promote best practice. Emphasis is placed on evidence-based practices and strategies as well as a child case study, which requires observations and interviews. This course has been approved to satisfy the Comprehensive Articulation Agreement as a pre-major and/or elective course requirement. (Offered fall semester)

EDU 234 Infants, Toddlers and Twos 3 0 0 0 3
Prerequisites: EDU 119
Corequisite: DRE 098

This course covers the unique needs and rapid changes that occur in the first three years of life and the inter-related factors that influence development. Emphasis is placed on recognizing and supporting developmental milestones through purposeful strategies, responsive care routines and identifying elements of quality, inclusive early care and education. Upon completion, students should be able to demonstrate respectful relationships that provide a foundation for healthy infant/toddler/twos development, plan/select activities/materials, and partner with diverse families. This course emphasizes evidence-based practices and strategies that support all children and families as well as observations and interviews in an infant/toddler/twos classroom. (Offered spring semester)

EDU 235 School-Age Dev and Programs 3 0 0 0 3
Corequisite: DRE 098

This course includes developmentally appropriate practices in group settings for school-age children. Emphasis is placed on principles of development, environmental planning, and positive guidance techniques. Upon completion, students should be able to discuss developmental principles for all children ages five to twelve and plan and implement developmentally-appropriate activities. This course emphasizes evidence-based practices and strategies that support all children and families as well as observations and interviews.

EDU 251 Exploration Activities 3 0 0 0 3
Corequisite: DRE 098

This course covers discovery experiences in science, math, and social studies. Emphasis is placed on developing concepts for each area and encouraging young children to explore, discover, and construct concepts. Upon completion, students should be able to discuss the discovery approach to teaching, explain major concepts in each area, and plan appropriate experiences for children. This course emphasizes evidence-based practices and strategies that support all children and families. A course fee is required. (Offered fall semester)

EDU 259 Curriculum Planning 3 0 0 0 3
Prerequisites: EDU 119
Corequisite: DRE 098

This course is designed to focus on curriculum planning for three to five year olds. Topics include philosophy, curriculum models, indoor and outdoor environments, scheduling, authentic assessment, and planning developmentally appropriate experiences. Upon completion, students should be able to evaluate children's development, critique curriculum, plan for individual and group needs, and assess and create quality environments. This course emphasizes evidence-based practices and strategies that support all children and families. (Offered spring semester)

EDU 261 Early Childhood Administration I 3 0 0 0 3
Corequisite: DRE 098 and EDU 119

This course introduces principles of basic programming and staffing, budgeting/financial management and marketing, and rules and regulations of diverse early childhood programs. Topics include program structure and philosophy, standards of NC child care programs, finance, funding resources, and staff and organizational management. Upon completion, students should be able to develop components of program/personnel handbooks, a program budget, and demonstrate knowledge of fundamental marketing strategies and NC standards. This course emphasizes evidence-based practices and strategies that support all children and families. (Offered fall semester)

EDU 262 Early Childhood Administration II 3 0 0 0 3
Prerequisites: EDU 261
Corequisite: DRE 098 and EDU 119

This course focuses on advocacy/leadership, public relations/community outreach and program quality/evaluation for diverse early childhood programs. Topics include program evaluation/accreditation, involvement in early childhood professional organizations, leadership/mentoring, family, volunteer and community involvement and early childhood advocacy. Upon completion, students should be able to define and evaluate all components of early childhood programs, develop strategies for advocacy and integrate community into programs. This course emphasizes evidence-based practices and strategies that support all children and families. (Offered spring semester)

EDU 271 Educational Technology 2 2 0 0 3
Corequisite: DRE 098

This course introduces the use of technology to enhance teaching and learning in all educational settings. Topics include technology concepts, instructional strategies, materials and adaptive technology for children with exceptionalities, facilitation of assessment/evaluation, and ethical issues surrounding the use of technology. Upon completion, students should be able to apply technology enhanced instructional strategies, use a variety of technology resources and demonstrate appropriate technology skills in educational environments. Emphasis is placed on evidence-based practices and strategies. A course fee is required. (Offered spring semester)

EDU 275 Effective Teach Training 2 0 0 0 2
Corequisite: DRE 098

This course provides specialized training using an experienced-based approach to learning. Topics include instructional preparation and presentation, student interaction, time management, learning expectations, evaluation, and curriculum principles and planning. Upon completion, students should be able to prepare and present a six-step lesson plan and demonstrate ways to improve student's time-on-task. This course emphasizes evidence-based practices and strategies that support all children and families as well as observations and/or interviews in public schools. (Offered fall semester)

EDU 280 Lang and Literacy Experiences 3 0 0 0 3
Corequisite: DRE 098

This course is designed to expand students' understanding of children's language and literacy development and provides strategies for enhancing language/literacy experiences in an enriched environment. Topics include selection of diverse literature and interactive media, the integration of literacy concepts throughout the curriculum, appropriate observations/assessments and inclusive practices. Upon completion, students should be able to select, plan, implement and evaluate developmentally appropriate and diverse language/literacy experiences. This course emphasizes evidence-based practices and strategies that support all children and families as well as at least 12 hours of observation in a preschool Head-Start classroom. A course fee is required. (Offered spring semester)

EDU 284 Early Child Capstone Practicum 1 9 0 0 4
Prerequisites: EDU 119, EDU 144,
EDU 145, EDU 146 and EDU 151

Corequisite: DRE 098

This course is designed to allow students to apply skills in a three-star (minimum) or NAEYC accredited or equivalent, quality early childhood environment. Emphasis is placed on designing, implementing and evaluating developmentally appropriate activities and environments for all children; supporting/involving families; and modeling reflective and professional practices. Upon completion, students should be able to demonstrate developmentally appropriate plans/assessments, appropriate guidance techniques and ethical/professional behaviors as indicated by assignments and onsite faculty visits. This course emphasizes evidence-based practices and strategies that support all children and families as well as 160 hours of practicum within an early childhood classroom. (Offered spring semester)

EDU 285 Internship Exp-School-Age 1 9 0 0 4
Prerequisites: EDU 144, EDU 145,
EDU 163 and EDU 216

Corequisite: DRE 098

This course is designed to allow students to apply skills in a quality public or private school environment. Emphasis is placed on designing, implementing and evaluating developmentally appropriate activities and environments for all children; supporting/involving families; and modeling reflective and professional practices. Upon completion, students should be able to demonstrate developmentally appropriate lesson plans/assessments, appropriate guidance techniques, ethical/professional behaviors as indicated by assignments and onsite faculty visits. This course emphasizes evidence-based practices and strategies that support all children and families as well as 160 hours of practicum within an elementary school classroom. (Offered spring semester)

EDU 289 Adv Issues/School-Age 2 0 0 0 2
Corequisite: DRE 098

This course covers advanced topics and issues that relate to school-age programs. Emphasis is placed on current advocacy issues, emerging technology, professional growth, ethics, and organizations

for providers/teachers working with school-age populations. Upon completion, students should be able to list, discuss, and explain advanced current topics and issues surrounding school-aged populations. This course emphasizes evidence-based practices and strategies that support all children and families. (Offered spring semester)

ENGINEERING

EGR 111 Engineer Comp and Careers 2 2 0 0 3
Recommended prerequisite: DMA 010-040

This course introduces principles, fields of study, computational tools and techniques used in engineering and engineering technology. Topics include use of word processors, spreadsheets, databases, math editors, graphics and CAD packages, simulators, symbolic and numerical math solvers, and other related application software. Upon completion, students should be able to utilize computer applications in an engineering career.

EGR 125 Appl Software for Tech 1 2 0 0 2

This course introduces personal computer software and teaches students how to customize the software for technical applications. Emphasis is placed on the use of common office applications software programs such as spreadsheets, word processing, graphics, and internet access. Upon completion, students should be able to demonstrate competency in using applications software to solve technical problems and communicate the results in text and graphical formats.

EGR 130 Engineering Cost Control 2 2 0 0 3
Prerequisites: MAT 121 or MAT 171

This course covers the management of projects and systems through the control of costs. Topics include economic analysis of alternatives within budget constraints and utilization of the time value of money approach. Upon completion, students should be able to make choices that optimize profits on both short-term and long-term decisions.

EGR 150 Intro to Engineering 1 2 0 0 2
Recommended prerequisite: DMA 010-040

This course is an overview of the engineering profession. Topics include goal setting and career assessment, ethics, public safety, the engineering method and design process, written and oral communication, interpersonal skills and team building, and computer applications. Upon completion, students should be able to understand the engineering process, the engineering profession, and utilize college resources to meet their educational goals. This course has been approved to satisfy the Comprehensive Articulation Agreement as a pre-major and/or elective course requirement.

EGR 220 Engineering Statics 3 0 0 0 3
Prerequisites: PHY 251
Corequisites: MAT 272

This course introduces the concepts of engineering based on forces in equilibrium. Topics include concentrated forces, distributed forces, forces due to friction, and inertia as they apply to machines, structures, and systems. Upon completion, students should be able to solve problems which require the ability to analyze systems of forces in static equilibrium. This course has been approved to satisfy the Comprehensive Articulation Agreement as a pre-major and/or elective course requirement.

EGR 250 Statics/Strength of Materials 4 3 0 0 5
Prerequisites: MAT 121 or MAT 171

This course includes vector analysis, equilibrium of force systems, friction, sectional properties, stress/strain, and deformation. Topics include resultants and components of forces, moments and couples, free-body diagrams, shear and moment diagrams, trusses, frames, beams, columns, connections, and combined stresses. Upon completion, students should be able to analyze simple structures.

EGR 285 Design Project 0 4 0 0 2**Prerequisite: Advisor Approval**

This course provides the opportunity to design an instructor-approved project using previously acquired skills. Emphasis is placed on selection, proposal, design, testing, and documentation of the approved project. Upon completion, students should be able to present and demonstrate projects.

ENVIRONMENTAL HEALTH AND SAFETY**EHS 114 OSHA Regulations 4 0 0 0 4**

This course emphasizes application of OSHA performance-oriented standards for workplace safety and health. Topics include hazard communication, bloodborne pathogens, and the laboratory standard. Upon completion, students should be able to implement written plans required for compliance.

EHS 215 Incident Management 3 2 0 0 4

This course introduces management of hazardous materials and incidents. Topics include analysis and application of the Incident Command System from the discovery of a hazardous substance release to decontamination and termination procedures. Upon completion, students should be able to demonstrate an understanding of the roles and responsibilities of hazardous materials team members.

ELECTRICITY**ELC 117 Motors and Controls 2 6 0 0 4****Recommended prerequisite: ELC 131**

This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contractors, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits.

ELC 128 Introduction to PLC 2 3 0 0 3

This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to understand basic PLC systems and create simple programs.

ELC 131 Circuit Analysis I 3 3 0 0 4**Recommended prerequisite: DMA 010-040**

This course introduces DC and AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include DC and AC principles, circuit analysis laws and theorems, components, test equipment operation, circuit simulation, and other related topics. Upon completion, students should be able to interpret circuit schematics; design, construct, verify, and analyze DC/AC circuits; and properly use test equipment.

ELC 213 Instrumentation 3 2 0 0 4**Recommended prerequisite: ELC 131**

This course covers the fundamentals of instrumentation used in industry. Emphasis is placed on electric, electronic, and other instruments. Upon completion, students should be able to install, maintain, and calibrate instrumentation.

ELC 228 PLC Applications 2 6 0 0 4**Recommended prerequisite: ELC 128**

This course covers programming and applications of programmable logic controllers. Emphasis is placed on programming techniques, networking, specialty I/O modules, and system troubleshooting. Upon completion, students should be able to specify, implement, and maintain complex PLC controlled systems.

ELECTRONICS**ELN 131 Analog Electronics I 3 3 0 0 4****Recommended prerequisite: ELC 131**

This course introduces the characteristics and applications of semiconductor devices and circuits. Emphasis is placed on analysis, selection, biasing, and applications. Upon completion, students should be able to construct, analyze, verify, and troubleshoot analog circuits using appropriate techniques and test equipment.

ELN 133 Digital Electronics 3 3 0 0 4**Recommended prerequisite: ELC 131**

This course covers combinational and sequential logic circuits. Topics include number systems, Boolean algebra, logic families, medium scale integration (MSI) and large scale integration (LSI) circuits, analog to digital (AD) and digital to analog (DA) conversion, and other related topics. Upon completion, students should be able to construct, analyze, verify, and troubleshoot digital circuits using appropriate techniques and test equipment.

ELN 150 CAD for Electronics 1 3 0 0 2**Prerequisite: DFT 170**

This course introduces computer-aided drafting (CAD) with an emphasis on applications in the electronics field. Topics include electronics industry standards (symbols, schematic diagrams, layouts); drawing electronic circuit diagrams; and specialized electronic drafting practices and components such as resistors, capacitors, and ICs. Upon completion, students should be able to prepare electronic drawings with CAD software.

ELN 232 Intro to Microprocessors 3 3 0 0 4**Recommended prerequisite: ELN 133**

This course introduces microprocessor architecture and microcomputer systems including memory and input/output interfacing. Topics include low-level language programming, bus architecture, I/O systems, memory systems, interrupts, and other related topics. Upon completion, students should be able to interpret, analyze, verify, and troubleshoot fundamental microprocessor circuits and programs using appropriate techniques and test equipment.

ELN 234 Communication Systems 3 3 0 0 4**Recommended prerequisite: ELC 131**

This course introduces the fundamentals of electronic communication systems. Topics include the frequency spectrum, electrical noise, modulation techniques, characteristics of transmitters and receivers, and digital communications. Upon completion, students should be able to interpret analog and digital communication circuit diagrams, analyze transmitter and receiver circuits, and use appropriate communication test equipment.

EMERGENCY MEDICAL SCIENCE**EMS 110 EMT 6 6 0 0 8**

This course introduces basic emergency medical care. Topics include preparatory, airway, patient assessment, medical emergencies, trauma, infants and children, and operations. Upon completion, students should be able to demonstrate the knowledge and skills necessary to achieve North Carolina State or National Registry EMT certification. A Course fee is required. (Offered fall semester)

EMS 115 Defense Tactics for EMS 1 3 0 0 2

This course is designed to provide tactics that can be used for self-protection in dangerous and violent situations. Emphasis is placed on prediction, recognition, and response to dangerous and violent situations. Upon completion, students should be able to recognize potentially hostile situations and protect themselves during a confrontation. (Offered spring semester)

EMS 122 EMS Clinical Practicum I 0 0 3 0 1

Prerequisites: EMS 110

Corequisites: EMS 130

This course provides the introductory hospital clinical experience for the paramedic student. Emphasis is placed on mastering fundamental paramedic skills. Upon completion, students should be able to demonstrate competence with fundamental paramedic level skills. A lab fee is required. (Offered spring semester)

EMS 130 Pharmacology 3 3 0 0 4

Prerequisites: EMS 110

Corequisites: EMS 122

This course introduces the fundamental principles of pharmacology and medication administration and is required for paramedic certification. Topics include medical terminology, pharmacological concepts, weights, measures, drug calculations, vascular access for fluids and medication administration and legislation. Upon completion, students should be able to accurately calculate drug dosages, properly administer medications, and demonstrate general knowledge of pharmacology. (Offered spring semester)

EMS 131 Adv Airway Management 1 2 0 0 2

Prerequisites: EMS 110

This course is designed to provide advanced airway management techniques and is required for paramedic certification. Topics include respiratory anatomy and physiology, airway/ventilation, adjuncts, surgical intervention, and rapid sequence intubation. Upon completion, students should be able to properly utilize all airway adjuncts and pharmacology associated with airway control and maintenance. (Offered spring semester)

EMS 160 Cardiology I 1 3 0 0 2

Prerequisites: EMS 110

This course introduces the study of cardiovascular emergencies and is required for paramedic certification. Topics include anatomy and physiology, pathophysiology, electrophysiology, and basic rhythm interpretation in the monitoring leads. Upon completion, students should be able to recognize and interpret basic rhythms. A course fee is required. (Offered spring semester)

EMS 220 Cardiology II 2 3 0 0 3

Prerequisites: EMS 122, EMS 130 and EMS 160

This course provides an in-depth study of cardiovascular emergencies and is required for paramedic certification. Topics include assessment and treatment of cardiac emergencies, application and interpretation of advanced electrocardiography utilizing the twelve-lead ECG, cardiac pharmacology, and patient care. Upon completion, students should be able to assess and treat patients utilizing American Heart Association guidelines. A course fee is required. (Offered summer semester)

EMS 221 EMS Clinical Practicum II 0 0 6 0 2

Prerequisites: EMS 122 and EMS 130

This course provides clinical experiences in the hospital and/or field. Emphasis is placed on increasing the proficiency of students' skills and abilities in patient assessments and the delivery of care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. A course fee is required. (Offered summer semester)

EMS 231 EMS Clinical Pract III 0 0 9 0 3

Prerequisites: EMS 130 and EMS 221

This course provides clinical experiences in the hospital and/or field. Emphasis is placed on enhancing the students' skills and abilities in providing advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care. A course fee is required. (Offered fall semester)

EMS 235 EMS Management 2 0 0 0 2

This course stresses the principles of managing a modern emergency medical service system. Topics include structure and function of municipal governments, EMS grantsmanship, finance, regulatory agencies, system management, legal issues, and other topics relevant to the EMS manager. Upon completion, students should be able to understand the principles of managing emergency medical service delivery systems. (Offered fall semester)

EMS 240 Patients W/ Special Challenges 1 2 0 0 2

Prerequisites: EMS 122 and EMS 130

This course includes concepts of crisis intervention and techniques of interacting with patients with special challenges and is required for paramedic certification. Topics include appropriate intervention and interaction for neglected, abused, terminally ill, chronically ill, technology assisted, bariatric, physically challenged, mentally challenged, or assaulted patients as well as behavioral emergencies. Upon completion, students should be able to recognize and manage the care of patients with special challenges. (Offered fall semester)

EMS 241 EMS Clinical Practicum IV 0 0 12 0 4

Prerequisites: EMS 130 and EMS 231

This course provides clinical experiences in the hospital and/or field. Emphasis is placed on mastering the skills/competencies required of the paramedic providing advanced-level care. Upon completion, students should be able to provide advanced-level patient care as an entry-level paramedic. A course fee is required. (Offered spring semester)

