

Course Descriptions--

ACC-111 Introduction to Accounting (3 s.h.)

Prerequisite: None. This course provides the student with a basic understanding of the accounting cycle and basic accounting rules along with the process of collecting and using financial information in a business. (45-0) *Equivalent to 15-109, ACCT-101.*

ACC-121 Principles of Accounting I (3 s.h.)

A financial accounting course: analyzing transactions, matching principle, adjusting and closing entries, financial statements, receivables, inventories, fixed assets and intangible assets, current liabilities, corporations (capital stock transactions, dividends, income and taxes, stockholder's equity, investment in stocks), bonds payable, investment in bonds. (45-0) *Equivalent to 15-150, ACCT-120.*

ACC-122 Principles of Accounting II (3 s.h.)

Prerequisite: ACC-121, Principles of Accounting I, or equivalent. A managerial accounting course that covers Statement of Cash Flows, financial statement analysis, job order and process cost systems, cost behavior, budgeting, standard costing, differential analysis and product pricing, capital investment analysis, activity-based costing, and just-in-time manufacturing. Emphasis is on management's use of accounting information. (45-0) *Equivalent to 15-151, ACCT-121.*

ACC-135 Personal Income Tax (3 s.h.)

Prerequisite: None. Personal Income Tax is a course that introduces the student to the fundamentals of federal income tax regulations. Students engage in an in-depth study of the preparation of the individual income tax return. Emphasis is placed on the preparation of federal returns for individuals. The course is designed to help the student develop a broad understanding of the tax laws as they relate to the individual. Course content includes the examination of regulations pertaining to general tax return preparation and filing federal income tax returns for the individual. Students will prepare a variety of tax forms and schedules, including the calculation of deductions and credits. Annual tax law changes are also examined. (45-0)

ACC-161 Payroll Accounting (3 s.h.)

Prerequisite: ACC-111, Introduction to Accounting or ACC-121, Principles of Accounting I with a grade of C or above. A study of basic business taxes. Emphasis on payroll taxes including social security taxes, income taxes, and unemployment taxes; completion of quarterly and annual reports and a payroll simulation project. (45-0) *Equivalent to 15-155, ACCT-105.*

ACC-311 Computer Accounting (3 s.h.)

Prerequisite: ACC-111, Introduction to Accounting or ACC-121, Principles of Accounting I with a grade of C or above. Designed to provide students with realistic experience with automated accounting consisting of five systems: general ledger, accounts payable, accounts receivable, depreciation, and payroll. Students will simulate taking an accounting position in a company already using a computerized accounting system. (45-0) *Equivalent to 15-160, ACCT-106.*

ADM-105 Introduction to Keyboarding (1 s.h.)

Prerequisite: None. This course covers the development of keyboarding techniques using the touch method on the computer keyboard to learn/review the alphabetic keys. The keyboarding goal

is a minimum rate of 20 words a minute with 3 or fewer errors on a two-minute timing. Students with little or no keyboarding skill would begin at this level. This course has been designated as a pass/no pass course. Also Open Entry. (0-30) *Equivalent to BUSN-102, 15-112.*

ADM-108 Keyboarding Skill Development (1 s.h.)

This course covers the development of keyboarding techniques using the touch method on the computer keyboard to learn/review the alphabetic, numeric, and symbol keys. The keyboarding goal is a minimum rate of 30 words a minute with 3 or fewer errors on a three-minute timing. This course has been designated as a pass/no pass course. Also Open Entry. (0-30) *Equivalent to 15-113, BUSN-103.*

ADM-123 Document Formatting (3 s.h.)

Prerequisite: Keyboarding skill of 30 wam (words a minute) with 3 or fewer errors on a 3-minute timed writing is recommended. This course covers the continued development of speed and accuracy on the alphabetic, numeric, and symbol keys. Students develop skills in formatting, producing, and proofreading the following documents: memos, letters, envelopes, tables, reports, and other miscellaneous business documents. (30-30) *Equivalent to 15-107, OFFC-701.*

ADM-131 Office Calculators (1 s.h.)

Study of the 10-key, electronic calculator following current trends in office technology. Course emphasizes use of the touch method, explains common calculator features, and practices mathematical skills necessary in business calculations. This course has been designated as a pass/no pass course. (5-20) *Equivalent to 15-110, OFFC-702.*

ADM-145 Advanced Desktop (3 s.h.)

Prerequisite: BCA-101, Introduction to Computers and Information Systems. Advanced topics in desktop computer applications will be studied in this course. Students will also examine integrated software packages such as Microsoft Office Professional in this class. They will utilize integrated software to solve several business problems presented to them allowing them to gain an understanding of integrated software, as well as other desktop applications, through hands-on experience. The course will be project-based, providing the student with a collaborative environment. (30-30) *Equivalent to 15-176, COMP-206.*

ADM-162 Office Procedures (3 s.h.)

Prerequisite: BCA-129, Basic Word Processing; and BUS-121, Business Communications. Office procedures and techniques necessary to perform general office duties. Includes using a word processor, developing transcription skills, using the Internet to access information, filing, handling telephone services, discussing professionalism, applying grammar rules, and taking care of general office administration. Students are expected to spend time outside of class working in the computer lab. (45-0) *Equivalent to 15-218, OFFC-830.*

ADM-185 Legal Terminology and Transcription (2 s.h.)

Prerequisite: BCA-129, Basic Word Processing; and BUS-121, Business Communications. This course is designed to help students learn the activities performed by a legal office professional in a law firm or other legal setting where documents are converted from the spoken word to printed form. This course prepares students to

transcribe the most common legal documents as well as emphasizes legal terminology. Upon completion of this course, students will have a greater knowledge of the terminology, guidelines, and formatting skills needed to prepare authentic, accurate legal documents. (30-0)

ADM-215 Medical Office Procedures (3 s.h.)

Prerequisite: BCA-129, Basic Word Processing, and BUS-121, Business Communications. Management of a medical office that includes preparing correspondence and patient records, using the Internet to access information, filing, handling telephone services, making and keeping appointments, developing transcription skills, composing letters, discussing professionalism, applying grammar rules, and taking care of general office duties. Also includes medical ethics and etiquette, medical law, and use of a computer for word processing. Students are expected to spend time outside of class working in the computer lab. (45-0) *Equivalent to 15-259, OFFC-850.*

ADN-101 Introduction to Nursing (1 s.h.)

Prerequisite: Acceptance into the ADN Program is a requirement for entrance into this class. An introduction to the philosophy and conceptual framework of the NIACC Associate Degree Nursing Program. The course includes basic concepts related to legal and ethical aspects of nursing, nursing roles, and current trends in health care. The student is introduced to wellness-illness theory, the therapeutic nurse-patient relationship and effective communication techniques. An introduction to caring concepts is also included. This course has been designated as a pass/no pass course. (15-0) *Equivalent to 90-106, ADNS-701.*

ADN-102 Nursing I (7 s.h.)

Prerequisite: ADN-101, Introduction to Nursing. Corequisites: BIO-186, Microbiology, and ENG-102, Composition and Speech I, or ENG-105, Composition I. Nursing I utilizes the nursing process with emphasis on assessment and nursing diagnosis in meeting client needs resulting from impairments relating to safety and comfort throughout the life span. Pharmacological concepts, diet modification, psychosocial concepts, and health maintenance are integral considerations in the progressive development of the student's knowledge and skills. Clinical experiences include opportunities to apply nursing roles and the nursing process in long-term care, medical-surgical, and community settings. (60-105) *Equivalent to 90-108, ADNS-702.*

ADN-103 Nursing II (10 s.h.)

Prerequisite: BIO-206, Anatomy and Physiology I with Lab; ADN-102, Nursing I; PSY-121, Developmental Psychology; and PSY-111, Introduction to Psychology; ENG-105, Composition I; BIO-186, Microbiology; ADN-101, Introduction to Nursing. Nursing II utilizes the nursing process with emphasis on planning in meeting client needs resulting from impairments relating to self-esteem and mobility throughout the life span. Pharmacological concepts, diet modification, psychosocial concepts, and health maintenance are integral considerations in the progressive development of the student's knowledge and skills. Clinical experiences include opportunities to apply nursing roles and the nursing process in maternal-newborn, pediatrics, skilled/rehabilitation, medical-surgical, and community settings. (105-135) *Equivalent to 90-111, ADNS-703.*

ADN-104 Nursing IIA (1 s.h.)

Prerequisite: Graduate of approved Practical Nursing Program with a cumulative 2.5 GPA in previous nursing courses; hold current, unencumbered practical nurse license, plus successful completion of all freshman nonnursing courses. Provides introduction to program, differentiates roles of LPN and RN, reviews nursing process, presents specific communication techniques, and reviews content in laboratory setting. Students must obtain a passing grade in this course to continue into Nursing III, ADN-603. If a passing grade is not attained, the student will be required to register for Nursing II, ADN-103. This course has been designated as a pass/no pass course. (14-2) *Equivalent to 90-113, ADNS-704.*

ADN-603 Nursing III (12 s.h.)

Prerequisite: ADN-103, Nursing II; or ADN-104, Nursing IIA, or consent of Associate Degree Nursing faculty, plus all freshman year nonnursing courses. Nursing III utilizes the nursing process with emphasis on implementation in meeting client needs resulting from impairments relating to interpersonal interaction, oxygenation, and nutrition throughout the life span. Pharmacological concepts, diet modification, psychosocial concepts, and health maintenance are integral considerations in the progressive development of the student's knowledge and skills. Clinical experiences will include opportunities to apply nursing roles and the nursing process in a variety of care settings. (105-225) *Equivalent to 90-210, ADNS-801.*

ADN-604 Nursing IV (12 s.h.)