EMS 250 Medical Emergencies 3 3 0 0 4

Prerequisites: EMS 122 and EMS 130

This course provides an in-depth study of medical conditions frequently encountered in the prehospital setting and is required for paramedic certification. Topics include appropriate interventions/treatments for disorders/diseases/injuries affecting the following systems: respiratory, neurological, abdominal/gastrointestinal, endocrine, genitourinary, musculoskeletal, and immunological as well as toxicology, infectious diseases and diseases of the eyes, ears, nose and throat. Upon completion, students should be able to recognize, assess and manage the care of frequently encountered medical conditions based upon initial patient assessment. (Offered fall semester)

EMS 260 Trauma Emergencies 1 3 0 0 2

Prerequisites: EMS 122 and EMS 130

This course provides in-depth study of trauma including pharmacological interventions for conditions frequently encountered in the prehospital setting and is required for paramedic certification. Topics include an overview of thoracic, abdominal, genitourinary, orthopedic, neurological, and multi-system trauma, soft tissue trauma of the head, neck, and face as well as environmental emergencies. Upon completion, students should be able to recognize and manage trauma situations based upon patient assessment and should adhere to standards of care. (Offered fall semester)

EMS 270 Life Span Emergencies 2 3 0 0 3

Prerequisites: EMS 122 and EMS 130

This course covers medical/ethical/legal issues and the spectrum of age-specific emergencies from conception through death required for paramedic certification. Topics include gynecological, obstetrical, neonatal, pediatric, and geriatric emergencies and pharmacological therapeutics. Upon completion, students should be able to recognize and treat age-specific emergencies. (Offered summer semester)

EMS 280 EMS Bridging Course 2 2 0 0 3

This course is designed to bridge the knowledge gained in a continuing education paramedic program with the knowledge gained in an EMS curriculum program. Emphasis is placed on patient

assessment, advanced electrocardiography utilizing the twelve-lead ECG, advanced pharmacology, the appropriate intervention and treatment of multi-system injuries/disorders, ethics, and NC laws and rules. Upon completion, students should be able to perform advanced patient assessment and practice skills. (Offered fall semester)

EMS 285 EMS Capstone 1 3 0 0 2
Prerequisites: EMS 220, EMS 250 and EMS 260

This course provides an opportunity to demonstrate problem-solving skills as a team leader in simulated patient scenarios and is required for paramedic certification. Emphasis is placed on critical thinking, integration of didactic and psychomotor skills, and effective performance in simulated emergency situations. Upon completion, students should be able to recognize and appropriately respond to a variety of EMS-related events. A course fee is required. (Offered spring semester)

ENGLISH AND READING, DEVELOPMENTAL

Initial student placement in developmental courses is based on individual college placement testing policies and procedures. Students should begin developmental course work at the appropriate level indicated by the College placement test (NCDAP).

DRE 096 Integrated Reading and Writing 2.5 1 0 0 3

This course is designed to develop proficiency in specific integrated and contextualized reading and writing skills and strategies. Topics include reading and writing processes, critical thinking strategies, and recognition and composition of well-developed, coherent, and unified texts; these topics are primarily taught at the introductory level using texts primarily in a Lexile® range of 960 to 1115. Upon completion, students should be able to apply those skills toward understanding a variety of academic and career-related texts and composing effective paragraphs.

DRE 097 Integrated Reading Writing II 2.5 1 0 0 3
Prerequisites: DRE 096

This course is designed to develop proficiency in integrated and contextualized reading and writing skills and strategies. Topics include reading and writing processes, critical thinking strategies, and recognition and composition of well-developed, coherent, and unified texts; except where noted, these topics are taught at a reinforcement level using texts primarily in a Lexile® range of 1070 to 1220. Upon completion, students should be able to demonstrate and apply those skills toward understanding a variety of complex academic and career texts and composing essays incorporating relevant, valid evidence.

DRE 098 Integrated Reading Writing III 2.5 1 0 0 3
Prerequisites: DRE 097

This course is designed to develop proficiency in integrated and contextualized reading and writing skills and strategies. Topics include reading and writing processes, critical thinking strategies, and recognition and composition of well-developed, coherent, and unified texts; these topics are taught using texts primarily in the Lexile® range of 1185 to 1385. Upon completion, students should be able to apply those skills toward understanding a variety of texts at the career and college ready level and toward composing a documented essay.

DRE 099 Integrated Reading Writing III 2 0 0 0 2
Prerequisites: DRE 097
Corequisites: ENG 111

This course is designed to develop proficiency in integrated and contextualized reading and writing skills and strategies by complementing, supporting and reinforcing material covered in ENG 111. Topics include reading and writing processes, critical thinking strategies, and recognition and composition of well-developed, coherent, and unified texts; except where noted, these topics are taught using texts primarily in the Lexile® range of 1185 to 1385. Upon completion, students should be able to apply those skills toward understanding a variety of texts at the career and college ready level and toward composing a documented essay.

ENGLISH

ENG 111 Writing and Inquiry 3 0 0 0 3
Prerequisites: DRE 098 or DRE 099

This course is designed to develop the ability to produce clear writing in a variety of genres and formats using a recursive process. Emphasis includes inquiry, analysis, effective use of rhetorical strategies, thesis development, audience awareness, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education English composition requirement for the Associate in Arts and the Associate in Science Degrees.

Note: The second level curriculum English (ENG 112 or ENG 114) should be carefully selected with input from the student faculty advisor to ensure proper program credit. This course should be selected based on the requirements of the student's program.

ENG 112 Writing/Research in the Disciplines 3 0 0 0 3
Prerequisites: ENG 111

This course, the second in a series of two, introduces research techniques, documentation styles, and writing strategies. Emphasis is placed on analyzing information and ideas and incorporating research findings into documented writing and research projects. Upon completion, students should be able to evaluate and synthesize information from primary and secondary sources using documentation appropriate to various disciplines. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education English composition requirement for the Associate in Arts and the Associate in Science Degrees.

ENG 114 Prof Research and Reporting 3 0 0 0 3
Prerequisites: ENG 111

This course, the second in a series of two, is designed to teach professional communication skills. Emphasis is placed on research, listening, critical reading and thinking, analysis, interpretation, and design used in oral and written presentations. Upon completion, students should be able to work individually and collaboratively to produce well-designed business and professional written and oral presentations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English composition.

ENG 125 Creative Writing I 3 0 0 0 3
Prerequisites: ENG 111

This course is designed to provide students with the opportunity to practice the art of creative writing. Emphasis is placed on writing, fiction, poetry, and sketches. Upon completion, students should be able to craft and critique their own writing and critique the writing of others. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. (Offered in spring semester)

ENG 231 American Literature I 3 0 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114

This course covers selected works in American literature from its beginnings to 1865. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to analyze and interpret literary works in their historical and cultural contexts. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education humanities/fine arts requirement for the Associate in Arts and the Associate in Science Degrees.

ENG 232 American Literature II 3 0 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114

This course covers selected works in American literature from 1865 to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to analyze and interpret literary works in their historical and cultural contexts. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education humanities/fine arts requirement for the Associate in Arts and the Associate in Science Degrees.

ENG 233 Major American Writers 3 0 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114

This course provides an intensive study of the works of several major American authors. Emphasis is placed on American history, culture, and the literary merits. Upon completion, students should be able to interpret, analyze, and evaluate the works studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 241 British Literature I 3 0 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114

This course covers selected works in British literature from its beginnings to the Romantic Period. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. (Offered in fall semester)

ENG 242 British Literature II 3 0 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114

This course covers selected works in British literature from the Romantic Period to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. (Offered in spring semester)

ENG 252 Western World Literature II 3 0 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114

This course provides a survey of selected European works from the Neoclassical period to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 262 World Literature II 3 0 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114

This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from the eighteenth century to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

ENG 272 Southern Literature 3 0 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114

This course provides an analytical study of the works of several Southern authors. Emphasis is placed on the historical and cultural contexts, themes, aesthetic features of individual works, and biographical backgrounds of the authors. Upon completion, students should be able to interpret, analyze, and discuss selected works. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

ENVIRONMENTAL SCIENCE

ENV 214 Water Quality 3 2 0 0 4

This course examines the constituents of natural waters from a biological and geochemical perspective. Topics include common components of water, water sources, water law, health consequences, water treatment procedures, and the design of water treatment plants. Upon completion, students should be able to demonstrate an understanding of the biological, chemical, and geological factors affecting water quality. A course fee is required.

ENV 218 Environmental Health 3 0 0 0 3

This course covers the influence of environmental conditions on human health. Emphasis is placed on environmental contaminants and the major exposure routes of the human body. Upon completion, students should be able to examine segments of the environment, including air, water, and food, and determine how the conditions of these influence human health.

ENV 226 Environmental Law 3 0 0 0 3

This course covers federal laws and acts concerning environmental quality standards and the use of resources, legal procedures for enforcing laws, and problems concerning enforcement. Emphasis is placed on environmental law basics, water quality laws, air quality laws, waste disposal laws, and biological resource protection laws. Upon completion, students should be able to demonstrate an understanding of federal/state environmental laws and their importance to the protection of environmental quality.

ENV 228 Environmental Issues 1 0 0 0 1

This course provides a forum for the discussion of current environmental issues. Emphasis is placed on environmental news, regulations, accidents, and areas of controversy. Upon completion, students should be able to demonstrate an understanding of the impact of local, state, national, and global events on environmental quality.

FIRE PROTECTION

FIP 120 Intro to Fire Protection 3 0 0 0 3

This course provides an overview of the development, methods, systems and regulations that apply to the fire protection field. Topics include history, evolution, statistics, suppression, organizations, careers, curriculum, and related subjects. Upon completion, students should be able to demonstrate a broad understanding of the fire protection field. (Offered fall semester)

FIP 124 Fire Prevention and Public Education 3 0 0 0 3

This course introduces fire prevention concepts as they relate to community and industrial operations referenced in NFPA standard 101. Topics include the development and maintenance of fire prevention programs, educational programs, and inspection programs. Upon completion, students should be able to research, develop, and present a fire safety program to a citizens or industrial group. (Offered fall semester)

FIP 128 Detection and Investigation 3 0 0 0 3

This course covers procedures for determining the origin and cause of accidental and incendiary fires referenced in NFPA standard 921. Topics include collection and preservation of evidence, detection and determination of accelerants, courtroom procedure and testimony, and documentation of the fire scene. Upon completion, students should be able to conduct a competent fire investigation and present those findings to appropriate officials or equivalent. (Offered fall semester)

FIP 132 Building Construction 3 0 0 0 3

This course covers the principles and practices reference in NFPA standard 220 related to various types of building construction, including residential and commercial, as impacted by fire conditions. Topics include types of construction and related elements, fire resistive aspects of construction materials, building codes, collapse, and other related topics. Upon completion, students should be able to understand and recognize various types of construction and their positive or negative aspects as related to fire conditions. (Offered spring semester)

FIP 136 Inspections and Codes 3 0 0 0 3

This course covers the fundamentals of fire and building codes and procedures to conduct an inspection referenced in NFPA standard 1730. Topics include review of fire and building codes, writing inspection reports, identifying hazards, plan reviews, site sketches, and other related topics. Upon completion, students should be able to conduct a fire code compliance inspection and produce a written report.

FIP 146 Fire Protection Systems 3 2 0 0 4

This course introduces various types of automatic sprinklers, standpipes, fire alarm systems, and fixed and portable extinguishing systems referenced in NFPA standard 25, including their operation, installation, and maintenance. Topics include wet and dry systems, testing and maintenance, water supply requirements, fire detection and alarm systems, including application, testing, and maintenance of Halon, carbon dioxide, dry chemical, and special extinguishing agents utilized in fixed and portable systems. Upon completion, students should be able to demonstrate a working knowledge of sprinkler and alarm systems, both fixed and portable, including appropriate application, operation, inspection, and maintenance requirements. (Offered fall semester)

FIP 152 Fire Protection Law 3 0 0 0 3

This course covers fire protection law as referenced in NFPA standard 1. Topics include legal terms, contracts, liability, review of case histories, and other related topics. Upon completion, students should be able to discuss laws, codes, and ordinances as they relate to fire protection. (Offered spring semester)

FIP 164 OSHA Standards 3 0 0 0 3

This course covers public and private sector OSHA work site requirements referenced in NFPA standard 1250. Emphasis is placed on accident prevention and reporting, personal safety, machine operations, and hazardous material handling. Upon completion, students should be able to analyze and interpret specific OSHA regulations and write workplace policies designed to achieve compliance. (Offered spring semester)

FIP 220 Fire Fighting Strategies 3 0 0 0 3

This course provides preparation for command of initial incident operations involving emergencies within both the public and private sector referenced in NFPA standards 1561, 1710, and 1720. Topics include incident management, fire-ground tactics and strategies, incident safety, and command/control of emergency operations. Upon completion, students should be able to describe the initial incident system as it relates to operations involving various emergencies in fire and non-fire situations. (Offered spring semester)

FIP 221 Advanced Firefighting Strategies 3 0 0 0 3**Prerequisites: FIP 220**

This course covers command-level operations for multi-company/ agency operations involving fire and non-fire emergencies. Topics include advanced use of the Incident Command System (ICS), advanced incident analysis, command-level fire operations, and control of both man-made and natural major disasters. Upon completion, students should be able to describe proper and accepted systems for the mitigation of emergencies at the level of overall scene command. (Offered spring semester)

FIP 224 Fire Instructor I & II 4 0 0 0 4

This course covers the knowledge, skills, and abilities needed to train others in fire service operations. Topics include planning, presenting, and evaluating lesson plans, learning styles, use of media, communication, and other related topics. Upon completion, students should be able to meet the requirements of the Fire Instructor I and II objectives from National Fire Protection Association (NFPA) 1041.

FIP 226 Fire Officer I & II 4 0 0 0 4

This course covers the knowledge, skills, and requirements referenced in the National Fire Protection Association (NFPA) Standard 1021 for Fire Officer I and II training. Topics include officer roles and responsibilities, budgets, fire cause determination, inspections, education, leadership, management, public relations, and other requirements included in the NFPA standard. Upon completion, students should be able to demonstrate an understanding of relevant NFPA standards as required for state Fire Officer I and II certification.

FIP 228 Local Government Finance 3 0 0 0 3

This course introduces local governmental financial principles and practices. Topics include budget preparation and justification, revenue policies, statutory requirements, audits, and the economic climate. Upon completion, students should be able to comprehend the importance of finance as it applies to the operations of a department. (Offered spring semester)

FIP 230 Chemistry of Hazardous Materials 5 0 0 0 5

This course covers the evaluation of hazardous materials referenced in NFPA standard 1072. Topics include use of the periodic table, hydrocarbon derivatives, placards and labels, parameters of combustion, and spill and leak mitigation. Upon completion, students should be able to demonstrate knowledge of the chemical behavior of hazardous materials. (Offered fall semester)

FIP 232 Hydraulics & Water Dist 2 2 0 0 3

This course covers the flow of fluids through fire hoses, nozzles, appliances, pumps, standpipes, water mains, and other devices referenced in NFPA standard 25. Emphasis is placed on supply and delivery systems, fire flow testing, hydraulic calculations, and other related topics. Upon completion, students should be able to perform hydraulic calculations, conduct water availability tests, and demonstrate knowledge of water distribution systems.

FIP 240 Fire Service Supervision 3 0 0 0 3

This course covers supervisory skills and practices in the fire protection field. Topics include the supervisor's job, supervision skills, the changing work environment, managing change, organizing for results, discipline and grievances, and safety. Upon completion, students should be able to demonstrate an understanding of the roles and responsibilities of effective fire service supervision, meeting elements of NFPA 1021. (Offered fall semester)

FIP 248 Fire Service Personnel Administration 3 0 0 0 3

This course covers the basics of setting up and administering the personnel functions of fire protection organizations referenced in NFPA standard 1021. Emphasis is placed on human resource planning, classification and job analysis, equal opportunity employment, affirmative action, recruitment, retention, development, performance evaluation, and assessment centers. Upon completion, students should be able to demonstrate knowledge of the personnel function as it relates to managing fire protection.

FIP 256 Municipal Public Relations 3 0 0 0 3

This course is a general survey of municipal public relations and their effect on the governmental process referenced in NFPA standard 1035. Topics include principles of public relations, press releases, press conferences, public information officers, image surveys, and the effects of perceived service on fire protection delivery. Upon completion, students should be able to manage public relations functions of organizations which meet elements of NFPA 1021 for Fire Officer I and II.

FIP 260 Fire Protect Planning 3 0 0 0 3

This course covers the need for a comprehensive approach to fire protection planning referenced in NFPA standards 424 and 1620. Topics include the planning process, using an advisory committee, establishing goals and objectives, and techniques used to approve and implement a plan. Upon completion, students should be able to demonstrate a working knowledge of the concepts and principles of planning as it relates to fire protection.

FIP 276 Managing Fire Services 3 0 0 0 3

This course provides an overview of fire department operative services referenced in NFPA standard 1021. Topics include finance, staffing, equipment, code enforcement, management information, specialized services, legal issues, planning, and other related topics. Upon completion, students should be able to understand concepts and apply fire department management and operations principles. (Offered fall semester)

FIP 277 Fire and Social Behavior 3 0 0 0 3

This course covers fire-related aspects of human behavior, with an emphasis on research and a systems approach to human-behavior analysis. Topics include identification of populations and structures at high risk, evaluation of systems models, and use of computer models to predict human behavior during fires. Upon completion, students should be able to identify and anticipate human behavior in response to various residential, commercial, board-and-care facility, and wildland/rural fire events.

FRENCH**FRE 110 Introduction to French 2 0 0 0 2**

This course provides an introduction to understanding, speaking, reading, and writing French. Emphasis is placed on pronunciation, parts of speech, communicative phrases, culture, and skills for language acquisition. Upon completion, students should be able to identify and apply basic grammar concepts, display cultural awareness, and communicate in simple phrases in French.