Prerequisite: ADN-603, Nursing III, or consent of Associate Degree Nursing faculty, plus SOC-110, Introduction to Sociology. Nursing IV utilizes the nursing process with emphasis on evaluation in meeting client needs resulting from impairments relating to nutrition, elimination, and sensory stimulation throughout the life span. Pharmacological concepts, diet modification, psychosocial concepts, and health maintenance are integral considerations in the progressive development of the student's knowledge and skills to meet the diverse needs of the client. Concepts of management, legal, and ethical aspects of the nursing profession and issues related to current trends are presented. Clinical experiences will focus on clients with complex needs. The management experience is the culmination of the student's academic and clinical education in which the student will have an opportunity to care for a group of clients and apply basic skills in leadership and conflict management. Clinical experiences will include opportunities to apply nursing roles and the nursing process in a variety of care settings. (105-225) *Equivalent to 90-211, ADNS-802.*

AGA-114 Principles of Agronomy (3 s.h.)

Topics covered include: plant anatomy and physiology; plant classification and ID; pest classification and ID; and pesticides, pest management, application equipment, calibration, laws/regulations. Students will take the Iowa Core Manual examination as a requirement for this course. (38-15) *Equivalent to 90-160, AGAS-701.*

AGA-154 Fundamentals of Soil Science (3 s.h.)

Introduction to the physical, chemical, and biological properties of soils with an emphasis on the functions of the soil as a medium to support plant life. A review of the sources and functions of major and minor plant elements, fertilizers and their properties, soil acidity, liming materials, and soil conservation. (38-15) *Equivalent to 90-186, AGAS-703.*

- AGA-852 Principles of Crop Production** (3 s.h.)
Production and management practices for corn, soybeans, small grains, and legume crops common to North Iowa agriculture. (38-15) *Equivalent to 90-161, AGAS-702.*
- AGA-854 Crop Production Lab** (1 s.h.)
Problem-solving approach to crop management. Principles and practices of agricultural science are used in the discussion of management problems and operations related to crop production at the NIACC Teaching Farm Lab. Students will participate in the management and operations of the NIACC Teaching Farm Lab. (0-30) *Equivalent to AGAS-805, 92-168.*
- AGA-855 Site-Specific Crop Management** (2 s.h.)
Prerequisite: AGA-154, Fundamentals of Soil Science, or its equivalent. Course covers advanced soil management. (30-0) *Equivalent to 92-261, AGPS-702.*
- AGA-860 Soils and Crop Management** (2 s.h.)
Prerequisite: AGA-154, Fundamentals of Soil Science, or its equivalent. Advanced plant nutrition, soil fertility, and nutrient management. (30-0) *Equivalent to 90-282, AGAS-801.*
- AGB-101 Agricultural Economics** (3 s.h.)
This course is designed for students seeking an Associate in Applied Science Degree in Agriculture. Students will study the role of agriculture in the American economy. Basic economic concepts, the composition and pricing of agricultural products, government and monetary policy will be discussed. A study of this country's agricultural economic policies with a look at how other countries' agricultural economic policies affect us. The economic decision-making process will be taught built upon the micro and macro management functions. (45-0) *Equivalent to 90-183, AGBS-710.*
- AGB-205 Introduction to Farm Operation** (2 s.h.)
Introduction to Farm Operation is a unique study experience with hands-on-activities in the learning lab at NIACC. Students enrolled in this two-credit course participate in the management and operation of the NIACC Teaching Farm Lab. The primary objective of this course is to provide experience in the planning, purchasing, production, construction, maintenance, marketing, and investment decisions associated with a diversified Iowa farm operation. (8-45) *Equivalent to 90-264, AGCS-701.*
- AGB-213 Ag Real Estate Evaluation** (2 s.h.)
Farm appraisal is the systematic process of classifying and evaluating the characteristics of a farm in order to make a well-reasoned judgment of its value. This course provides students the opportunity to develop an understanding of real estate value and the application of the appraisal process to estimating the market value of agricultural and rural real estate. (30-0) *Equivalent to 92-189, AGBS-812.*
- AGB-338 Salesmanship and Advertising** (2 s.h.)
This course is designed for students seeking an Associate in Applied Science Degree in Agriculture. Sales presentations and advertising setups of agricultural goods and services will serve as a basis of discussion in this course. Students will study techniques of selling and advertising of agricultural goods and services, and have a firsthand chance to sell products to student/consumers during the course of the semester. (30-0) *Equivalent to 90-189, AGBS-815.*
- AGB-436 Grain Merchandising** (2 s.h.)
Elements of producer marketing of major Midwest crops with emphasis on formulating marketing goals and plans. Marketing tools, futures and option markets, speculation, hedging, and risk management. (30-0) *Equivalent to 90-185, AGBS-801.*
- AGB-438 Ag Futures and Futures Options** (2 s.h.)
Prerequisite: AGB-436, Grain Merchandising. Advanced commodity marketing concepts, principles, and terminology. (30-0) *Equivalent to 92-263, AGPS-820.*
- AGB-465 Ag Finance Management** (2 s.h.)
Prerequisite: ACC-111, Introduction to Accounting. Principles of farm management. Emphasis is given to decision making, implementation, and control in farm operations using economic principles, farm records, enterprise analysis, financial reports, and investment analysis procedures. (30-0) *Equivalent to AGBS-810, 90-285.*
- AGE-116 Horse Essentials/Equine Management** (2 s.h.)
General concepts of breed type and identification; the selection process; nutrition requirements; the reproduction cycle; the importance of genetics; general health; and management requirements will build a strong background for those interested in owning a horse of their own or pursuing a career in equine management. (30-0) *Equivalent to 92-264, AGES-701.*
- AGM-120 Basic Agricultural Mechanics** (2 s.h.)
Maintenance and management of agricultural machinery and power units. (23-45) *Equivalent to 92-273, AGMS-701.*
- AGP-331 Precision Agriculture** (2 s.h.)
Prerequisite: AGA-114, Principles of Agronomy, AGA-852, Principles of Crop Production, and demonstrated computer proficiency or permission from instructor. Precision agriculture is a management strategy that uses information technologies to bring data from multiple sources to bear on decisions associated with crop production. It should be viewed as a developing management system and not simply as an application of technology. GPS is considered the enabling tool for the entire Precision Agriculture system. GPS is vital for yield monitoring, soil sampling, measuring field boundaries, and variable-rate application of crop nutrients and crop protection products. Students will be introduced to this and to other important technologies, with hands-on experience being provided using GPS receivers, scouting, navigation tools, and mapping software. (15-30) *Equivalent to AGPS-701, 90-267, AGP-333.*
- AGS-109 Animal Science I** (3 s.h.)
This course is designed to provide students with a general overview of the livestock industry. It identifies the ways in which domestic animals serve the basic needs of humans for food, fiber, shelter, protection, fuel and emotional well-being. Students will develop an understanding of and be able to apply the basic principles of animal selection, breeding, genetics, feeding, health, and husbandry practices. As a student, you will become familiar with the economic and social issues that confront the livestock industry. (45-0) *Equivalent to 70-112, AGSS-701.*
- AGS-110 Animal Science I Lab** (1 s.h.)
This course incorporates laboratory experiences designed to help students develop livestock husbandry skills, livestock facilities con-

struction and maintenance skills, related livestock technology use skills, and group problem solving skills. This course is designed to be a companion for AGS-109, Animal Science I, and will provide students with hands-on experiences in each of the Animal Science units of study. Students will be able to apply the basic principles of animal selection, breeding, feeding, health, and husbandry practices. Students will coordinate specific animal improvement and marketing activities associated with the livestock species at NIACC. (0-30) *Equivalent to AGSS-701L.*

AGS-209 Animal Science II (3 s.h.)

This course applies advanced principles of livestock production and management. Areas of emphasis include: a review of animal husbandry practices, which result in greater performance and profit; livestock facilities requirements; production trends, animal health, and nutritional requirements for livestock produced in the Midwest; emphasis on swine and beef cattle production. (45-0) *Equivalent to 70-212, AGSS-702.*

AGS-210 Animal Science II Lab (1 s.h.)

This course incorporates laboratory experiences designed to help students develop livestock husbandry skills, livestock facilities construction and maintenance skills, related livestock technology use skills, and group problem solving skills. This course is designed to be a companion for AGS-209, Animal Science II, and will provide students with hands-on experiences in each of the Animal Science units of study. Students will be able to apply the basic principles of animal selection, breeding, feeding, health, and husbandry practices. Students will coordinate specific animal improvement and marketing activities associated with the livestock species at NIACC. (0-30) *Equivalent to AGSS-702L.*

AGS-227 Beef Cattle Production (2 s.h.)

This course is designed to help students identify the primary biological principles that contribute to raising productive beef cattle, to integrate biological and economic principles that comprise effective management decisions needed to produce profitable cattle, and to enhance the understanding and communication between all segments of the beef industry. The course material identifies the primary management principles and practices needed by commercial and seed stock producers to raise productive and profitable cattle that can meet the specifications needed by the beef industry. (30-0) *Equivalent to AGSS-810, 90-293.*

AGS-309A-B Livestock Production Lab I (1-2 s.h.)

Students will develop livestock husbandry skills associated with profitable beef and swine production. This hands-on experience emphasizes production practices that increase reproductive efficiency, insure herd health, increase pounds of market production, provide proper nutrition, and assure high market value. Students will assist in the selection, breeding, parturition, processing, feeding, fitting, and marketing of hogs and cattle. Students will evaluate, modify, and manage livestock facilities for maximum production efficiency. (0-30 to 60) *Equivalent to 92-270, AGSS-805A-B.*

AGS-310A-B Livestock Production Lab II (1-2 s.h.)

Students will develop livestock husbandry skills associated with profitable beef and swine production. This hands-on experience emphasizes production practices that increase reproductive efficiency, insure herd health, increase pounds of market production, provide proper nutrition, and assure high market value. Students

will assist in the selection, breeding, parturition, processing, feeding, fitting, and marketing of hogs and cattle. Students will evaluate, modify, and manage livestock facilities for maximum production efficiency. (0-30 to 60) *Equivalent to 92-271, AGSS-806A-B.*

AGS-317 Animal Nutrition (2 s.h.)