FRE 111 Elementary French I 3 0 0 0 3

Prerequisites: High School French or FRE 110

Corequisites: FRE 181

This course introduces the fundamental elements of the French language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written French and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

FRE 112 Elementary French II 3 0 0 0 3

Prerequisites: FRE 111

Corequisites: FRE 182

This course is a continuation of FRE 111 focusing on the fundamental elements of the French language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate further cultural awareness. This

course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

FRE 141 Culture and Civilization 3 0 0 0 3

This course, taught in English, provides an opportunity to explore issues related to the Francophone world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the Francophone world. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

FRE 151 Francophone Literature 3 0 0 0 3

Prerequisites: ENG 111

This course, in English, includes selected readings by Francophone writers. Topics include fictional and non-fictional works by representative authors from a variety of genres and literary periods. Upon completion, students should be able to analyze and discuss selected texts within relevant cultural and historical contexts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

FRE 181 French Lab 1 0 2 0 0 1

Corequisites: FRE 111

This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written French and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

FRE 182 French Lab 2 0 2 0 0 1

Prerequisites: FRE 181

Corequisites: FRE 112

This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

FRE 211 Intermediate French I 3 0 0 0 3

Prerequisites: FRE 112

This course provides a review and expansion of the essential skills of the French language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

FRE 212 Intermediate French II 3 0 0 0 3

Prerequisites: FRE 211

This course is a continuation of FRE 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

FRE 281 French Lab 3 0 2 0 0 1
Prerequisites: FRE 182

This course provides an opportunity to enhance the review and expansion of the essential skills of the French language. Emphasis is placed on the study of authentic and representative literary and cultural texts through the use of supplementary learning media and materials. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

FRE 282 French Lab 4 0 2 0 0 1
Prerequisites: FRE 281

This course provides an opportunity to enhance the review and expansion of the essential skills of the French language. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts through the use of supplementary learning media and materials. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

FILM AND VIDEO PRODUCTION

FVP 111 Introduction to Film and Video 2 3 0 0 3

This course is an overview of the film making process from conceptualization to execution and examines film genres in the context of history, theory, creativity, and commerce. Topics include the history of film and video in the US, technical terminology, relationships between various job categories, and the language of film. Upon completion, students should be able to demonstrate a film vocabulary and knowledge of working conditions in the film/video production field. A course fee is required.

FVP 112 Art Dept. Operations I 1 4 0 0 3

This course introduces practical fabrication skills for wood and other materials required to build both props and sets from blueprints, photographs, or sketches. Emphasis is placed on the safe use of hand and power tools, and the skills required for collaborative efforts in set and prop construction. Upon completion, students should be able to demonstrate a working knowledge of the equipment and skills necessary to assist in constructing sets and props. A course fee is required.

FVP 113 Grip and Electrical I 1 4 0 0 3

This course covers various grip/support packages used in different environments for studio and location. Topics include lighting units, hardware, stands, color media, and electrical theory with emphasis on safety. Upon completion, students should be able to execute basic grip and electrical directions given by the key grip, and/or gaffer. A course fee is required.

FVP 114 Camera and Lighting I 2 3 0 0 3

This course covers the basic principles of video camera and recorder operations in professional formats, crew protocol and safety, and basic lighting theory and application. Emphasis is placed on terminology, the characteristics of light, basic lighting procedures, and proper procedures of field recording with video equipment. Upon completion, students should be able to demonstrate an understanding of the basic technical terms of camera operation, video recording and lighting equipment. A course fee is required.

FVP 115 Camera and Lighting II 2 3 0 0 3
Prerequisites: FVP 114

This course offers advanced principles of video camera and recorder operations and introduces students to film formats and equipment as well as advanced lighting theory applications. Emphasis is placed on

terminology, lighting for effect, and color correction. Upon completion, students should be able to demonstrate an understanding of camera terms and equipment, lighting theory and applications, and assist on studio and location shoots. A course fee is required.

FVP 116 Sound Operations 2 3 0 0 3

This course provides an overview of sound theory, methods and technologies for location and studio recording, and hands-on work in location sound gathering. Emphasis is placed on terminology, protocol, cabling, trouble-shooting, mixing skills and safety aspects associated with hands-on work in sound gathering. Upon completion, students should be able to demonstrate an understanding of sound theory and terminology and assist professionals in sound gathering in both film and audio production. A course fee is required.

FVP 120 Art Dept. Operations II 1 4 0 0 3
Prerequisites: FVP 112

This course provides a more in-depth coverage of the skills necessary to assist in the set construction, paint, set dressing, props and greens departments. Emphasis is placed on the skill range required for each craft including, but not limited to, plumbing, casting, wallpapering, furniture construction, upholstery, wiring and drapery. Upon completion, students should be competent to assist in all fields related to the fabrication and decoration of sets and props. A course fee is required.

FVP 130 Grip and Electrical II 1 4 0 0 3
Prerequisites: FVP 113

This course provides a more in-depth coverage of grip/support packages used in studio work and on location. Topics include advanced coverage of lighting, color media, and camera dollies, rigging, and electrical distribution with emphasis on safety issues. Upon completion, students should be able to execute grip and electrical directions given by the key grip, gaffer cinematographer and/or director of photography. A course fee is required.

FVP 212 Production Techniques I 1 12 0 0 5

This course provides experience working in a variety of crew positions with both student and professional productions and covers advanced film production concepts. Emphasis is placed on successful interaction with other advanced students and/or professionals as well as competency in advanced film production concepts. Upon completion, students should be able to demonstrate professional skills needed to pursue careers in the film and video industry. A course fee is required.

FVP 213 Production Techniques II 1 12 0 0 5
Prerequisites: FVP 212

This course provides experience working in a variety of crew positions with both student and professional productions and covers advanced film production concepts. Emphasis is placed on successful interaction with other advanced students and/or professionals as well as competency in advanced film production concepts. Upon completion, students should be able to demonstrate professional skills needed to pursue careers in key positions in the film and video industry. A course fee is required.

FVP 215 Production Management 2 3 0 0 3
Corequisites: FVP 238

This course emphasizes the activity of script breakdown in pre-production as well as the activities of the production office in both the production and post-production stages. Emphasis is placed on procedures, use of industry standard forms and software, as well as the functions and practices of the production office. Upon completion students should be able to demonstrate the people and technical skills necessary to assist above-the-line professionals in all types of film and video production. A course fee is required.

FVP 220 Editing I 2 3 0 0 3

This course covers film and video editing from traditional methods to digital non-linear systems and basic film lab and transfer facility procedures. Topics include terminology, technologies, aesthetics, basic picture-only editing skills; and the editor's role augmented by hands-on experience. Upon completion, students should be able to use editing equipment and basic digitizing, logging, and picture-only editing skills. A course fee is required.

FVP 221 Editing II 2 3 0 0 3

Prerequisites: FVP 220

This course covers editing in the digital environment, starting from the camera negative through the transfer, the non-linear digital edit and going back to negative matching. Topics include terminology, technologies, aesthetics, advanced sound and picture editing skills, and the editor's role augmented by hands-on experience. Upon completion students should be able to demonstrate proficiency in using editing equipment and sound and picture editing skills. A course fee is required.

FVP 223 Postproduction Sound Design 1 4 0 0 3

Prerequisites:FVP 116 or FVP 220

This course covers audio postproduction recording, mixing, and editing techniques, technologies, and aesthetics for the development of a compelling soundtrack for film and video media. Topics include using library effects, recording sound, effects and Foley to reinforce images and the story, preparing and mixing sound tracks for media productions. Upon completion students should be able to record, edit and mix sound design projects that strengthen narrative elements and perform critique of media sound design. A course fee is required.

FVP 227 Multimedia Production 2 3 0 0 3

This course covers technical terms used in the multimedia industry and introduces skills related to digital manipulation of audio and video materials. Emphasis is placed on technical terms used in multimedia work and integration of sound, video, graphics, and text into a single production. Upon completion, students should be able to define technical terms in multimedia work and work with a variety of computer hardware and software. A course fee is required.

FVP 238 Software Apps for FVP 2 3 0 0 3

This course introduces the use of industry standard computer software unique to the motion picture industry using personal computers. Emphasis is placed on hands-on work with budgeting and scheduling software and in facilitating the relationship between the technical crew and the script. Upon completion, students should be able to assist with script breakdown for budgeting and scheduling and work with that information in computer-based formats. A course fee is required.

GOLF COURSE MANAGEMENT**GCM 220 Golf Course Maint Systems 3 0 0 0 3**

This course provides a detailed study of the logistics of day-to-day maintenance programs for golf courses. Emphasis is placed on how such programs relate to the overall management of golf course facilities. Upon completion, students should be capable of setting up and operating maintenance programs at golf courses.

GEOGRAPHY**GEO 111 World Regional Geography 3 0 0 0 3**

This course introduces the regional concept which emphasizes the spatial association of people and their environment. Emphasis is placed on the physical, cultural, and economic systems that interact to produce the distinct regions of the earth. Upon completion, students should be able to describe variations in physical and cultural features of a region and demonstrate an understanding of their functional relationships. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

GEOGRAPHIC INFORMATION SYSTEMS**GIS 111 Introduction to GIS 2 2 0 0 3**

This course introduces the hardware and software components of a Geographic Information System and reviews GIS applications. Topics include data structures and basic functions, methods of data capture and sources of data, and the nature and characteristics of spatial data and objects. Upon completion, students should be able to identify GIS hardware components, typical operations, products/applications, and differences between database models and between raster and vector systems. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HEAVY EQUIPMENT MAINTENANCE**HET 134 Diesel Fuel & Power Sys 2 3 0 0 3**

This course introduces the principles of fuel injection and other power systems used in the heavy equipment industry including newer and cleaner technology. Emphasis is placed on test equipment, component functions, safety, and theories of older conventional and newer and cleaner Tier III and Tier IV fuel systems. Upon completion, students should be able to diagnose and service fuel systems and explain proper safety procedures on alternative fuel systems used in heavy equipment industry.

HISTORY**HIS 111 World Civilizations I 3 0 0 0 3**

Prerequisites: DRE 098

This course introduces world history from the dawn of civilization to the early modern era. Topics include Eurasian, African, American, and Greco-Roman civilizations and Christian, Islamic and Byzantine cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in pre-modern world civilizations. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education social/behavioral science requirement for the Associate in Arts and the Associate in Science Degrees.

HIS 112 World Civilizations II 3 0 0 0 3

Prerequisites: DRE 098

This course introduces world history from the early modern era to the present. Topics include the cultures of Africa, Europe, India, China, Japan, and the Americas. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern world civilizations. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education social/behavioral science requirement for the Associate in Arts and the Associate in Science Degrees.

HIS 131 American History I 3 0 0 0 3

Prerequisites: DRE 098

This course is a survey of American history from pre-history through the Civil War era. Topics include the migrations to the Americas, the colonial and revolutionary periods, the development of the Republic, and the Civil War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early American history. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education social/behavioral science requirement for the Associate in Arts and the Associate in Science Degrees.

HIS 132 American History II 3 0 0 0 3
Prerequisites: DRE 098

This course is a survey of American history from the Civil War era to the present. Topics include industrialization, immigration, the Great Depression, the major American wars, the Cold War, and social conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in American history since the Civil War. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education social/behavioral science requirement for the Associate in Arts and the Associate in Science Degrees.

HIS 231 Recent American History 3 0 0 0 3

This course is a study of American society from the post-Depression era to the present. Topics include World War II, the Cold War, social unrest, the Vietnam War, the Great Society, and current political trends. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in recent America. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HIS 236 North Carolina History 3 0 0 0 3

This course is a study of geographical, political, economic, and social conditions existing in North Carolina from America's discovery to the present. Topics include native and immigrant backgrounds; colonial, antebellum, and Reconstruction periods; party politics; race relations; and the transition from an agrarian to an industrial economy. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in North Carolina. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

HORTICULTURE

HOR 112 Landscape Design I 2 3 0 0 3

This course covers landscape principles and practices for residential and commercial sites. Emphasis is placed on drafting, site analysis, and common elements of good design, plant material selection, and proper plant utilization (encouraged use of native plants and discouraged use of invasive species). Upon completion, students should be able to read plans and draft a landscape design according to sustainable practices.

HOR 114 Landscape Construction 2 2 0 0 3

This course introduces the design and fabrication of landscape structures/features. Emphasis is placed on safety, tool identification and use, material selection, construction techniques, and fabrication. Upon completion, students should be able to design and construct common landscape structures/features.

HOR 116 Landscape Management I 2 2 0 0 3

This course covers information and skills necessary to analyze a property and develop a management schedule. Emphasis is placed on property measurement, plant condition, analysis of client needs, and plant culture needs. Upon completion, students should be able to analyze a property, develop management schedules, and implement practices based on client needs.

HOR 118 Equipment Op & Maintenance 1 3 0 0 2

This course covers the proper operation and maintenance of selected equipment used in horticulture. Emphasis is placed on the maintenance, minor repairs, safety devices, and actual operation of selected equipment. Upon completion, students should be able to design a maintenance schedule, service equipment, and demonstrate safe operation of selected equipment. A course fee is required.

HOR 124 Nursery Operations 2 3 0 0 3

This course covers nursery site and crop selection, cultural practices, and production and marketing methods. Topics include site considerations, water availability, equipment, irrigation, fertilization, containers, media, and pest control. Upon completion, students should be able to design and implement a nursery operation and grow and harvest nursery crops.

HOR 134 Greenhouse Operations 2 2 0 0 3

This course covers the principles and procedures involved in the operation and maintenance of greenhouse facilities. Emphasis is placed on the operation of greenhouse systems, including the environmental control, record keeping, scheduling, and production practices. Upon completion, students should be able to demonstrate the ability to operate greenhouse systems and facilities to produce greenhouse crops.

HOR 142 Fruit & Vegetable Prod 1 2 0 0 2

This course introduces the principles and techniques of growing fruits and field-grown vegetables. Topics include site selection, proper varietal selection, nutritional values, cultural techniques, harvesting and marketing, and insect and disease control. Upon completion, students should be able to demonstrate an understanding of the principles related to the production of selected fruits and vegetables.

HOR 152 Horticultural Practices 0 3 0 0 1

This course covers the maintenance of ornamental plantings and production areas. Topics include maintenance of flower beds, vegetable gardens, greenhouses, and container and field nursery stock using sound horticultural practices. Upon completion, students should be able to apply the principles and practices of maintaining ornamental landscape plantings. A course fee is required.

HOR 154 Intro to Hort Therapy 2 4 0 0 4

This course introduces the concept of horticulture therapy and how it can be applied to improve human well-being. Emphasis is placed on developing a horticulture therapy program, planning activities, and adjusting activities based on the age, disability, or need of the individual. Upon completion, students should be able to develop project ideas, write lesson plans, and lead informal classes using horticulture therapy techniques.

HOR 160 Plant Materials I 2 2 0 0 3

This course covers identification, culture, characteristics, and use of plants in a sustainable landscape. Emphasis is placed on nomenclature, identification, growth requirements, cultural requirements, soil preferences, and landscape applications. Upon completion, students should be able to demonstrate knowledge of the proper selection and utilization of plant materials, including natives and invasive plants. A course fee is required.

HOR 161 Plant Materials II 2 2 0 0 3

Prerequisites: HOR 160

This course provides a supplementary opportunity to cover identification, culture, characteristics, and use of plants in a sustainable landscape, giving students a broader knowledge of available landscape plants for utilization in landscapes and plant production. Emphasis is placed on nomenclature, identification, growth requirements, cultural requirements, soil preferences, landscape applications and expansion of the plant palette. Upon completion, students should be able to demonstrate knowledge of the proper selection and utilization of plant materials, including natives and invasive plants. A course fee is required.

HOR 162 Applied Plant Science 2 2 0 0 3

This course introduces the basic concepts of botany as they apply to horticulture. Topics include nomenclature, physiology, morphology, and anatomy as they apply to plant culture. Upon completion, students should be able to apply the basic principles of botany to horticulture.

HOR 164 Horticulture Pest Management 2 2 0 0 3

This course covers the identification and management of plant pests including insects, diseases, and weeds. Topics include pest identification and beneficial organisms, pesticide application safety and use of least toxic methods of management. Upon completion, students should be able to manage common landscape pests using least toxic methods of control and be prepared to sit for North Carolina Commercial Pesticide Ground Applicators license.

HOR 166 Soils and Fertilizers 2 2 0 0 3

This course covers the physical and chemical properties of soils and soil fertility and management. Topics include soil formation; classification; physical, chemical, and biological properties (including microorganisms); testing; and fertilizer application. Upon completion, students should be able to analyze, evaluate, and properly amend soils/media according to sustainable practices.

HOR 168 Plant Propagation 2 2 0 0 3

This course is a study of sexual and asexual reproduction of plants. Emphasis is placed on seed propagation, grafting, stem and root propagation, micro-propagation, and other propagation techniques. Upon completion, students should be able to successfully propagate ornamental plants.

HOR 213 Landscape Design II 2 2 0 0 3

Prerequisites: HOR 112

This course covers residential and commercial landscape design, cost analysis, and installation. Emphasis is placed on job cost estimates, installation of the landscape design, and maintenance techniques. Upon completion, students should be able to read landscape design blueprints, develop cost estimates, and implement the design.

HOR 215 Landscape Irrigation 2 2 0 0 3

This course introduces basic irrigation design, layout, and installation. Topics include site analysis, components of irrigation systems, safety, types of irrigation systems, and installation techniques. Upon completion, students should be able to design and install basic landscape irrigation systems.

HOR 225 Nursery Production 2 2 0 0 3

This course covers all aspects of nursery crop production. Emphasis is placed on field production and covers soils, nutrition, irrigation, pest control, and harvesting. Upon completion, students should be able to produce a marketable nursery crop.

HOR 235 Greenhouse Production 2 2 0 0 3

This course covers the production of greenhouse crops. Emphasis is placed on product selection and production based on market needs and facility availability, including record keeping. Upon completion, students should be able to select and make production schedules to successfully produce greenhouse crops.

HOR 245 Hort Specialty Crops 2 2 0 0 3

This course introduces the techniques and requirements for the production of horticultural crops of special or local interest. Topics include development of a local market, proper varietal selection, cultural practices, site selection, and harvesting and marketing practices. Upon completion, students should be able to choose, grow, and market a horticultural crop of special or local interest.

HOR 257 Arboriculture Practices 1 3 0 0 2

This course covers the culture and maintenance of trees and shrubs. Topics include fertilization, pruning, approved climbing techniques, pest control, and equipment use and safety. Upon completion, students should be able to properly prune trees and shrubs and perform arboricultural practices.