Fundamentals of nutrition that deal with monogastric and ruminant animals. Materials covered will enable students to identify sources, composition and functions of various feedstuffs. Students will learn to evaluate and formulate livestock rations and will be able to make feeding recommendations based upon varying livestock, environment and management conditions. (30-0) *Equivalent to 90-171, AGSS-710.*

AGS-506 Swine Production (2 s.h.)

This course applies advanced principles of swine production and management. Areas of emphasis include: a review of swine husbandry practices, which result in greater performance and profit; livestock facilities requirements and maintenance, animal health, reproduction, and nutritional requirements. Students will have the opportunity to apply skills learned in the classroom to the swine operation at the NIACC Farm Lab. (30-0) *Equivalent to 90-169, AGSS-720.*

AGS-811 Animal Technologies (1 s.h.)

This course is designed for students seeking an Associate of Science Degree in Agriculture. Students will be involved with techniques and technologies that enable better management decision-making and improved economic efficiency of agricultural operations. Included in the course are Animal Reproductive Technologies, Embryo Transfer, Estrus & Ovulation Synchronization, Electronic Heat Detection, Quality Assurance Evaluation, and Food Safety. (10-15) *Equivalent to AGSS-816.*

ANT-105 Cultural Anthropology (3 s.h.)

This course embraces cultures from all continents; highlights major human subsistence patterns; and illustrates human adaptation to the environment, from the beginning of human history to the present. Individual studies enable students to experience cultures in-depth. The student's goal is to understand one's own culture from a historical perspective and to analyze the forces of today in terms of how those forces may affect the future of earth and mankind. (26-38) *Equivalent to SOCS-115, 80-160.*

ART-101 Art Appreciation (3 s.h.)

An introductory course designed to give a better understanding of art as an important force in present-day living. Aims to develop an appreciation of art and creative thinking through lectures, readings, and visual aids. Experimentation with a variety of tools, techniques, and materials is a meaningful part of the course. Recommended for nonart majors. Entry-level course. (45-0) *Equivalent to 10-101, ARTS-101.*

ART-102 Art for Elementary Education (3 s.h.)

This course is designed for elementary education majors or those who are planning to work with children pre-K to grade 6. Focuses on instructional planning for art studio and response activities with emphasis on interdisciplinary and multicultural approaches. Components are artistic development of children, peer teaching, field observation, and foundations of art education. (45-0) *Equivalent to 10-112, ARTS-103.*

- ART-115 Graphic Design** (3 s.h.)
Prerequisite: ART-120, Two-Dimensional Design, or permission of instructor. Creative problem solving through the exploration of aesthetic and technical aspects of graphic design using computer-aided design software. (20-50) *Equivalent to 10-202, ARTS-202.*
- ART-116 Graphic Design II** (3 s.h.)
Prerequisite: ART-115, Graphic Design. As a continuation of ART-115, Graphic Design, this course will emphasize the conceptual skills necessary to effectively integrate the principles of visual perception to design projects. Emphasis will be given to the role of color as it relates to visual communication. The theoretical, psychological and cultural aspects of color will be studied in the context of their application to appropriate graphic design decisions. Design software such as but not limited to Adobe InDesign, Photoshop, Illustrator and QuarkXpress will be utilized. (45-0)
- ART-120 Two-Dimensional Design** (3 s.h.)
Students/artists explore the process of visual problem solving through participation in class critiques of individual projects. Perception and structure: exploring visual order emphasizing two-dimensional concepts. (20-50) *Equivalent to 10-201, ARTS-201.*
- ART-123 Three-Dimensional Design** (3 s.h.)
Beginning experiences in conceiving and making in three dimensions; emphasis on interaction between work and idea, skills in art making, and common vocabulary of art. An exploration of aesthetic and practical considerations of working three-dimensionally. (45-0)
- ART-131 Digital Publication Design** (3 s.h.)
Prerequisite: ART-115, Graphic Design, and GRA-173, Typography, or permission of instructor. Utilizing the skills gained in previous courses, Digital Publication Design will explore how to use conceptual design skills to systematically integrate photographs, type and illustration using page composition software, such as Adobe InDesign. The student will achieve an understanding of printing processes, pre-press, and post-press production, as well as paper specification. (45-0)
- ART-133 Drawing** (3 s.h.)
The development of visual perception in objective and subjective representation. Study of line, form, texture, and value in a variety of media stressing an individual's creative development. Entry-level course. (20-50) *Equivalent to 10-120, ARTS-120.*
- ART-134 Drawing II** (3 s.h.)
Prerequisite: ART-133, Drawing I. A continuation of Drawing I, with a greater emphasis on self-expression. (45-0)
- ART-143 Painting I** (3 s.h.)
Prerequisite: ART-120, Two-Dimensional Design; ART-133, Drawing; or ART-101, Art Appreciation. Beginning course planned to familiarize the student with the basic materials and tools of painting, the elements of pictorial organization, and the individual's creative development. Each student is encouraged to cultivate his or her own visual vocabulary. (45-0) *Equivalent to 10-210, ARTS-210.*
- ART-144 Painting II** (3 s.h.)
Prerequisite: ART-143, Painting I. Continuation of ART-143. Independent research, reading, and personal exploration of media and techniques. (45-0) *Equivalent to 10-211, ARTS-211.*
- ART-173 Ceramics** (3 s.h.)
An introductory course involving hand-building, wheel-throwing, glazing, and firing. Slides, lectures, and demonstrations. Ceramics facilities are located in the MacNider Museum, Mason City. (20-50) *Equivalent to 10-130, ARTS-130.*
- ART-187 Creative Photography** (3 s.h.)
An investigation into the relationship of basic photographic techniques to design, perception, and aesthetics. Each student is encouraged to cultivate his or her own visual vocabulary while working on photographic projects. (20-50) *Equivalent to 10-150, ARTS-150.*
- ART-188 Creative Photography II** (3 s.h.)
Prerequisite: ART-187, Creative Photography. Emphasis on exploring photographic materials in the development of a personal vision. Technical subject covered: lighting, advanced printing, and camera techniques. Only offered spring semesters. (20-50) *Equivalent to 10-151, ARTS-151.*
- ART-203 Art History I** (3 s.h.)
Prerequisite: None. This course is *not* required as a prerequisite for ART-204, Art History II. The study of the development of the visual arts of western civilization including painting, sculpture, architecture, and crafts from prehistoric origins through Gothic. (45-0) *Equivalent to 10-102, ARTS-104.*
- ART-204 Art History II** (3 s.h.)
The study of the development of the visual arts of western civilization including painting, sculpture, architecture, crafts, and photography from the Renaissance through the present time. (45-0) *Equivalent to 10-103, ARTS-105.*
- AUT-104 Introduction to Automotive Technology** (3 s.h.)
Corequisite: AUT-115, Automotive Shop Safety. Instruction in service procedures, information and equipment. Classroom and laboratory activities emphasize routine vehicle maintenance in the care of fluids, tires, batteries, lighting, belts, hoses, filters, and cooling systems. (30-60) *Equivalent to AUTO-701, 98-144.*
- AUT-115 Automotive Shop Safety** (1 s.h.)
This course is designed to acquaint the student with the proper personal and shop safety procedures needed to function in an automotive shop. Tool identification, tool care, and maintenance will be covered along with careers and career options in the automotive industry. Policies, procedures and orientation will also be included in this course. (15-5)
- AUT-164 Automotive Engine Repair** (4 s.h.)
Prerequisite: AUT-104, Introduction to Automotive Technology. Instruction/laboratory procedures for engine repair diagnosis, removal, disassembly, inspection, overhaul and reassembly of automotive and/or light truck engines according to manufacturer's specifications. (15-90)

AUT-204 Automotive Automatic Transmissions and Transaxles (4 s.h.)

Prerequisite: ELT-115, Electronic Concepts, or instructor's permission. Instruction in diagnosis, maintenance, and overhaul of major automatic transmissions and transaxles in various makes of automobiles. (15-90)

AUT-303 Automotive Manual Drive Trains and Axles (3 s.h.)

Corequisite: AUT-104, Introduction to Automotive Technology. Instruction/laboratory procedures for servicing, diagnosing, and repairing/replacing standard transmissions and clutches, transaxles, and differentials. (15-90) *Equivalent to AUTO-712, 98-149.*

AUT-404 Automotive Suspension & Steering (4 s.h.)

Prerequisites: AUT-104, Introduction to Automotive Technology, and AUT-115, Automotive Shop Safety. Instruction/laboratory service procedures for inspection, adjustments, alignment, repair and/or replacement of suspension and steering components. (15-90)

AUT-504 Automotive Brake Systems (4 s.h.)

Prerequisites: AUT-104, Introduction to Automotive Technology, and AUT-115, Automotive Shop Safety. Instruction in the theory and operating principles of drum, disc, hydraulic and anti-lock brake systems (ABS). Laboratory procedures for inspecting, testing, diagnosing, repairing and/or replacing conventional, power, and ABS brake system components. (15-90)

AUT-612 Automotive Electrical Systems I (3 s.h.)

Corequisite: AUT-104, Introduction to Automotive Technology. Instruction in the electrical and electronic principles and testing procedures as applied to automotive circuits and microprocessors. Laboratory procedures to include the utilization of wiring schematics and test equipment for diagnosing and repairing instrumentation, electrical accessory, and lighting systems. (30-60) *Equivalent to 98-147, AUTO-710.*

AUT-657 Automotive Electrical Systems II (5 s.h.)

Prerequisite: AUT-612, Automotive Electrical Systems I. Strong mechanical aptitude. Instruction in operation, service, and troubleshooting of automotive electronic/electrical circuits and systems; to include starting, charging, and ignition systems. (45-60) *Equivalent to AUTO-810, 98-209.*

AUT-703 Automotive Heating/Air Conditioning (3 s.h.)