HOR 265 Adv Plant Materials 1 2 0 0 2

This course covers important landscape plants. Emphasis is placed on identification, plant nomenclature, growth characteristics, cultural requirements, and landscape uses. Upon completion, students should be able to correctly select plants for specific landscape uses. A course fee is required.

HOR 271 Garden Center Management 2 0 0 0 2

This course covers the retail marketing of gardening products and services through mass market and independent garden centers. Topics include garden center layout, customer relations, market choice, product lines, vendors, and the relationship with the broader horticultural community. Upon completion, students should be able to demonstrate an understanding of the principles and practices of the retail garden center.

HOR 275 Hort Production Management 3 2 0 0 4

This course introduces starting and/or managing a horticulture production operation. Emphasis is placed on types of horticulture production businesses, production management practices and skills, and appropriate safety measures for equipment, personnel, and facilities. Upon completion, students should be able to identify various types of production businesses, prepare appropriate schedules and inventories, and manage personnel/facilities for safe crop production.

HEALTH SCIENCES**HSC 110 Orientation to Health Careers 1 0 0 0 1**

This course is a survey of health care professions. Topics include professional duties and responsibilities, working environments, and career choices. Upon completion, students should be able to demonstrate an understanding of the health care professions and be prepared to make informed career choices.

HUMANITIES**HUM 110 Technology and Society 3 0 0 0 3**

This course considers technological change from historical, artistic, and philosophical perspectives and its effect on human needs and concerns. Emphasis is placed on the causes and consequences of technological change. Upon completion, students should be able to critically evaluate the implications of technology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 123 Appalachian Culture 3 0 0 0 3

This course provides an interdisciplinary study of the unique features of Appalachian culture. Topics include historical, political, sociological, psychological, and artistic features which distinguish this region. Upon completion, students should be able to demonstrate a broad-based awareness and appreciation of Appalachian culture. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

HUM 160 Introduction to Film 2 2 0 0 3

This course introduces the fundamental elements of film artistry and production. Topics include film styles, history, and production techniques, as well as the social values reflected in film art. Upon completion, students should be able to critically analyze the elements covered in relation to selected films. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HYDRAULICS**HYD 110 Hydraulics/Pneumatics I** 2 3 0 0 3**Recommended prerequisite: DMA 010-040**

This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting.

INTERPRETER PREPARATION**IPP 111 Intro to Interpretation** 3 0 0 0 3

This course provides an orientation to the field of interpreting, interpretation models, cognitive processes associated with interpretation, professional ethical standards, employment opportunities, and working conditions. Topics include specialized jargon, code of ethics, theories, interpreter assessments/qualifications, and protocol associated with various settings. Upon completion, students should be able to explain the rationale for placement of interpreters and apply ethical standards to a variety of working situations. (Offered fall semester)

IPP 112 Comparative Cultures 3 0 0 0 3

This course introduces various cultural attributes and how they impact the consumers and the interpreting process. Topics include value systems of deaf and non-deaf individuals, enculturation stages, sociolinguistic continuum of language use within the deaf community, and cross-cultural management. Upon completion, students should be able to compare deaf and non-deaf cultures and discuss how attitudes impact communication interactions and interpreting. (Offered spring semester)

IPP 152 ASL/English Translation 3 0 0 0 3**Prerequisites: ASL 112, ASL 211 & ASL 212**

This course provides a study of the component parts of a cultural scheme and the manner in which ASL and English differ. Emphasis is placed on analyzing, discussing, and translating basic ASL and English texts. Upon completion, students should be able to discuss and apply techniques of cross-cultural communication and translation between deaf and non-deaf communities. (Offered summer semester)

IPP 161 Consecutive Interpreting 2 6 0 0 5**Prerequisites: IPP 152**

This course introduces the process of ASL/English consecutive interpreting in a variety of interview, meeting, and small conference settings. Emphasis is placed on generating equivalent messages between ASL and English. Upon completion, students should be able to discuss and apply the principles of the protocol of consecutive interpreting. (Offered fall semester)

IPP 221 Simultaneous Interpret I 2 6 0 0 5**Prerequisites: IPP 161**

This course introduces simultaneous ASL/English interpreting through a variety of expository texts originating in group, meeting, and conference settings. Emphasis is placed on analyzing expository texts, identifying registers, and applying principles of the protocol of interpreting. Upon completion, students should be able to apply the appropriate linguistic and/or cultural adjustments required to generate equivalent messages. (Offered spring semester)

IPP 240 Ethical Standards and Practices 3 0 0 0 3**Corequisites: IPP 221**

This course develops intellectual and ethical decision-making abilities and considers common ethical dilemmas that arise within the interpreting process. Topics include a model of ethical/intellectual development and the application of the model to interpreting practices. Upon completion, students should be able to discuss

ethical resolution to various case studies and apply recognized principles of professional behavior to the interpreting process. (Offered spring semester)

IPP 243 Religious Interpreting 2 2 0 0 3**Prerequisites: IPP 152**

This course introduces various denominational philosophies to determine proper interpreting. Topics include ministries, music, sign selection, scriptural interpretation, denominational programming, environmental setup, employment opportunities, licensure and ethical standards. Upon completion, students should be able to apply knowledge of various denominations to produce ASL/English equivalent interpretation and follow guidelines of church and state. (Offered spring semester)

IPP 245 Educational Interpreting Issues 3 0 0 0 3**Prerequisites: IPP 111**

This course provides an overview of educational interpreting in the US and discusses recent trends in the education of deaf students. Topics include history of deaf education, current employment practices and requirements for educational interpreters. Upon completion, students should be able to discuss current issues, become familiar with evaluation practices, and apply professional/ethical standards to the interpreting role. (Offered spring semester)

INDUSTRIAL SCIENCE**ISC 112 Industrial Safety** 2 0 0 0 2

This course introduces the principles of industrial safety. Emphasis is placed on industrial safety and OSHA regulations. Upon completion, students should be able to demonstrate knowledge of a safe working environment and OSHA compliance.

ISC 132 Manufacturing Quality Control 2 3 0 0 3

This course introduces quality concepts and techniques used in industry. Topics include elementary statistics and probability, process control, process capability, and quality improvement tools. Upon completion, students should be able to demonstrate an understanding of the concepts and principles of quality and apply them to the work environment. Proficiency using spreadsheet software is required for success in this course.

LIGHT-DUTY DIESEL**LDD 112 Intro Light-Duty Diesel** 2 2 0 0 3

This course covers the history, evolution, basic design and operational parameters for light-duty diesel (LDD) engines used in on-road applications. Topics include familiarization with the light-duty diesel, safety procedures, engine service and maintenance procedures, and introduction to combustion and emission chemistry. Upon completion, students should be able to describe the design and operation of the LDD, perform basic service operations, and demonstrate proper safety procedures.

LDD 116 Diesel Electric-Drive 2 6 0 0 4

This course covers the theory and operation of electric-drive diesel vehicles. Topics include maintenance, diagnosis, repair and safety procedures for electrically propelled and hybrid diesel vehicles. Upon completion, students should be able to perform diagnostics, maintenance and repairs on electric and hybrid diesel vehicles.

LDD 181 LDD Fuel Systems 2 6 0 0 4

This course covers the light-duty diesel fuel delivery systems in on-road applications including hydraulic electronically controlled unit injectors, common-rail, mechanical pumps, and emerging technologies. Topics include diesel combustion theory, fuel system components, electronic and mechanical controls, and fuel types and chemistries that are common to the light-duty diesel engines. Upon completion, students should be able to demonstrate skills necessary to inspect, test, and replace fuel delivery components using appropriate service information and tools.

LDD 183 Air, Exh, Emissions 2 6 0 0 4

This course covers terminology, theory and operation of air induction and boost technologies, exhaust, and emission controls used in light-duty diesel engines. Topics include component identification, operation, diagnosis and repair of air delivery systems including turbochargers, diesel particulate filters and other exhaust catalysts. Upon completion, students should be able to demonstrate skills necessary to research service information, and inspect, test, and repair induction, boost, and after-treatment components.

LDD 284 LDD Test and Diagnosis 2 3 0 0 3

This course covers fundamentals of electronic engine management with an emphasis on diagnostic procedures and on-board diagnostic (OBD) systems in light-duty diesels. Topics include adaptive closed-loop controls, high-voltage injection systems, OBD fault detection, and government rules and regulations. Upon completion, students should be able to utilize diagnostic resources and equipment, identify and troubleshoot electronic malfunctions, and complete repairs on light-duty diesels.

LOW IMPACT DEVELOPMENT**LID 111 LID Design Principles 2 3 0 0 3**

This course introduces design principles of Low Impact Development (LID) which incorporate sustainable development and natural resources management as an alternative to traditional site design. Topics include science-based interdisciplinary design practices including tools from civil and environmental engineering, hydrology, horticulture, ecology, and architecture. Upon completion, students should be able to use multifaceted approaches to recommend site-specific LID design concepts for residential, public, and commercial sites.

MACHINING**MAC 111 Machining Technology I 2 12 0 0 6**

This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, drilling machines, saws, milling machines, bench grinders, and layout instruments. Upon completion, students should be able to safely perform the basic operations of measuring, layout, drilling, sawing, turning, and milling. A course fee is required.

MAC 112 Machining Technology II 2 12 0 0 6

This course provides additional instruction and practice in the use of precision measuring tools, lathes, milling machines, and grinders. Emphasis is placed on setup and operation of machine tools including the selection and use of work holding devices, speeds, feeds, cutting tools, and coolants. Upon completion, students should be able to perform basic procedures on precision grinders and advanced operations of measuring, layout, drilling, sawing, turning, and milling. A course fee is required.

MAC 121 Intro to CNC 2 0 0 0 2

This course introduces the concepts and capabilities of computer numerical control machine tools. Topics include setup, operation, and basic applications. Upon completion, students should be able to explain operator safety, machine protection, data input, program preparation, and program storage.

MAC 122 CNC Turning 1 3 0 0 2

This course introduces the programming, setup, and operation of CNC turning centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC turning centers. A course fee is required.

MAC 124 CNC Milling 1 3 0 0 2

This course introduces the manual programming, setup, and operation of CNC machining centers. Topics include programming

formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC machining centers. A course fee is required.

MAC 151 Machining Calculations 1 2 0 0 2

This course introduces basic calculations as they relate to machining occupations. Emphasis is placed on basic calculations and their applications in the machine shop. Upon completion, students should be able to perform basic shop calculations.

MAC 222 Advanced CNC Turning 1 3 0 0 2

This course covers advanced methods in setup and operation of CNC turning centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC turning centers. A course fee is required.

MAC 224 Advanced CNC Milling 1 3 0 0 2

This course covers advanced methods in setup and operation of CNC machining centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC machining centers. A course fee is required.

MAC 248 Production Procedures 1 2 0 0 2

This course covers product planning and control and scheduling and routing of operations. Topics include cost-effective production methods, dimensional and statistical quality control, and the tooling and machines required for production. Upon completion, students should be able to plan, set up, and produce cost-effective quality machined parts.

MATHEMATICS, DEVELOPMENTAL

Initial student placement in developmental courses is based on individual college placement testing policies and procedures. Students should begin developmental course work at the appropriate level indicated by that college placement test. Due to pending changes in developmental courses contact your advisor for information on courses you may need to take.

DMA 010 Operations with Integers .75 .5 0 0 1

This course provides a conceptual study of integers and integer operations. Topics include integers, absolute value, exponents, square roots, perimeter and area of basic geometric figures, Pythagorean Theorem, and use of the correct order of operations. Upon completion, students should be able to demonstrate an understanding of pertinent concepts and principles and apply this knowledge in the evaluation of expressions.

DMA 020 Fractions and Decimals .75 .5 0 0 1**Prerequisites: DMA 010**

This course provides a conceptual study of the relationship between fractions and decimals and covers related problems. Topics include application of operations and solving contextual application problems, including determining the circumference and area of circles with the concept of pi. Upon completion, students should be able to demonstrate an understanding of the connections between fractions and decimals.

DMA 030 Propor/Ratio/Rate/Percent .75 .5 0 0 1**Prerequisites: DMA 010 and DMA 020**

This course provides a conceptual study of the problems that are represented by rates, ratios, percent, and proportions. Topics include rates, ratios, percent, proportion, conversion of English and metric units, and applications of the geometry of similar triangles. Upon completion, students should be able to use their understanding to solve conceptual application problems.

DMA 040 Express/Lin Equat/Inequal .75 .5 0 0 1

Prerequisites: Take one set:

Set 1: DMA 010, DMA 020 and DMA 030

Set 2: MAT 060

This course provides a conceptual study of problems involving linear expressions, equations, and inequalities. Emphasis is placed on solving contextual application problems. Upon completion, students should be able to distinguish between simplifying expressions and solving equations and apply this knowledge to problems involving linear expressions, equations, and inequalities.

DMA 050 Graphs/Equations of Lines .75 .5 0 0 1

Prerequisites: Take one set:

Set 1: DMA 010, DMA 020, DMA 030 and DMA 040

Set 2: DMA 040 and MAT 060

This course provides a conceptual study of problems involving graphic and algebraic representations of lines. Topics include slope, equations of lines, interpretation of basic graphs, and linear modeling. Upon completion, students should be able to solve contextual application problems and represent real-world situations as linear equations in two variables.

DMA 060 Polynomial/Quadratic Appl .75 .5 0 0 1

Prerequisites: Take one set:

**Set 1: DMA 010, DMA 020, DMA 030, DMA 040
and DMA 050**

Set 2: DMA 040, DMA 050 and MAT 060

Set 3: MAT 060 and MAT 070

This course provides a conceptual study of problems involving graphic and algebraic representations of quadratics. Topics include basic polynomial operations, factoring polynomials, and solving polynomial equations by means of factoring. Upon completion, students should be able to find algebraic solutions to contextual problems with quadratic applications.

DMA 070 Rational Express/Equation .75 .5 0 0 1

Prerequisites: Take one set:

**Set 1: DMA 010, DMA 020, DMA 030, DMA 040,
DMA 050 and DMA 060**

Set 2: DMA 040, DMA 050, DMA 060 and MAT 060

Set 3: DMA 060, MAT 060 and MAT 070

**Set 4: DMA 010, DMA 020, DMA 030, DMA 060
and MAT 070**

This course provides a conceptual study of problems involving graphic and algebraic representations of rational equations. Topics include simplifying and performing operations with rational expressions and equations, understanding the domain, and determining the reasonableness of an answer. Upon completion, students should be able to find algebraic solutions to contextual problems with rational applications.

DMA 080 Radical Express/Equations .75 .5 0 0 1

Prerequisites: Take one set:

Set 1: DMA 010, DMA 020, DMA 030, DMA 040,

DMA 050, DMA 060 and DMA 070

Set 2: DMA 060, DMA 070, MAT 060 and MAT 070

Set 3: DMA 040, DMA 050, DMA 060, DMA 070, MAT 060

Set 4: DMA 010, DMA 020, DMA 030, DMA 060,

DMA 070, and MAT 070

This course provides a conceptual study of the manipulation of radicals and the application of radical equations to real-world problems. Topics include simplifying and performing operations with radical expressions and rational exponents, solving equations, and determining the reasonableness of an answer. Upon completion, students should be able to find algebraic solutions to contextual problems with radical applications.

MATHEMATICS

MAT 110 Math Measurement & Literacy 2 2 0 0 3

Prerequisites: DMA 010-030

This course provides an activity-based approach that develops measurement skills and mathematical literacy using technology to solve problems for non-math intensive programs. Topics include unit conversions and estimation within a variety of measurement systems; ratio and proportion; basic geometric concepts; financial literacy; and statistics including measures of central tendency, dispersion, and charting of data. Upon completion, students should be able to demonstrate the use of mathematics and technology to solve practical problems, and to analyze and communicate results.

MAT 121 Algebra/Trigonometry I 2 2 0 0 3

Prerequisites: DMA 010-060

This course provides an integrated approach to technology and the skills required to manipulate, display, and interpret mathematical functions and formulas used in problem solving. Topics include the properties of plane and solid geometry, area and volume, and basic proportion applications; simplification, evaluation, and solving of algebraic equations and inequalities and radical functions; complex numbers; right triangle trigonometry; and systems of equations. Upon completion, students will be able to demonstrate the ability to use mathematics and technology for problem-solving, analyzing and communicating results. (Offered in fall semester)

MAT 122 Algebra/Trigonometry II 2 2 0 0 3

Prerequisites: MAT 121

This course is designed to cover concepts in algebra, function analysis, and trigonometry. Topics include exponential and logarithmic functions, transformations of functions, Law of Sines, Law of Cosines, vectors, and statistics. Upon completion, students should be able to demonstrate the ability to use mathematics and technology for problem-solving, analyzing and communicating results. (Offered in spring semester)

MAT 143 Quantitative Literacy 2 2 0 0 3
Prerequisites: DMA 010-050, and DRE 098

This course is designed to engage students in complex and realistic situations involving the mathematical phenomena of quantity, change and relationship, and uncertainty through project- and activity-based assessment. Emphasis is placed on authentic contexts which will introduce the concepts of numeracy, proportional reasoning, dimensional analysis, rates of growth, personal finance, consumer statistics, practical probabilities, and mathematics for citizenship. Upon completion, students should be able to utilize quantitative information as consumers and to make personal, professional, and civic decisions by decoding, interpreting, using, and communicating quantitative information found in modern media and encountered in everyday life. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education math requirement for the Associate in Arts Degree.

MAT 152 Statistical Methods I 3 2 0 0 4
Prerequisites: DMA 010-050, and DRE 098

This course provides a project-based approach to introductory statistics with an emphasis on using real-world data and statistical literacy. Topics include descriptive statistics, correlation and regression, basic probability, discrete and continuous probability distributions, confidence intervals and hypothesis testing. Upon completion, students should be able to use appropriate technology to describe important characteristics of a data set, draw inferences about a population from sample data, and interpret and communicate results. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education math requirement for the Associate in Arts Degree.

MAT 171 Precalculus Algebra 3 2 0 0 4
Prerequisites: Take one set:

Set 1: DMA 010-080;

Set 2: DMA 010-050 and DMA-065

Set 3: MAT 121

This course is designed to develop topics which are fundamental to the study of Calculus. Emphasis is placed on solving equations and inequalities, solving systems of equations and inequalities, and analysis of functions (absolute value, radical, polynomial, rational, exponential, and logarithmic) in multiple representations. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to algebra-related problems with and without technology. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education math requirement for the Associate in Arts and the Associate in Science Degrees.

MAT 172 Precalculus Trigonometry 3 2 0 0 4
Prerequisites: MAT 171

This course is designed to develop an understanding of topics which are fundamental to the study of Calculus. Emphasis is placed on the analysis of trigonometric functions in multiple representations, right and oblique triangles, vectors, polar coordinates, conic sections, and parametric equations. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to trigonometry-related problems with and without technology. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education math requirement for the Associate in Arts and the Associate in Science Degrees.

MAT 271 Calculus I 3 2 0 0 4
Prerequisites: MAT 172

This course is designed to develop the topics of differential and integral calculus. Emphasis is placed on limits, continuity, derivatives and integrals of algebraic and transcendental functions of one variable. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to derivative-related problems with and without technology. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education math requirement for the Associate in Science Degree. (Offered in fall semester)

MAT 272 Calculus II 3 2 0 0 4
Prerequisites: MAT 271

This course is designed to develop advanced topics of differential and integral calculus. Emphasis is placed on the applications of definite integrals, techniques of integration, indeterminate forms, improper integrals, infinite series, conic sections, parametric equations, polar coordinates, and differential equations. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to integral-related problems with and without technology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in Mathematics. (Offered in spring semester)

MAT 273 Calculus III 3 2 0 0 4
Prerequisites: MAT 272

This course is designed to develop the topics of multivariate calculus. Emphasis is placed on multivariate functions, partial derivatives, multiple integration, solid analytical geometry, vector valued functions, and line and surface integrals. Upon completion, students should be able to select and use appropriate models and techniques for finding the solution to multivariate-related problems with and without technology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in Mathematics. (Offered in fall semester)

MECHANICAL

MEC 110 Intro to CAD/CAM 1 2 0 0 2

This course introduces CAD/CAM. Emphasis is placed on transferring part geometry from CAD to CAM for the development of a CNC-ready program. Upon completion, students should be able to use CAD/CAM software to produce a CNC program.

MEC 111 Machine Processes I 1 4 0 0 3

This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to manufacture simple parts to specified tolerance.

MEC 130 Mechanisms 2 2 0 0 3

This course introduces the purpose and action of various mechanical devices. Topics include cams, cables, gear trains, differentials, screws, belts, pulleys, shafts, levers, lubricants, and other devices. Upon completion, students should be able to analyze, maintain, and troubleshoot the components of mechanical systems. A course fee is required.

MEC 145 Mfg Materials I 2 3 0 0 3

This course introduces a variety of manufacturing materials and common processing techniques. Emphasis is placed on the processing, testing, and application of materials such as wood, metals, plastics, ceramics, and composites. Upon completion, students should be able to demonstrate an understanding of fundamental engineering applications for a variety of materials, including their process capabilities and limitations.

MEC 155 Env Benign Manufacturing 2 2 0 0 3

This course introduces environmental issues involving the generation and management of hazardous materials and wastes in manufacturing operations. Topics include the analysis of manufacturing trends, pollution minimization strategies, and the advantages of incorporating a sustainable approach to manufacturing. Upon completion, students should be able to discuss analysis and modification of industrial processes in manufacturing facilities toward a sustainable end.

MEC 260 Fund of Machine Design 2 3 0 0 3

Recommended prerequisite: EGR 250

This course introduces the fundamental principles of machine design. Topics include simple analysis of forces, moments, stresses, strains, friction, kinematics, and other considerations for designing machine elements. Upon completion, students should be able to analyze machine components and make component selections from manufacturers' catalogs.

MEC 276 Capstone Design Project 0 3 0 0 1

Prerequisite: Advisor Approval

This course provides an opportunity for students to utilize all facets of their educational experience to solve an engineering design problem in a multi-disciplinary environment. Competencies demonstrated include project planning and organization, engineering analysis and design, selection of materials and processes, economic analysis, communication, and project documentation. Upon completion, students should be able to demonstrate the ability to complete a comprehensive design project, concluding with a formal report.

MEDICAL ASSISTING**MED 120 Survey of Medical Terminology 2 0 0 0 2**

This course introduces the vocabulary, abbreviations, and symbols used in the language of medicine. Emphasis is placed on building medical terms using prefixes, suffixes, and word roots. Upon completion, students should be able to pronounce, spell, and define accepted medical terms.

MARKETING AND RETAILING**MKT 120 Principles of Marketing 3 0 0 0 3**

This course introduces principles and problems of marketing goods and services. Topics include promotion, placement, and pricing strategies for products. Upon completion, students should be able to apply marketing principles in organizational decision making. (Offered fall semester)

MKT 122 Visual Merchandising 3 0 0 0 3

This course introduces basic layout design and commercial display in retail and service organizations. Topics include an analysis of display as a visual merchandising medium and an examination of the principles and applications of display and design. Upon completion, students should be able to plan, build, and evaluate designs and displays. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program. (Offered summer semester)

MKT 123 Fundamentals of Selling 3 0 0 0 3

This course is designed to emphasize the necessity of selling skills in a modern business environment. Emphasis is placed on sales techniques involved in various types of selling situations. Upon completion, students should be able to demonstrate an understanding of the techniques covered. (Offered spring semester)

MKT 220 Advertising and Sales Promotion 3 0 0 0 3

This course covers the elements of advertising and sales promotion in the business environment. Topics include advertising and sales promotion appeals, selection of media, use of advertising and sales promotion as a marketing tool, and means of testing effectiveness. Upon completion, students should be able to demonstrate an understanding of the concepts covered through application. (Offered fall semester)

MKT 222 Credit Procedures 3 0 0 0 3

This course covers areas of collection that provide an understanding of the expertise needed to manage collection operations. Topics include principles and practices in the extension of credit, collection procedures, and laws pertaining to credit extension and collection. Upon completion, students should be able to demonstrate an understanding of the concepts covered. (Offered fall semester)

MKT 223 Customer Service 3 0 0 0 3

This course stresses the importance of customer relations in the business world. Emphasis is placed on learning how to respond to complex customer requirements and to efficiently handle stressful situations. Upon completion, students should be able to demonstrate the ability to handle customer relations. (Offered spring semester)

MKT 225 Marketing Research 3 0 0 0 3

Prerequisites: MKT 120

This course provides information for decision making by providing guidance in developing, analyzing, and using data. Emphasis is placed on marketing research as a tool in decision making. Upon completion, students should be able to design and conduct a marketing research project and interpret the results. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program. (Offered spring semester)

MKT 226 Retail Applications 3 0 0 0 3

This course is designed to develop occupational competence through participation in case studies, group work, and simulations. Emphasis is placed on all aspects of store ownership and operation, including securing financial backing and a sufficient market share. Upon completion, students should be able to demonstrate an understanding of concepts covered through application. This course is a unique concentration requirement of the Marketing and Retailing concentration in the Business Administration program. (Offered spring semester)

MAINTENANCE**MNT 110 Intro to Maint Procedures 1 3 0 0 2**

This course covers basic maintenance fundamentals for power transmission equipment. Topics include equipment inspection, lubrication, alignment, and other scheduled maintenance procedures. Upon completion, students should be able to demonstrate knowledge of accepted maintenance procedures and practices according to current industry standards.

MNT 160 Industrial Fabrication 1 3 0 0 2

This course covers the necessary techniques to fabricate and assemble basic items common in industrial environments. Emphasis is placed on students being able to create basic items such as frames, guards, supports, and other components commonly used in industry. Upon completion, students should be able to safely fabricate and assemble selected items within specifications.

MUSIC

Suffixes may be added to some music courses to denote the following instrument designations:

A - Voice	L - Clarinet
B - Piano	M - Saxophone
C - Organ	N - Violin
D - Trumpet	P - Viola
E - French Horn	R - Cello
F - Trombone	S - Double Bass
G - Tuba/Baritone	T - Percussion
H - Flute	U - Guitar
J - Oboe	V - Harp
K - Bassoon	

MUS 110 Music Appreciation 3 0 0 0 3

This course is a basic survey of the music of the Western world. Emphasis is placed on the elements of music, terminology, composers, form, and style within a historical perspective. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of music. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education humanities/fine arts requirement for the Associate in Arts and the Associate in Science Degrees.

MUS 121 Music Theory I 3 2 0 0 4

This course provides an in-depth introduction to melody, rhythm, and harmony. Emphasis is placed on fundamental melodic, rhythmic, and harmonic analysis, introduction to part writing, ear training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MUS 122 Music Theory II 3 2 0 0 4
Prerequisites: MUS 121

This course is a continuation of studies begun in MUS 121. Emphasis is placed on advanced melodic, rhythmic, and harmonic analysis and continued studies in part writing, ear training, and sight singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MUS 141 Ensemble I 0 2 0 0 1
Corequisites: MUS 121, MUS 161

This course provides an opportunity to perform in any combination of instrumental, vocal, or keyboard groups of two or more. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. Enrollment is limited to music majors.

MUS 142 Ensemble II 0 2 0 0 1**Prerequisites: MUS 121, MUS 141****Corequisites: MUS 122, MUS 162**

This course is a continuation of MUS 141. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. Enrollment is limited to music majors.

MUS 151 Class Music I 0 2 0 0 1

This course provides group instruction in skills and techniques of the particular instrument or voice for those with little or no previous experience. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. Colleges may use a letter suffix to designate a specific instrument or voice (see above table). This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MUS 152 Class Music II 0 2 0 0 1**Prerequisites: MUS 151**

This course is a continuation of MUS 151. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. Colleges may use a letter suffix to designate a specific instrument or voice (see above table). This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MUS 161 Applied Music I 1 2 0 0 2**Corequisites: MUS 121 and MUS 141**

This course provides individual instruction in the skills and techniques of the particular instrument or voice. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. Enrollment is limited to music majors; additional private lessons and practice hours required.

MUS 162 Applied Music II 1 2 0 0 2**Prerequisites: MUS 121 and MUS 161****Corequisites: MUS 122 and MUS 142**

This course is a continuation of MUS 161. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. Enrollment is limited to music majors; additional private lessons and practice hours required.

MUS 221 Music Theory III 3 2 0 0 4**Prerequisites: MUS 122**

This course is a continuation of MUS 122. Emphasis is placed on altered and chromatic harmony, common practice era compositional techniques and forms, and continued studies in part writing, ear training, and sight-singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MUS 222 Music Theory IV 3 2 0 0 4
Prerequisites: MUS 221

This course is a continuation of studies begun in MUS 221. Emphasis is placed on continued study of common practice era compositional techniques and forms, 20th century practices, ear training, and sight singing. Upon completion, students should be able to demonstrate proficiency in the recognition and application of the above. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MUS 241 Ensemble III 0 2 0 0 1
Prerequisites: MUS 122 and MUS 142
Corequisites: MUS 221 and MUS 261

This course is a continuation of MUS 142. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. Enrollment is limited to music majors.

MUS 242 Ensemble IV 0 2 0 0 1
Prerequisites: MUS 221 and MUS 241
Corequisites: MUS 222 and MUS 262

This course is a continuation of MUS 241. Emphasis is placed on the development of performance skills and the study of styles of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. Enrollment is limited to music majors.

MUS 251 Class Music III 0 2 0 0 1
Prerequisites: MUS 152

This course is a continuation of MUS 152. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. Colleges may use a letter suffix to designate a specific instrument or voice (see above table). This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MUS 252 Class Music IV 0 2 0 0 1
Prerequisites: MUS 251

This course is a continuation of MUS 251. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. Colleges may use a letter suffix to designate a specific instrument or voice (see above table). This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

MUS 261 Applied Music III 1 2 0 0 2
Prerequisites: MUS 122 and MUS 162
Corequisites: MUS 221 and MUS 241

This course is a continuation of MUS 162. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. Enrollment is limited to music majors; additional private lessons and practice hours required.

MUS 262 Applied Music IV 1 2 0 0 2
Prerequisites: MUS 221 and MUS 261

Corequisites: MUS 222 and MUS 242

This course is a continuation of MUS 261. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. Enrollment is limited to music majors; additional private lessons and practice hours required.

NETWORKING TECHNOLOGY

NET 125 Networking Basics 1 4 0 0 3

This course introduces the networking field. Emphasis is placed on network terminology and protocols, local-area networks, wide-area networks, OSI model, cabling, router programming, Ethernet, IP addressing, and network standards. Upon completion, students should be able to perform tasks related to networking mathematics, terminology, and models, media, Ethernet, subnetting, and TCP/IP Protocols. (Offered fall semester)

NET 126 Routing Basics 1 4 0 0 3
Prerequisites: NET 125

This course focuses on initial router configuration, router software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Emphasis will be placed on the fundamentals of router configuration, managing router software, routing protocol, and access lists. Upon completion, students should have an understanding of routers and their role in WANs, router configuration, routing protocols, TCP/IP, troubleshooting, and ACLs. (Offered spring semester)

NET 225 Routing and Switching I 1 4 0 0 3
Prerequisites: NET 126

This course focuses on advanced IP addressing techniques, intermediate routing protocols, command-line interface configuration of switches, Ethernet switching, VLANs, STP, and VTP. Emphasis will be placed on application and demonstration of skills acquired in prerequisite courses. Upon completion, students should be able to perform tasks related to VLSM, routing protocols, switching concepts and configuration, STP, VLANs, and VTP. (Offered fall semester)

NET 226 Routing and Switching II 1 4 0 0 3
Prerequisites: NET 225

This course introduces WAN theory and design, WAN technology, PPP, Frame Relay, ISDN, and additional case studies. Topics include network congestion problems, TCP/IP transport and network layer protocols, advanced routing and switching configuration, ISDN protocols, PPP encapsulation operations on a router. Upon completion, students should be able to provide solutions for network routing problems, identify ISDN protocols, and describe the Spanning Tree protocol. (Offered spring semester)

NET 240 Network Design 3 0 0 0 3
Prerequisites: NET 110 or NET 125

This course covers the principles of the design of LANs and WANs. Topics include network architecture, transmission systems, traffic management, bandwidth requirements, Internet working devices, redundancy, and broad-band versus base-band systems. Upon completion, students should be able to design a network to meet specified business and technical requirements. (Offered spring semester)

NETWORKING OPERATING SYSTEMS**NOS 110 Operating System Concepts 2 3 0 0 3**

This course introduces students to a broad range of operating system concepts, including installation and maintenance. Emphasis is placed on operating system concepts, management, maintenance, and resources required. Upon completion of this course, students will have an understanding of OS concepts, installation, management, maintenance, using a variety of operating systems. (Offered spring semester)

NOS 120 Linux/UNIX Single User 2 2 0 0 3

Prerequisites: NOS 110

This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include Linux file system and access permissions, GNOME Interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles. (Offered fall semester)

NOS 130 Windows Single User 2 2 0 0 3

Prerequisites: NOS 110

This course introduces operating system concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating systems functions at the support level in a single-user environment. (Offered fall semester)

NOS 220 Linux/UNIX Admin I 2 2 0 0 3

Prerequisites: NOS 120

This course introduces the Linux file system, group administration, and system hardware controls. Topics include installation, creation and maintaining file systems, NIS client and DHCP client configuration, NFS, SMB/Samba, Configure X, Gnome, KDE, basic memory, processes, and security. Upon completion, students should be able to perform system administration tasks including installation, configuring and attaching a new Linux workstation to an existing network. (Offered spring semester)

NOS 230 Windows Admin I 2 2 0 0 3

This course covers the installation and administration of a Windows Server network operating system. Topics include managing and maintaining physical and logical devices, access to resources, the server environment, managing users, computers, and groups, and Managing/Implementing Disaster Recovery. Upon completion, students should be able to manage and maintain a Windows Server environment. (Offered spring semester)

NURSING**NUR 111 Intro to Health Concepts 4 6 6 0 8**

Prerequisites: Listing on the Nurse Aide Registry

Corequisites: BIO 165

This course introduces the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts within each domain including medication administration, assessment, nutrition, ethics, interdisciplinary teams, informatics, evidence-based practice, individual-centered care, and quality improvement. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course. (Offered fall semester)

NUR 112 Health-Illness Concepts 3 0 6 0 5

Prerequisites: NUR 111

Corequisites: NUR 211, BIO 166 and PSY 150

This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of acid-base, metabolism, cellular regulation, oxygenation, infection, stress/coping, health-wellness-illness, communication, caring interventions, managing care, safety, quality improvement, and informatics. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course. (Offered spring semester)

NUR 113 Family Health Concepts 3 0 6 0 5

Prerequisites: NUR 111, NUR 112, NUR 114 and NUR 211

Corequisites: NUR 212

This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of oxygenation, sexuality, reproduction, grief/loss, mood/affect, behaviors, development, family, health-wellness-illness, communication, caring interventions, managing care, safety, and advocacy. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course. (Offered fall semester)

NUR 114 Holistic Health Concepts 3 0 6 0 5

Prerequisites: NUR 111, NUR 112 and NUR 211

Corequisites: BIO 175, PSY 241

This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of cellular regulation, perfusion, inflammation, sensory perception, stress/coping, mood/affect, cognition, self, violence, health-wellness-illness, professional behaviors, caring interventions, and safety. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course. (Offered summer semester)

NUR 211 Health Care Concepts 3 0 6 0 5

Prerequisites: NUR 111

Corequisites: NUR 112, BIO 166 and PSY 150

This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of cellular regulation, perfusion, infection, immunity, mobility, comfort, behaviors, health-wellness-illness, clinical decision-making, caring interventions, managing care, and safety. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course. (Offered spring semester)

NUR 212 Health System Concepts 3 0 6 0 5

Prerequisites: NUR 111, NUR 112, NUR 114 and NUR 211

Corequisites: NUR 113

This course is designed to further develop the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of grief/loss, violence, health-wellness-illness, collaboration, managing care, safety, advocacy, legal issues, policy, healthcare systems, ethics, accountability, and evidence-based practice. Upon completion, students should be able to provide safe nursing care incorporating the concepts identified in this course. (Offered fall semester)