Prerequisite: ELT-115, Electronic Concepts. Instruction in theory and operation of automotive heating and air-conditioning systems including heat transfer and pressures. Laboratory procedures for servicing and maintaining heating and air conditioning systems and controls utilizing approved refrigerant recovery/recycling equipment and methods. (30-60) *Equivalent to AUTO-715, 98-133.*

AUT-832 Automotive Fuel Delivery Systems (3 s.h.)

Prerequisite: ELT-115, Electronic Concepts. Strong mechanical aptitude. Instruction in the fundamentals of operation and service of complete fuel systems, including storage, delivery, and metering. (30-30) *Equivalent to AUTO-802, 98-208.*

AUT-840 Automotive Computerized Controls (3 s.h.)

Prerequisite: ELT-115, Electronic Concepts. Instruction in electronics theory as it applies to automotive computers, sensors, and con-

rol devices, with emphasis on developing an organized approach to diagnostics. (30-30) *Equivalent to AUTO-720, 98-180.*

AUT-858 Advanced Automotive Engine Performance (4 s.h.)

Prerequisite: AUT-840, Automotive Computerized Controls, or instructor's permission. Strong mechanical aptitude. Instruction in the theory and operating principles of automotive computerized engine control systems and other advanced electronic systems with emphasis on utilizing relevant vehicle data and service information, lab and oscilloscopes, DVOMs, and scan tools to test/diagnose/repair system malfunctions. (15-90)

AUT-865 Automotive Engine Performance Testing (5 s.h.)

Prerequisite: AUT-840, Automotive Computerized Controls. Strong mechanical aptitude. Instruction in the theory and operating principles of automotive emission systems with emphasis on utilizing relevant vehicle data and service information, lab and oscilloscopes, DVOMs, and scan tools to test/diagnose/repair system malfunctions. (45-90) *Equivalent to AUTO-820, 98-211.*

BCA-100 Computer Literacy (1 s.h.)

Prerequisite: None. This course is intended to familiarize the student with Windows-based personal computers including introductory file control and management using Windows, exposure to different software, and basics on how to use e-mail and the Internet. Students with little or no computer background are encouraged to take this course. This course has been designated as a pass/no pass course. (0-30) *Equivalent to 15-114, COMP-100.*

BCA-101 Introduction to Computers and Information Systems (3 s.h.)

Emphasis on computer literacy and business applications of computer software. Students do business problems using electronic spreadsheets, word processing software, database management software, and presentation software. Students also are exposed to web use, file management, and simple web page development. (45-0) *Equivalent to 15-140, COMP-110.*

BCA-103 Management Information Systems (3 s.h.)

The primary goal of MIS is to prepare students to be productive participants in an information society. The course is designed to develop a broad understanding of business information systems, various ways to discern information from an information system, and look at ways to distribute this information. The student will also learn the basic principles and techniques for developing simple computer-based information systems for managerial decision support systems through an extensive group project component of the course. (45-0) *Equivalent to 15-141, COMP-111.*

BCA-118 Introduction to the PC (1 s.h.)

This course provides an introduction to the desktop PC, its parts and basic operation. The student learns how to operate the computer, work within the windows environment, and manipulate files. Course exercises will include using the MS Office Suite, including Word, Excel, Access, and Outlook to process documents, lay out spreadsheets, compile databases, and send e-mail. Students also learn to explore the Internet to research information. (10-20) *Equivalent to COMP-701, 91-159.*

BCA-119 Computer Orientation (1 s.h.)
Introduction to basic computer hardware and software functions. Emphasis on using the computer as a tool to create personal and business documents. Introductory Windows, word processing, spreadsheet, presentation, and Internet units give students an opportunity to view software capabilities and use some of the features. (15-15) *Equivalent to 96-162, COMP-702.*

BCA-129 Basic Word Processing (2 s.h.)
This course is designed to introduce students to computers and the fundamentals of word processing. The students will progress from basic through intermediate features of word processing software. Also Open Entry. (20-20) *Equivalent to 15-211, COMP-105.*

BCA-136 Advanced Word Processing (3 s.h.)
Prerequisites: BCA-215, Computer Business Applications, and BCA-129, Basic Word Processing. Students will learn intermediate to advanced functions of Microsoft Word including customizing templates, recording macros, creating on-screen forms, managing long documents, creating hyperlinks, and publishing on the World Wide Web. Upon completion of the course, the students will be prepared to take the Expert level Microsoft Office Specialist (MOUS) certification exam. (30-30) *Equivalent to 15-136, COMP-207.*

BCA-152 Comprehensive Spreadsheets (3 s.h.)
Prerequisite: BCA-101, Introduction to Computers and Information Systems, or BCA-215, Computer Business Applications. Learn the fundamentals of spreadsheets, databases, and business graphics using appropriate software. (30-30) *Equivalent to 15-175, COMP-115.*