NUR 213 Complex Health Concepts 4 3 15 0 10

Prerequisites: NUR 111, NUR 112, NUR 113, NUR 114, NUR 211 and NUR 212

This course is designed to assimilate the concepts within the three domains of the individual, healthcare, and nursing. Emphasis is placed on the concepts of fluid/electrolytes, metabolism, perfusion, mobility, stress/coping, violence, health-wellness-illness, professional behaviors, caring interventions, managing care, healthcare systems, and quality improvement. Upon completion, students should be able to demonstrate the knowledge, skills, and attitudes necessary to provide quality, individualized, entry level nursing care. (Offered spring semester)

OFFICE SYSTEMS TECHNOLOGY**OST 131 Keyboarding 1 2 0 0 2**

This course covers basic keyboarding skills. Emphasis is placed on the touch system, correct techniques, and development of speed and accuracy. Upon completion, students should be able to key at an acceptable speed and accuracy level using the touch system. This course is considered developmental for a student with a typing speed of less than 20 wpm. (Offered fall and spring semesters)

OST 134 Text Entry & Formatting 2 2 0 0 3

Prerequisites: OST 131 or typing speed of 20 wpm

This course is designed to provide skills needed to increase speed, improve accuracy, and format documents. Topics include letters, memos, tables, and business reports. Upon completion, students should be able to produce documents and key timed writings at speeds commensurate with employability. (Offered spring semester)

OST 136 Word Processing 2 2 0 0 3

This course is designed to introduce word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment. (Offered fall semester)

OST 137 Office Software Applications 2 2 0 0 3

This course introduces the concepts and functions of software that meets the changing needs of the community. Emphasis is placed on the terminology and use of software through a hands-on approach. Upon completion, students should be able to use software in a business environment. (Offered spring semester)

OST 141 Med Terms I-Med Office 3 0 0 0 3

This course uses a language-structure approach to present the terminology and vocabulary that will be encountered in medical office settings. Topics include word parts that relate to systemic components, conditions, pathology, and disorder remediation in approximately one-half of the systems of the human body. Upon completion, students should be able to relate words to systems, pluralize, define, pronounce, and construct sentences with the included terms. (Offered fall and spring semester)

OST 148 Med Coding Billing & Insurance 3 0 0 0 3

This course introduces fundamentals of medical coding, billing, and insurance. Emphasis is placed on the medical billing cycle to include third party payers, coding concepts, and forms preparation. Upon completion, students should be able to explain the life cycle and accurately complete a medical insurance claim. (Offered fall and spring semester)

OST 149 Medical Legal Issues 3 0 0 0 3

This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior. (Offered summer semester)

OST 153 Office Finance Solutions 1 2 0 0 2

This course introduces basic bookkeeping concepts. Topics include entering data in accounts payable and receivable, keeping petty cash records, maintaining inventory, reconciling bank statements, running payroll, and generating simple financial reports. Upon completion, students should be able to demonstrate competence in the entry and manipulation of data to provide financial solutions for the office. (Offered fall semester)

OST 164 Text Editing Applications 3 0 0 0 3

This course provides a comprehensive study of editing skills needed in the workplace. Emphasis is placed on grammar, punctuation, sentence structure, proofreading, and editing. Upon completion, students should be able to use reference materials to compose and edit text. (Offered fall semester)

OST 171 Intro to Virtual Office 2 2 0 0 3

This course introduces the skills and abilities needed to conduct a variety of office administration activities using the latest technology. Students will learn the proper etiquette of communicating electronically as well as the unique procedures and logistics for conducting business in the virtual office. Upon completion, students will know the vocabulary of the virtual office and will have a basic understanding of modern technical communication tools. This course is a unique requirement of the Virtual Office concentration in the Office Systems Technology program. (Offered fall semester)

OST 184 Records Management 2 2 0 0 3

This course includes the creation, maintenance, protection, security, and disposition of records stored in a variety of media forms. Topics include alphabetic, geographic, subject, and numeric filing methods. Upon completion, students should be able to set up and maintain a records management system. (Offered fall semester)

OST 233 Office Publications Design 2 2 0 0 3

Prerequisites: OST 136

This course provides entry-level skills in using software with desktop publishing capabilities. Topics include principles of page layout, desktop publishing terminology and applications, and legal and ethical considerations of software use. Upon completion, students should be able to design and produce professional business documents and publications. (Offered summer semester)

OST 236 Adv Word/Information Proc 2 2 0 0 3

Prerequisites: OST 136

This course develops proficiency in the utilization of advanced word/information processing functions. Emphasis is placed on advanced word processing features. Upon completion, students should be able to produce a variety of complex business documents. (Offered spring and summer semester)

OST 243 Med Office Simulation 2 2 0 0 3

Prerequisites: OST 148

This course introduces medical systems used to process information in the automated office. Topics include traditional and electronic information resources, storing and retrieving information, and the billing cycle. Upon completion, students should be able to use the computer accurately to schedule, bill, update, and make corrections. (Offered summer semester)

OST 271 Office Web Technologies 2 2 0 0 3

This course provides a working knowledge of software and hardware tools used in the virtual office. Students will learn to use the Internet for research, planning, and decision making in an office environment. Upon completion, students will be able to use current and emerging technologies to solve problems and complete projects in the virtual office. This course is a unique requirement of the Virtual Office concentration in the Office Systems Technology program. (Offered spring semester)

OST 272 Virtual Office Capstone 1 2 0 0 2

This course requires students to plan, design, create and publish a Virtual Assistant website. Students will also develop a marketing strategy and promotional material for the virtual office. Upon completion, students will have prepared a professional portfolio. This course is a unique requirement of the Virtual Office concentration in the Office Systems Technology program. (Offered spring semester)

OST 284 Emerging Technologies 1 2 0 0 2

This course provides opportunities to explore emerging technologies. Emphasis is placed on identifying, researching, and presenting current technological topics for class consideration and discussion. Upon completion, students should be able to understand the importance of keeping abreast of technological changes that affect the office professional. (Offered summer semester)

OST 289 Administrative Office Management 2 2 0 0 3

Prerequisites: OST 164 and either OST 134 or OST 136

This course is designed to be a capstone course for the office professional and provides a working knowledge of modern office procedures. Emphasis is placed on scheduling, telephone procedures, travel arrangements, event planning, office design and ergonomics. Upon completion, students should be able to adapt in an office environment. (Offered spring semester)

PHYSICAL EDUCATION**PED 110 Fit and Well for Life 1 2 0 0 2**

This course is designed to investigate and apply the basic concepts and principles of lifetime physical fitness and other health-related factors. Emphasis is placed on wellness through the study of nutrition, weight control, stress management, and consumer facts on exercise and fitness. Upon completion, students should be able to plan a personal, lifelong fitness program based on individual needs, abilities, and interests. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 111 Physical Fitness I 0 3 0 0 1

This course provides an individualized approach to physical fitness utilizing the five major components. Emphasis is placed on the scientific basis for setting up and engaging in personalized physical fitness programs. Upon completion, students should be able to set up and implement an individualized physical fitness program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 117 Weight Training I 0 3 0 0 1

This course introduces the basics of weight training. Emphasis is placed on developing muscular strength, muscular endurance, and muscle tone. Upon completion, students should be able to establish and implement a personal weight-training program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 118 Weight Training II 0 3 0 0 1

Prerequisites: PED 117

This course covers advanced levels of weight training. Emphasis is placed on meeting individual training goals and addressing weight training needs and interests. Upon completion, students should be able to establish and implement an individualized advanced weight-training program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 119 Circuit Training 0 3 0 0 1

This course covers the skills necessary to participate in a developmental fitness program. Emphasis is placed on the circuit training method which involves a series of conditioning timed stations

arranged for maximum benefit and variety. Upon completion, students should be able to understand and appreciate the role of circuit training as a means to develop fitness. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 120 Walking for Fitness 0 3 0 0 1

This course introduces fitness through walking. Emphasis is placed on stretching, conditioning exercises, proper clothing, fluid needs, and injury prevention. Upon completion, students should be able to participate in a recreational walking program. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. Parts of the course may be at an off-campus location.

PED 121 Walk, Jog, Run 0 3 0 0 1

This course covers the basic concepts involved in safely and effectively improving cardiovascular fitness. Emphasis is placed on walking, jogging, or running as a means of achieving fitness. Upon completion, students should be able to understand and appreciate the benefits derived from these activities. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. Parts of the course may be at an off-campus location.

PED 122 Yoga I 0 2 0 0 1

This course introduces the basic discipline of yoga. Topics include proper breathing, relaxation techniques, and correct body positions. Upon completion, students should be able to demonstrate the procedures of yoga. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

PED 123 Yoga II 0 2 0 0 1

Prerequisites: PED 122

This course introduces more detailed aspects of the discipline of yoga. Topics include breathing and physical postures, relaxation, and mental concentration. Upon completion, students should be able to demonstrate advanced procedures of yoga. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 137 Badminton 0 2 0 0 1

This course covers the fundamentals of badminton. Emphasis is placed on the basics of serving, clears, drops, drives, smashes, and the rules and strategies of singles and doubles. Upon completion, students should be able to apply these skills in playing situations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 186 Dancing for Fitness 0 2 0 0 1

This course is designed to develop movement and recreational dance skills, safety, fitness, coordination, and techniques used to teach various groups. Emphasis is placed on participation and practice with adapting dances for ages and ability levels. Upon completion, students should be able to demonstrate knowledge of fitness through social, folk, and square dance participation and instruction. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 217 Pilates I 0 2 0 0 1

This course provides an introduction to the Pilates method of body conditioning exercise. Topics include instruction in beginning and intermediate Pilates exercises using a mat or equipment, history of Pilates method, and relevant anatomy and physiology. Upon completion, students should be able to perform beginning and intermediate exercises, and possess an understanding of the benefits of conditioning the body's core muscles. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PED 218 Pilates II 0 2 0 0 1**Prerequisites:** PED 217

This course provides continued instruction to the Pilates method of body conditioning exercise. Topics include instruction in intermediate and advanced Pilates exercises using a mat or equipment, relevant anatomy and physiology, and further discussion of related concepts. Upon completion, students should be able to perform intermediate and advanced exercises, and possess the autonomy to maintain their own personal Pilates practice. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

PHILOSOPHY**PHI 210 History of Philosophy 3 0 0 0 3****Prerequisites:** ENG 111

This course introduces fundamental philosophical issues through an historical perspective. Emphasis is placed on such figures as Plato, Aristotle, Lao-Tzu, Confucius, Augustine, Aquinas, Descartes, Locke, Kant, Wollstonecraft, Nietzsche, and Sartre. Upon completion, students should be able to identify and distinguish among the key positions of the philosophers studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

PHI 230 Introduction to Logic 3 0 0 0 3**Prerequisites:** ENG 111

This course introduces basic concepts and techniques for distinguishing between good and bad reasoning. Emphasis is placed on deduction, induction, validity, soundness, syllogisms, truth functions, predicate logic, analogical inference, common fallacies, and scientific methods. Upon completion, students should be able to analyze arguments, distinguish between deductive and inductive arguments, test validity, and appraise inductive reasoning. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

PHI 240 Introduction to Ethics 3 0 0 0 3**Prerequisites:** ENG 111

This course introduces theories about the nature and foundations of moral judgments and applications to contemporary moral issues. Emphasis is placed on moral theories such as consequentialism, deontology, and virtue ethics. Upon completion, students should be able to apply various ethical theories to moral issues such as abortion, capital punishment, poverty, war, terrorism, the treatment of animals, and issues arising from new technologies. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education humanities/fine arts requirement for the Associate in Arts and the Associate in Science Degrees.

PHYSICAL SCIENCE**PHS 130 Earth Science 3 2 0 0 4**

This course is a survey of the forces that impact the earth. Topics include geology, oceanography, and meteorology. Upon completion, students should be able to explain and identify the forces within, on, and around the earth as they influence the earth's dynamics. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement. A lab fee is required.

PHYSICS**PHY 131 Physics-Mechanics 3 2 0 0 4****Prerequisites:** MAT 121 or MAT 171

This algebra/trigonometry-based course introduces fundamental physical concepts as applied to engineering technology fields.

Topics include systems of units, problem-solving methods, graphical analysis, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields. A lab fee is required.

PHY 151 College Physics I 3 2 0 0 4**Prerequisites:** MAT 171

This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education natural science requirement for the Associate in Science Degree. A lab fee is required.

PHY 152 College Physics II 3 2 0 0 4**Prerequisites:** PHY 151

This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education natural science requirement for the Associate in Science Degree. A lab fee is required.

PHY 251 General Physics I 3 3 0 0 4**Prerequisites:** MAT 271**Corequisites:** MAT 272

This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vector operations, linear kinematics and dynamics, energy, power, momentum, rotational mechanics, periodic motion, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education natural science requirement for the Associate in Science Degree. A lab fee is required.

PHY 252 General Physics II 3 3 0 0 4**Prerequisites:** MAT 272 and PHY 251

This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education natural science requirement for the Associate in Science Degree. A lab fee is required.

PLASTICS**PLA 162 Plastics Manufacturing Processes 2 3 0 0 3**

This course covers manufacturing processes including machining, sawing, routing, milling, drilling, taping, turning, thermoforming, molding, extrusion, laminating, reinforcing, expansion, casting, coating, assembly, and finishing. Emphasis is placed on the process and equipment requirements, special operational concerns, setup, operation, tooling, capability limitations, maintenance, and safety. Upon completion, students should be able to select the correct process for the material required and discuss machine operation, setup, tooling, safety, and scrap recycling.

POLITICAL SCIENCE**POL 120 American Government 3 0 0 0 3**

This course is a study of the origins, development, structure, and functions of American government. Topics include the constitutional framework, federalism, the three branches of government including the bureaucracy, civil rights and liberties, political participation and behavior, and policy process. Upon completion, students should be able to demonstrate an understanding of the basic concepts and participatory processes of the American political system. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education social/behavioral science requirement for the Associate in Arts and the Associate in Science Degrees. (Offered fall semester)

POL 130 State and Local Government 3 0 0 0 3

This course includes state and local political institutions and practices in the context of American federalism. Emphasis is placed on procedural and policy differences as well as political issues in state, regional, and local governments of North Carolina. Upon completion, students should be able to identify and discuss various problems associated with intergovernmental politics and their effect on the community and the individual. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. (Offered spring semester)

PSYCHOLOGY**PSY 150 General Psychology 3 0 0 0 3**
Prerequisites: DRE 098

This course provides an overview of the scientific study of human behavior. Topics include history, methodology, biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, and other relevant topics. Upon completion, students should be able to demonstrate a basic knowledge of the science of psychology. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education social/behavioral science requirement for the Associate in Arts and the Associate in Science Degrees.

PSY 231 Forensic Psychology 3 0 0 0 3
Prerequisites: PSY 150

This course introduces students to concepts which unite psychology and the legal system. Topics include defining competency, insanity, involuntary commitment, as well as introducing forensic assessment techniques, such as interviewing process, specialized assessments, and collecting collateral information. Upon completion, students should be able to demonstrate knowledge in areas of forensic psychology: risk assessment, criminal competencies, insanity, psychopathology, and mentally disordered offenders. This course has been approved for transfer under the Comprehensive Articulation Agreement as a premajor and/or elective course requirement.

PSY 237 Social Psychology 3 0 0 0 3
Prerequisites: PSY 150 or SOC 210

This course introduces the study of individual behavior within social contexts. Topics include affiliation, attitude formation and change, conformity, altruism, aggression, attribution, interpersonal attraction, and group behavior. Upon completion, students should be able to demonstrate an understanding of the basic principles of social influences on behavior. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

PSY 241 Developmental Psych 3 0 0 0 3
Prerequisites: PSY 150

This course is a study of human growth and development. Emphasis is placed on major theories and perspectives as they relate to the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

PSY 271 Sports Psychology 3 0 0 0 3
Prerequisites: PSY 150

This course provides an overview of the field of sports and exercise psychology. Topics include concentration, goal setting, arousal level, exercise psychology, mental imagery, confidence, and other issues related to sport and exercise performance. Upon completion, students should be able to demonstrate a knowledge of psychological factors involved in sport and exercise. This course has been approved for transfer under the Comprehensive Articulation Agreement as a premajor and/or elective course requirement.

PSY 281 Abnormal Psychology 3 0 0 0 3
Prerequisites: PSY 150

This course provides an examination of the various psychological disorders, as well as theoretical, clinical, and experimental perspectives of the study of psychopathology. Emphasis is placed on terminology, classification, etiology, assessment, and treatment of the major disorders. Upon completion, students should be able to distinguish between normal and abnormal behavior patterns as well as demonstrate knowledge of etiology, symptoms, and therapeutic techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

REFRIGERATION**REF 211 Glycol Chiller Systems 2 4 0 0 4**

This course introduces the fundamentals of glycol chilling equipment as found in the brewing industry. Topics include characteristics of glycol, principles of glycol chilling, the chiller, the refrigerant, glycol and piping circuits, freeze prevention, purging, and equipment flexibility. Upon completion, students should be able to describe the components, controls, and operations of glycol chilling equipment and perform basic maintenance tasks.

RELIGION**REL 110 World Religions 3 0 0 0 3**

This course introduces the world's major religious traditions. Topics include Primal religions, Hinduism, Buddhism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 211 Intro to Old Testament 3 0 0 0 3

This course is a survey of the literature of the Hebrews with readings from the law, prophets, and other writings. Emphasis is placed on the use of literary, historical, archeological, and cultural analysis. Upon completion, students should be able to use the tools of critical analysis to read and understand Old Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 212 Intro to New Testament 3 0 0 0 3

This course is a survey of the literature of first-century Christianity with readings from the gospels, Acts, and the Pauline and pastoral letters. Topics include the literary structure, audience, and religious perspective of the writings, as well as the historical and cultural context of the early Christian community. Upon completion, students should be able to use the tools of critical analysis to read and understand New Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 221 Religion in America 3 0 0 0 3

This course is an examination of religious beliefs and practice in the United States. Emphasis is placed on mainstream religious traditions and non-traditional religious movements from the Colonial period to the present. Upon completion, students should be able to recognize and appreciate the diversity of religious traditions in America. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REAL ESTATE**RLS 112 Broker Prelicensing 5 0 0 0 5**

This course provides basic instruction in real estate principles and practices. Topics include law, finance, brokerage, closing, valuation, management, taxation, mathematics, construction, land use, property insurance, and NC License Law and Commission Rules. Upon completion, students should be able to demonstrate basic knowledge and skills necessary for real estate sales. (Offered fall and spring semesters)

INFORMATION SYSTEMS SECURITY**SEC 110 Security Concepts 2 2 0 0 3**

This course introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of networking and security, security issues, trends, security resources, and the role of policy, people, and processes in information security. Upon completion, students should be able to identify information security risks, create an information security policy, and identify processes to implement and enforce policy. (Offered fall semester)

SIMULATION AND GAME DEVELOPMENT**SGD 111 Introduction to SGD 2 3 0 0 3**

This course provides students with an introduction to simulation and game development. Topics include setting, storytelling, narrative, character design, interface design, game play, internal economy, core mechanics, game genres, AI, the psychology of game design and professionalism. Upon completion, students should be able to demonstrate knowledge of the major aspects of simulation and game design and development. (Offered fall semester)

SGD 112 SGD Design 2 3 0 0 3

This course introduces the fundamentals of simulation and game design. Topics include industry standards and design elements for simulations and games. Upon completion, students should be able to design simple simulations and/or games. (Offered fall semester)

SGD 113 SGD Programming 2 3 0 0 3

This course introduces the fundamentals of programming languages and tools employed in simulation and game development. Emphasis is placed on programming concepts used to create simulations and games. Upon completion, students should be able to program simple games and/or simulations. A course fee is required. (Offered spring semester)

SGD 114 3D Modeling 2 3 0 0 3

This course introduces the tools required to create three dimensional (3D) models. Emphasis is placed on exploring tools used to create 3D models. Upon completion, students should be able to create and animate 3D models using 3D modeling tools. A course fee is required. (Offered spring semester)

SGD 117 Art for Games 2 3 0 0 3

This course introduces students to the basic principles of art and how they apply to simulations and games. Emphasis is placed on learning to develop industry quality concept art for characters and other assets, as well as techniques needed to create such art. Upon completion, students should be able to create their own industry standard concept art for use in SGD projects. A course fee is required. (Offered fall semester)

SGD 162 SG 3D Animation 2 3 0 0 3

This course introduces the fundamental principles of 3D animation used in simulation and game development. Emphasis is placed on a historical survey of 3D animation, aspects of the 3D animation techniques. Upon completion, students should be able to produce 3D character sketches, morph simple objects, create walk and run cycles and develop professional storyboards. A course fee is required. (Offered spring semester)

SGD 165 SG Character Development 2 3 0 0 3

This course introduces the concepts needed to create fictional personality for use in digital videos, animations, simulations and games. Topics include aspects of character, developing backgrounds, mannerisms and voice. Upon completion, students should be able to develop characters and backgrounds for simulations and games. (Offered summer semester)

SGD 172 Virtual SG Environments 2 3 0 0 3

This course covers the use of virtual reality tools and techniques in simulation and game development. Emphasis is placed on acquiring the skills necessary to create scalable virtual characters and environments for use in simulations and games. Upon completion, students should be able to create a simple game or simulation in a virtual environment.

SGD 174 SG Level Design 2 3 0 0 3

This course introduces the tools used to create levels for real-time simulation and games. Topics include level design, architecture theory, modeling for 3D engines and texturing methods. Upon completion, students should be able to design simple levels using industry standard tools. A course fee is required. (Offered fall semester)

SGD 212 SGD Design II 2 3 0 0 3**Prerequisites: SGD 112**

The course covers the advanced principles of simulation and game design. Topics include advanced design concepts in simulation and game development. Upon completion, students should be able to design an advanced simulation or game. (Offered spring semester)

SGD 213 SGD Programming II 2 3 0 0 3**Prerequisites: SGD 113, CSC 134, CSC 151, or CSC 153**

This course covers advanced programming concepts used to create simulations and games. Emphasis is placed on acquiring advanced programming skills for use in creating simulations and games. Upon completion, students should be able to program an advanced simulation or game. A course fee is required. (Offered fall semester)

SGD 214 3D Modeling II 2 3 0 0 3
Prerequisites: SGD 114

This course introduces the tools used to create and animate advanced 3 dimensional models. Emphasis is placed on identifying and utilizing the tools required to create and animate advanced 3D models. Upon completion, students should be able to create and animate advanced 3D models using 3D modeling tools. A course fee is required. (Offered fall semester)

SGD 244 3D Modeling III 2 3 0 0 3
Prerequisites: SGD 214

This course is designed to further a student's knowledge in creating visually compelling 3D models through the use of industry-standard software. Emphasis is placed on learning how to develop accurate textures and normal maps. Upon completion, students should be able to develop industry caliber 3D models. A course fee is required. (Offered spring semester)

SGD 289 SGD Project 2 3 0 0 3
Prerequisites: SGD 212, SGD 213, SGD 214, or SGD 285

This course provides students with the opportunity to create a functional simulation or game with minimal instructor support. Emphasis is placed upon verbal and written communication, skill documentation, professional presentation and user training. Upon completion, students should be able to create and professionally present a fully functional simulation or game. A course fee is required. (Offered spring semester)

SOCIOLOGY

SOC 210 Introduction to Sociology 3 0 0 0 3
Prerequisites: DRE 098

This course introduces the scientific study of human society, culture, and social interactions. Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies. This course has been approved to satisfy the Universal General Education Transfer Component of the Comprehensive Articulation Agreement general education social/behavioral science requirement for the Associate in Arts and the Associate in Science Degrees.

SOC 213 Sociology of the Family 3 0 0 0 3
Prerequisites: DRE 098

This course covers the institution of the family and other intimate relationships. Emphasis is placed on mate selection, gender roles, sexuality, communication, power and conflict, parenthood, diverse lifestyles, divorce and remarriage, and economic issues. Upon completion, students should be able to analyze the family as a social institution and the social forces which influence its development and change. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

SOC 220 Social Problems 3 0 0 0 3
Prerequisites: DRE 098

This course provides an in-depth study of current social problems. Emphasis is placed on causes, consequences, and possible solutions to problems associated with families, schools, workplaces, communities, and the environment. Upon completion, students should be able to recognize, define, analyze, and propose solutions to these problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

SPANISH

SPA 110 Introduction to Spanish 2 0 0 0 2

This course provides an introduction to understanding, speaking, reading, and writing Spanish. Emphasis is placed on pronunciation, parts of speech, communicative phrases, culture, and skills for language acquisition. Upon completion, students should be able to identify and apply basic grammar concepts, display cultural awareness, and communicate in simple phrases in Spanish.

SPA 111 Elementary Spanish I 3 0 0 0 3
Prerequisites: SPA 110 or high school Spanish

Corequisites: SPA 181

This course introduces the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 112 Elementary Spanish II 3 0 0 0 3
Prerequisites: SPA 111

Corequisites: SPA 182

This course is a continuation of SPA 111 focusing on the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate further cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 120 Spanish for the Workplace 3 0 0 0 3

This course offers applied Spanish for the workplace to facilitate basic communication with people whose native language is Spanish. Emphasis is placed on oral communication and career-specific vocabulary that targets health, business, and/or public service professions. Upon completion, students should be able to communicate at a functional level with native speakers and demonstrate cultural sensitivity.

SPA 141 Culture and Civilization 3 0 0 0 3

This course provides an opportunity to explore issues related to the Hispanic world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the Hispanic world. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SPA 161 Cultural Immersion 2 3 0 0 3
Prerequisites: SPA 111

This course explores Hispanic culture through intensive study on campus and field experience in a host country or comparable area within the United States. Topics include an overview of linguistic, historical, geographical, sociopolitical, economic, and/or artistic concerns of the area visited. Upon completion, students should be able to exhibit first-hand knowledge of issues pertinent to the host area and demonstrate understanding of cultural differences. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SPA 181 Spanish Lab 1 0 2 0 0 1
Corequisites: SPA 111

This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SPA 182 Spanish Lab 2 0 2 0 0 1
Prerequisites: SPA 181
Corequisites: SPA 112

This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SPA 211 Intermediate Spanish I 3 0 0 0 3
Prerequisites: SPA 112

This course provides a review and expansion of the essential skills of the Spanish language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 212 Intermediate Spanish II 3 0 0 0 3
Prerequisites: SPA 211

This course provides a continuation of SPA 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

SPA 215 Spanish Phonetics/Structure 3 0 0 0 3

This course is designed to improve the understanding of Spanish phonetics and the structure of the Spanish language. Topics include the structure of the Spanish language, phonology, morphology, and syntax. Upon completion, students should have an understanding of the phonetics and structure of the Spanish language and be able to contrast the structure of the Spanish and English languages.

SPA 221 Spanish Conversation 3 0 0 0 3
Prerequisites: SPA 212

This course provides an opportunity for intensive communication in spoken Spanish. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SPA 231 Reading and Composition 3 0 0 0 3
Prerequisites: SPA 212

This course provides an opportunity for intensive reading and composition in Spanish. Emphasis is placed on the use of literary and cultural materials to enhance and expand reading and writing skills. Upon completion, students should be able to demonstrate in writing an in-depth understanding of assigned readings. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SPA 281 Spanish Lab 3 0 2 0 0 1
Prerequisites: SPA 182
Corequisites: SPA 211

This course provides an opportunity to enhance the review and expansion of the essential skills of the Spanish language. Emphasis is placed on the study of authentic and representative literary and cultural texts through the use of various supplementary learning media and materials. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SPA 282 Spanish Lab 4 0 2 0 0 1
Prerequisites: SPA 281
Corequisites: SPA 212

This course provides an opportunity to enhance the review and expansion of the essential skills of the Spanish language. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts through the use of various supplementary learning media and materials. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.

SPANISH INTERPRETER

SPI 113 Intro to Spanish Inter. 3 0 0 0 3
Prerequisites: DRE 098 and SPA 110

This course introduces the field of interpreting, interpretation models, cognitive processes associated with interpretation, professional ethical standards, employment opportunities, and working conditions. Topics include specialized jargon, code of ethics, interpreter assessments/qualifications, and protocol associated with various settings. Upon completion, students should be able to explain the rationale for placement of interpreters and apply ethical standards to a variety of working situations.

SPI 114 Analytical Skills Spanish Inter. 3 0 0 0 3
Prerequisites: SPI 113

This course is designed to improve cognitive processes associated with interpreting, listening, short-term memory, semantic equivalence, visual/auditory processing, thought organization and logic. Emphasis is placed on developing skills necessary to generate equivalent messages between Spanish and English. Upon completion, students should be able to consecutively interpret non-technical, interactive messages between Spanish and English.

SPI 213 Review of Grammar 3 0 0 0 3
Prerequisites: SPA 112

This course is designed to review the common elements of Spanish grammar in oral and written form. Emphasis is placed on the fundamental grammatical concepts of the Spanish language. Upon completion, students should be able to demonstrate comprehension and correct usage of specified grammatical concepts in both oral and written form.

SPI 214 Introduction to Translation 3 0 0 0 3
Prerequisites: ENG 114, SPA 212 and SPI 114

This course is designed to improve the quality of Spanish to English and English to Spanish translation. Emphasis is placed on the practice of Spanish to English and English to Spanish translation in a variety of prose styles. Upon completion, students should be able to demonstrate the usage and understanding of the processes involved in translating.

SUSTAINABILITY TECHNOLOGIES

SST 110 Intro to Sustainability 3 0 0 0 3

This course introduces sustainability issues and individual contributions toward environmental sustainability. Topics include management processes needed to maximize renewable/non-renewable energy resources, economics of sustainability, and reduction of environmental impacts. Upon completion, students should be able to discuss sustainability practices and demonstrate an understanding of their effectiveness and impacts.

SST 120 Energy Use Analysis 2 2 0 0 3

This course introduces the principles of analyzing energy use, energy auditing tools and techniques, conservation techniques, and calculating energy savings. Topics include building system control theory, calibrating digital controls, energy loss calculations, and applicable conservation techniques. Upon completion, students should be able to demonstrate an understanding of energy use, audits, and controls in the analysis of energy consumption. A lab fee is required.

SST 140 Green Bldg & Design Concepts 3 0 0 0 3

This course is designed to introduce the student to sustainable building design and construction principles and practices. Topics include sustainable building rating systems and certifications, energy efficiency, indoor environmental quality, sustainable building materials and water use. Upon completion, students should be able to identify the principles and practices of sustainable building design and construction. A lab fee is required.

SURGICAL TECHNOLOGY

SUR 110 Intro to Surgical Tech 3 0 0 0 3

Prerequisites: Enrollment in the Surg Tech program

Corequisites: SUR 111 and BIO 163

This course provides a comprehensive study of peri-operative care, patient care concepts, and professional practice concepts within the profession of surgical technology. Topics include introductory concepts, organizational structure and relationships, legal, ethical and moral issues, medical terminology, pharmacology, anesthesia, wound healing management concepts, and the technological sciences. Upon completion, students should be able to apply theoretical knowledge of the course topics to the practice of surgical technology. (Offered fall semester)

SUR 111 Periop Patient Care 5 6 0 0 7

Prerequisites: Enrollment in the Surg Tech program

Corequisites: SUR 110 and BIO 163

This course provides the surgical technology student the theoretical knowledge required to function in the pre-operative, intra-operative, and post-operative role. Topics include asepsis, disinfection and sterilization, physical environment, instrumentation, equipment, peri-operative patient care, and peri-operative case management. Upon completion, students should be able to apply the principles and practice of the peri-operative team member to the operative environment. (A course fee is required) (Offered fall semester)

SUR 122 Surgical Procedures I 5 3 0 0 6

Prerequisites: SUR 110, SUR 111 and BIO 163

Corequisites: BIO 175 and SUR 123

This course provides an introduction to selected basic and intermediate surgical specialties that students are exposed to the first clinical rotation. Emphasis is placed on related surgical anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment. (Offered spring semester)

SUR 123 SUR Clinical Practice I 0 0 21 0 7

Prerequisites: SUR 110, SUR 111 and BIO 163

Corequisites: SUR 122 and BIO 175

This course provides clinical experience with a variety of perioperative assignments to build upon skills learned in SUR 111. Emphasis is placed on the scrub and circulating roles of the surgical technologist including aseptic technique and basic case preparation for selected surgical procedures. Upon completion, students should be able to prepare, assist with, and dismantle basic surgical cases in both the scrub and circulating roles. (Offered spring semester)

SUR 134 Surgical Procedures II 5 0 0 0 5

Prerequisites: SUR 122 and SUR 123

Corequisites: SUR 135

This course provides a comprehensive study of intermediate and advanced surgical specialties that students are exposed to in the second clinical rotation. Emphasis is placed on related surgical anatomy, pathology, and procedures that enhance theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics to the clinical operative environment. (Offered summer semester)

SUR 135 SUR Clinical Practice II 0 0 12 0 4

Prerequisites: SUR 123

Corequisites: SUR 134

This course provides clinical experience with a variety of perioperative assignments to build skills required for complex perioperative patient care. Emphasis is placed on greater technical skills, critical thinking, speed, efficiency, and autonomy in the operative setting. Upon completion, students should be able to function in the role of an entry-level surgical technologist. (Offered summer semester)

SUR 137 Prof Success Prep 1 0 0 0 1

Prerequisites: SUR 122 and SUR 123

Corequisites: SUR 134 and SUR 135

This course provides employability skills and an overview of theoretical knowledge in preparation for certification. Topics include test-taking strategies, resume preparation, interviewing strategies, communication skills, and teamwork concepts. Upon completion, students should be able to prepare a resume, demonstrate appropriate interview techniques, and identify strengths and weaknesses in preparation for certification. (Offered summer semester)

SUR 210 Adv SUR Clinical Practice 0 0 6 0 2

Prerequisites: SUR 134 and SUR 135

This course is designed to provide individualized experience in advanced practice, education, circulating, and managerial skills. Emphasis is placed on developing and demonstrating proficiency in skills necessary for advanced practice. Upon completion, students should be able to assume leadership roles in a chosen specialty area. (Offered spring semester)

SUR 211 Adv Theoretical Concepts 2 0 0 0 2
Prerequisites: SUR 134 and SUR 135

This course covers theoretical knowledge required for extension of the surgical technologist role. Emphasis is placed on advanced practice in complex surgical specialties, educational methodologies, and managerial skills. Upon completion, students should be able to assume leadership roles in a chosen specialty area. (Offered spring semester)

SUR 212 SUR Clinical Supplement 0 0 12 0 4
Prerequisites: SUR 134 and SUR 135

This course provides the opportunity to continue mastering the continuity of care in the peri-operative assignment. Emphasis is placed on maintaining and enhancing acquired clinical skills in the peri-operative setting. Upon completion, students should be able to demonstrate mastery of surgical techniques in the role of the entry surgical technologist. (Offered fall semester)

THREE-DIMENSIONAL PRINTING

TDP 110 Intro to 3D Printing 2 3 0 0 3

This course covers the historical, social and ethical issues, as well as the basic techniques surrounding 3D Printing. Topics include current and historical events, social impact of the technology and basic model creation and manipulation techniques. Upon completion, students should be able to demonstrate an understanding of the major advantages and disadvantages of 3D Printing technology as well as demonstrate an ability to create and print a simple project. A course fee is required.

TDP 140 Precision 3D Printing 2 3 0 0 3
Prerequisites: TDP 110

This course provides an introduction to precision printing using the basic techniques surrounding 3D Printing. Emphasis is placed on cost-effective production methods and dimensional quality control. Upon completion, students should be able to demonstrate an understanding of three-dimensional precision printing as well as demonstrate an ability to create and print an advanced project. A course fee is required.

TDP 289 3D Printing Project 2 3 0 0 3
Prerequisites: TDP 110

This course provides students the opportunity to create a functional multi-part project with minimal instructor support. Emphasis is placed on verbal and written communication, documentation and professional presentation. Upon completion, students should be able to design, explain, create and print an advanced multi-part project. A course fee is required.

TURFGRASS MANAGEMENT

TRF 110 Intro Turfgrass Cult & ID 3 2 0 0 4

This course covers the principles of reproduction, growth development, species characteristics, establishment and maintenance of golf courses and sports fields, and lawns. Topics include principles of reproduction, growth development, species characteristics, establishment and maintenance of golf courses and sports fields, and lawn applications. Upon completion, students should be able to identify turfgrass species and develop an establishment and maintenance plan for high quality turf areas in accordance with sustainable practices.

TRF 260 Adv Turfgrass Mgmt 3 2 0 0 4
Prerequisites: TRF 110

This course covers the principles and practices involved in turfgrass management. Topics include choosing the best management practice in mowing, pest control, fertilization, irrigation, traffic control, air control, budgeting, and materials procurement. Upon completion,

students should be able to demonstrate knowledge of the principles covered and select and apply the best practices in turfgrass management.

TRANSPORTATION TECHNOLOGY

TRN 110 Intro to Transportation Technology 1 2 0 0 2

This course covers workplace safety, hazardous materials, environmental regulations, hand tools, service information, basic concepts, vehicle systems, and common transportation industry terminology. Topics include familiarization with major vehicle systems, proper use of various hand and power tools, material safety data sheets, and personal protective equipment. Upon completion, students should be able to demonstrate appropriate safety procedures, identify and use basic shop tools, and describe government regulations regarding transportation repair facilities.

TRN 120 Basic Transp Electricity 4 3 0 0 5

This course covers basic electrical theory, wiring diagrams, test equipment, and diagnosis, repair and replacement of batteries, starters, and alternators. Topics include Ohm's Law, circuit construction, wiring diagrams, circuit testing, and basic troubleshooting. Upon completion, students should be able to properly use wiring diagrams, diagnose, test, and repair basic wiring, battery, starting, charging, and electrical concerns.

TRN 120A Basic Transp Electrical Lab 0 3 0 0 1
Corequisites: TRN 120

This course provides a lab that allows students to enhance their understanding of electrical components and circuits used in the transportation industry. Topics include inspection, diagnosis, and repair of electrical components and circuits using appropriate service information for specific transportation systems. Upon completion, students should be able to diagnose and service electrical components and circuits used in transportation systems. A lab fee is required.

TRN 130 Intro to Sustainable Transp 2 2 0 0 3

This course provides an overview of alternative fuels and alternative fuel vehicles. Topics include composition and use of alternative fuels including compressed natural gas, biodiesel, ethanol, hydrogen, and synthetic fuels, hybrid/electric, and vehicles using alternative fuels. Upon completion, students should be able to identify alternative fuel vehicles, explain how each alternative fuel delivery system operates, and perform minor repairs.

TRN 140 Transp Climate Control 1 2 0 0 2

This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis and repair of climate control systems. Topics include diagnosis and repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to diagnose and repair vehicle climate control systems.

TRN 140A Transp Climate Cont Lab 1 2 0 0 2
Corequisites: TRN 140

This course provides experiences for enhancing student skills in the diagnosis and repair of transportation climate control systems. Emphasis is placed on reclaiming, recovery, recharging, leak detection, climate control components, diagnosis, air conditioning equipment, tools and safety. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using appropriate tools, equipment, and service information. A lab fee is required.

TRN 145 Advanced Transp Electronics 2 3 0 0 3
Prerequisites: TRN 120

This course covers advanced transportation electronic systems including programmable logic controllers, on-board data networks, telematics, high voltage systems, navigation, collision avoidance systems and electronic accessories. Topics include interpretation of wiring schematics, reprogramming PLCs, diagnosing and testing data networks and other electronic concerns. Upon completion, students should be able to reprogram PLCs, diagnose and test data networks and other electronic concerns, and work safely with high voltage systems.

TRN 170 PC Skills for Transp 1 2 0 0 2

This course introduces students to personal computer literacy and Internet literacy with an emphasis on the transportation service industry. Topics include service information systems, management systems, computer-based systems, and PC-based diagnostic equipment. Upon completion, students should be able to access information pertaining to transportation technology and perform word processing.

TRN 180 Basic Welding for Transp 1 4 0 0 3

This course covers the terms and procedures for welding various metals used in the transportation industry with an emphasis on personal safety and environmental health. Topics include safety and precautionary measures, setup/operation of MIG equipment, metal identification methods, types of welds/joints, techniques, inspection methods, cutting processes and other related issues. Upon completion, students should be able to demonstrate a basic knowledge of welding operations and safety procedures according to industry standards.

TRN 180A Basic Welding for Transp Lab 0 3 0 0 1
Corequisites: TRN 180

This course provides a laboratory experience for enhancing student skills in welding and cutting procedures associated with the transportation industry. Emphasis is placed on safety and precautionary measures, setup/operation of MIG equipment, metal identification, welds/joints, techniques, inspection of welds/joints, cutting processes and other related topics. Upon completion, students should be able to demonstrate a basic knowledge of welding operations and safety procedures according to industry standards. A lab fee is required.

VITICULTURE/ENOLOGY

VEN 133 Intro to Winemaking 3 0 0 0 3

This course provides an overview of the history of winemaking, fermentation, winery operations, and physiology of wine consumption. Emphasis is placed on the types of wines produced in the United States with particular attention to the wines of the Southeast. Upon completion, students should be familiar with general winemaking procedures.

VEN 135 Intro to Viticulture 3 2 0 0 4

This course introduces grape growing. Topics include botany, fruiting and rootstock cultivars; anatomy and physiology; history and distribution of grapes; vine classification; world growing areas including latitude, climate and soils; and common diseases and pests. Upon completion, student should be able to demonstrate an overall understanding of the viticulture field.

VEN 283 Wine Production and Analysis 2 6 0 0 5
Prerequisites: VEN 133

This course applies previously introduced winemaking principles to actual wine production, while providing the student with sensory and chemical analytical tools fundamental to good winemaking. Topics include fruit choices and quality assessment, crushing, fermentation

monitoring and control, analysis of product and the process decisions dictated by these analyses. Upon completion, students should demonstrate familiarity with wine analysis winemaking practices.

WATER AND WASTE WATER TREATMENT

WAT 110 Basic Wastewater Treatment 2 3 0 0 3

This course provides practical training in the operation and maintenance of wastewater treatment plants. Emphasis is placed on wastewater treatment systems, maintenance procedures, basic process control, and laboratory analyses used by operators of wastewater treatment facilities. Upon completion, students should be able to make operational control changes and minor mechanical repairs needed to ensure compliance with NPDES discharge permits.

WEB TECHNOLOGIES

WEB 110 Internet/Web Fundamentals 2 2 0 0 3

This course introduces World Wide Web Consortium (W3C) standard markup language and services of the Internet. Topics include creating web pages, search engines, FTP, and other related topics. Upon completion, students should be able to deploy a hand-coded website created with mark-up language, and effectively use and understand the function of search engines. (Offered fall semester)

WEB 111 Intro to Web Graphics 2 2 0 0 3

This course introduces the creation of web graphics, and addressing problems peculiar to WWW display using appropriate software. Topics include web graphics file types, optimization, RGB color, web typography, elementary special effects, transparency, animation, slicing, basic photo manipulation, and other related topics. Upon completion, students should be able to create graphics, such as animated banners, buttons, backgrounds, logos, and manipulate photographic images for Web delivery. (Offered spring semester)

WEB 115 Web Markup and Scripting 2 2 0 0 3

This course introduces Worldwide Web Consortium (W3C) standard client-side Internet programming using industry-established practices. Topics include JavaScript, markup elements, stylesheets, validation, accessibility, standards, and browsers. Upon completion, students should be able to develop hand-coded web pages using current markup standards. (Offered spring semester)

WEB 120 Intro Internet Multimedia 2 2 0 0 3

This is the first of two courses covering the creation of internet multimedia. Topics include internet multimedia file types, file type conversion, acquisition of digital audio/video, streaming audio/video and graphics animation plug-in programs and other related topics. Upon completion, students should be able to create internet multimedia presentations utilizing a variety of methods and applications. A course fee is required. (Offered fall semester)

WEB 180 Active Server Pages 2 2 0 0 3
Prerequisites: CIS 115

This course introduces active server programming. Topics include HTML forms processing and other issues related to developing active web applications. Upon completion, students should be able to create and maintain a dynamic website. (Offered fall semester)

WEB 182 PHP Programming 2 2 0 0 3
Prerequisites: CIS 115

This course introduces students to the server-side, HTML-embedded scripting language PHP. Emphasis is placed on programming techniques required to create dynamic Web Pages using PHP scripting language features. Upon completion, students should be able to design, code, test, debug, and create a dynamic website using the PHP scripting language. (Offered spring semester)

WEB 187 Prog for Mobile Device 2 2 0 0 3**Prerequisites: CIS 115**

This course introduces content development for mobile electronic devices with a focus on business-related, social media, and entertainment applications. Emphasis is placed on developing web content and creating applications for mobile devices, including internet/business practices and techniques for delivery on mobile platforms. Upon completion, students should be able to develop web content and business or entertainment applications for use on mobile electronic devices.

WEB 210 Web Design 2 2 0 0 3

This course introduces intermediate to advanced web design techniques. Topics include customer expectations, advanced markup language, multimedia technologies, usability and accessibility practices, and techniques for the evaluation of web design. Upon completion, students should be able to employ advanced design techniques to create high impact and highly functional web sites. (Offered fall semester)

WEB 214 Social Media 2 2 0 0 3

This course introduces students to social media for organizations. Topics include social media, marketing strategy, brand presence, blogging, social media analytics and technical writing. Upon completion, students should be able to utilize popular social media platforms as part of a marketing strategy, and work with social media analytics tools. (Offered spring semester)

WEB 215 Advanced Markup and Scripting 2 2 0 0 3**Prerequisites: WEB-115**

This course covers advanced programming skills required to design Internet applications. Emphasis is placed on programming techniques required to support Internet applications. Upon completion, students should be able to design, code, debug, and document Internet-based programming solutions to various real-world problems using an appropriate programming language. (Offered fall semester)

WEB 220 Advanced Multimedia 2 2 0 0 3**Prerequisites: WEB 120**

This is the second of two courses covering Internet multimedia. Topics include use of advanced Internet multimedia applications. Upon completion, students should be able to create interactive Internet multimedia presentations.

WEB 250 Database Driven Websites 2 2 0 0 3**Prerequisites: DBA 110**

This course introduces dynamic (database-driven) website development. Topics include the use of basic database CRUD statements (create, read, update and delete) incorporated into web applications, as well as in software architecture principles. Upon completion, students should be able to design and develop database driven web applications according to industry standards. (Offered spring semester)

WEB 260 E-commerce Infrastructure 2 2 0 0 3**Prerequisites: WEB 250**

This course introduces the concepts and tools to implement electronic commerce via the Internet. Topics include application and server software selection, securing transactions, use and verification of credit cards, publishing of catalogs, documentation, and site administration. Upon completion, students should be able to setup a working e-commerce Internet website.

WEB 285 Emerging Web Technologies 2 2 0 0 3

This course will explore, discuss, and research emerging technologies in the Web arena. Emphasis is placed on exposure to up-and-coming technologies relating to the Web, providing hands-on experience, and discussion of practical implications of these emerging

fields. Upon completion, students should be able to articulate issues relating to these technologies.

WEB 287 Web E-Portfolio 1 2 0 0 2

This course covers the creation and organization of a web-based e-portfolio that includes a resume, references, and comprehensive academic and work samples. Emphasis is placed on creating an e-portfolio with solid design and demonstrable content, the production of a resume and self-promotional materials, and interview techniques. Upon completion, students should be able to present their own domain with included professional e-portfolio elements of resume, sample work, and related self-promotional materials. A course fee is required. (Offered spring semester)

WELDING**WLD 110 Cutting Processes 1 3 0 0 2**

This course introduces oxy-fuel and plasma-arc cutting systems. Topics include safety, proper equipment setup, and operation of oxy-fuel and plasma-arc cutting equipment with emphasis on straight line, curve and bevel cutting. Upon completion, students should be able to oxy-fuel and plasma-arc cut metals of varying thickness. A course fee is required.

WLD 112 Basic Welding Processes 1 3 0 0 2

This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes. A course fee is required.

WLD 115 SMAW (Stick) Plate 2 9 0 0 5

This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to perform SMAW fillet and groove welds on carbon plate with prescribed electrodes. A course fee is required.

WLD 116 SMAW (Stick) Plate/Pipe 1 9 0 0 4**Prerequisites: WLD 115**

This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions. A course fee is required.

WLD 117 Industrial SMAW 1 4 0 0 3

This course introduces the SMAW (stick) process for joining carbon steel components for industrial applications. Topics include padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, student should be able to safely perform SMAW fillet and groove welds on carbon steel plate with prescribed electrodes. A course fee is required.

WLD 121 GMAW (MIG) FCAW/Plate 2 6 0 0 4

This course introduces metal arc welding and flux core arc welding processes. Topics include equipment setup and fillet and groove welds with emphasis on application of GMAW and FCAW electrodes on carbon steel plate. Upon completion, students should be able to perform fillet welds on carbon steel with prescribed electrodes in the flat, horizontal, and overhead positions. A course fee is required.

WLD 131 GTAW (TIG) Plate 2 6 0 0 4

This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safety, equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials. A course fee is required.

WLD 132 GTAW (TIG) Plate/Pipe 1 6 0 0 3
Prerequisite: WLD 131

This course is designed to enhance skills with the gas tungsten arc (TIG) welding process. Topics include setup, joint preparation, and electrode selection with emphasis on manipulative skills in all welding positions on plate and pipe. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometry. A course fee is required.

WLD 141 Symbols and Specifications 2 2 0 0 3

This course introduces the basic symbols and specifications used in welding. Emphasis is placed on interpretation of lines, notes, welding symbols, and specifications. Upon completion, students should be able to read and interpret symbols and specifications commonly used in welding.

WLD 151 Fabrication I 2 6 0 0 4

This course introduces the basic principles of fabrication. Emphasis is placed on safety, measurement, layout techniques, cutting, joining techniques, and the use of fabrication tools and equipment. Upon completion, students should be able to perform layout activities and operate various fabrication and material handling equipment. A course fee is required.

WLD 212 Inert Gas Welding 1 3 0 0 2

This course introduces inert gas-shielded welding methods (MIG/TIG). Topics include correct selection of consumable and non-consumable electrodes, equipment setup, safety, and welding techniques. Upon completion, students should be able to perform inert gas welding in flat, horizontal, and overhead positions. A course fee is required.

WLD 214 Sanitary Welding 2 6 0 0 4

This course covers the requirements for gas tungsten arc welding (TIG) of austenitic stainless steel tube, pipe and plate. Topics include correct selection of tungsten, polarity, gas and proper filler rod with emphasis placed on safety, equipment set-up and welding techniques. Upon completion, students should be able to perform TIG welds with various electrodes and filler materials on austenitic stainless steel tube, pipe, and plate. A course fee is required.

WLD 215 SMAW (stick) Pipe 1 9 0 0 4
Prerequisite: WLD 115 or WLD 116

This course covers the knowledge and skills that apply to welding pipe. Topics include pipe positions, joint geometry, and preparation with emphasis placed on bead application, profile, and discontinuities. Upon completion, students should be able to perform SMAW welds to applicable codes on carbon steel pipe with prescribed electrodes in various positions. A course fee is required.

WLD 231 GTAW (TIG) Pipe 1 6 0 0 3
Prerequisite: WLD 132

This course covers gas tungsten arc welding on pipe. Topics include joint preparation and fit up with emphasis placed on safety, GTAW welding technique, bead application, and joint geometry. Upon completion, students should be able to perform GTAW welds to applicable codes on pipe with prescribed electrodes and filler materials in various pipe positions. A course fee is required.

WLD 251 Fabrication II 1 6 0 0 3
Prerequisite: WLD 151

This course covers advanced fabrication skills. Topics include advanced layout and assembly methods with emphasis on the safe and correct use of fabrication tools and equipment. Upon completion, students should be able to fabricate projects from working drawings. A course fee is required.

WLD 261 Certification Practices 1 3 0 0 2
Prerequisites: WLD 115, WLD 121 and WLD 131

This course covers certification requirements for industrial welding processes. Topics include techniques and certification requirements for pre-qualified joint geometry. Upon completion, students should be able to perform welds on carbon steel plate and/or pipe according to applicable codes. A course fee is required.

WLD 262 Inspection and Testing 2 2 0 0 3

This course introduces destructive and non-destructive testing methods. Emphasis is placed on safety, types and methods of testing, and the use of testing equipment and materials. Upon completion, students should be able to understand and/or perform a variety of destructive and non-destructive testing processes. A course fee is required.

WLD 265 Automated Welding/Cutting 2 6 0 0 4
Prerequisites: WLD 110, and WLD 121

This course introduces automated welding equipment and processes. Topics include setup, programming, and operation of automated welding and cutting equipment. Upon completion, students should be able to set up, program, and operate automated welding and cutting equipment. A course fee is required.

WLD 270 Orbital Welding TIG/Pipe 2 6 0 0 4

This course introduces automated tungsten inert gas (TIG) welding hardware, equipment, and processes required to apply specific, accurate, automated, and consistently repetitive pipe welds. Emphasis is placed on proper identification of automated welding process variables, how each relates to the functionality of orbital equipment and components, and how changes in variables directly influence weld quality. Upon completion, students should be able to produce quality pipe welds through the appropriate operation and control of automated TIG welding equipment. A course fee is required.

WORK-BASED LEARNING

WBL 111 Work-Based Learning I 0 0 0 10 1

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 112 Work-Based Learning I 0 0 0 20 2

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 113 Work-Based Learning I 0 0 0 30 3

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 114 Work-Based Learning I 0 0 0 40 4

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 115 Work-Based Learning Seminar I 1 0 0 0 1
Corequisites: WBL 111

This course must be taken in conjunction with WBL 111 in Community Spanish Interpreter and Interpreter Education. It provides the opportunity to discuss work-based learning experiences with peers and faculty. Emphasis is placed on planning, integrating, and evaluating work –based learning experiences.

WBL 121 Work-Based Learning II 0 0 0 10 1

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 122 Work-Based Learning II 0 0 0 20 2

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 123 Work-Based Learning II 0 0 0 30 3

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 124 Work-Based Learning II 0 0 0 40 4

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 131 Work-Based Learning III 0 0 0 10 1

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 132 Work-Based Learning III 0 0 0 20 2

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 211 Work-Based Learning IV 0 0 0 10 1

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

WBL 212 Work-Based Learning IV 0 0 0 20 2

This course provides work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.