BCA-163 Microsoft Access (1 s.h.)
This course is designed to take students through the core competencies for Microsoft Access in preparation for the Microsoft Office Specialist (MOUS) certification test. (5-20) *Equivalent to 15-225, COMP-113.*

BCA-170 Personal Information Management (2 s.h.)
The course is designed to take students through the core competencies for Microsoft Outlook in preparation for the Microsoft Office User Specialist (MOUS) certification test. (15-30) *Equivalent to 15-227, COMP-112.*

BCA-174 Basic Presentation Software (1 s.h.)
This course is designed to take students through the core competencies for Microsoft PowerPoint in preparation for the Microsoft Office Specialist (MOUS) certification test. (5-20) *Equivalent to 15-226, COMP-114.*

BCA-182 Introduction to Microsoft Publisher (1 s.h.)
Introduction to Microsoft Publisher 2002 demonstrates layout and design techniques to create brochures, newsletters, and publish a web site to the Internet. This course has been designated as a pass/no pass course. (5-20) *Equivalent to 15-244, BUSN-252.*

BCA-184 Comprehensive Web Page Design Software (3 s.h.)
Prerequisite: CIS-224, Server Side Scripting, or permission of the instructor. This course will build on the students' prior Internet Programming knowledge and give them an overview of various web application development resources, tools, languages, and technologies. Students will be introduced to various current tools and

technologies available to a Web Developer for development and begin to understand the situations each works best in. Emphasis will be on compare and contrast techniques, proper planning, relating the syntax and elements to other tools and languages, knowledge transfer, how interaction takes place, design, and developing an understanding and use of programming resources. (45-0) *Equivalent to 15-199, ECOM-225.*

BCA-185 Beginning Web Page Development (3 s.h.)
This class covers the basics of building a web page. Students will learn basic coding with HTML and explore web development products such as Nvu to build a web page. Students will also learn how to post a web page on web server to be seen on the Internet, add graphics, change fonts, add colors, develop navigation, and design tables. (45-0) *Equivalent to 15-137, ECOM-100.*

BCA-215 Computer Business Applications (3 s.h.)
Emphasis on business applications of computer software. Students do business problems using word processing, electronic spreadsheet, and database management software. Students are also exposed to Windows operating systems, presentation software, and the Internet. (45-0) *Equivalent to 15-134, COMP-101.*

BCA-259 Project Management Software (2 s.h.)
Project Management Software provides students with detailed instruction on how to generate, build, revise, update, and report project time, cost, and resource schedule information using Microsoft Office Project. The hands-on approach of this course walks students through MS Project features and functions in a lab tutorial format. In addition to the step-by-step approach to MS Project, students learn how to calculate a Critical Path Method (CPM) schedule enabling knowledgeable application of any project management software application. Although some prior knowledge of the project management context is helpful, it is not required to gain ability to create a valuable schedule and learn the technical aspects of MS Project. (15-30)

BCA-270 Learn to Buy and Sell on eBay (1 s.h.)
Learn to Buy and Sell on eBay demonstrates skills of entitling, creating advertisements, uploading photographs, conduct financial transactions and protect against fraud. This course has been designated as a pass/no pass course. (5-20) *Equivalent to 15-245, BUSN-253.*

BCA-280 Introduction to QuickBooks (1 s.h.)
Introduction to QuickBooks provides a traditional approach to small business accounting by creating a chart of accounts, reconciling checking accounts, creating invoices, receipts, statements, a payable registry, inventory, a receivables registry, and generating reports. This course has been designated as a pass/no pass course. (5-20) *Equivalent to BUSN-254, 15-246.*

BCA-601 Create a Website (1 s.h.)
Create a Website will demonstrate how to create, build, design, and implement a functional website for business, personal, and nonprofits. This course has been designated as a pass/no pass course. (8-14)

BCA-602 Microsoft Excel (1 s.h.)
Microsoft Excel demonstrates building a spreadsheet using mathematical formulas, functions, wizards, graphs, charts, and databases. This course has been designated as a pass/no pass course. (8-14)

BCA-603 Microsoft Access for the Workplace (1 s.h.)
Using Microsoft's powerful database, Access, business people can create, store, and locate any amount of information. Learn to create tables, forms, queries, reports, and relationships. This course has been designated as a pass/no pass course. (8-14)

BCA-729 Search Engine Optimization (1 s.h.)
Prerequisite: CIS-210, Web Development I. There is nothing more useless than having the link to your web site show up on page 417 of the Google search results. Learn the tricks to getting your page on the first couple pages instead of out of the reach of all of your users. (15-0)

BCA-775 JavaScript Programming for the Web (1 s.h.)
Prerequisite: CIS-210, Web Development I. Creating web pages in HTML is only the beginning. By adding JavaScript to the page, the interface comes alive, interacting with the viewer, modifying page content, and making the Internet a more enjoyable experience. Learn the basics of this powerful language and bring your site to the next level. (15-0)

BCA-778 AJAX Basics (1 s.h.)
Prerequisite: CIS-210, Web Development I, and BCA-775, JavaScript Programming for the Web. Users love to have interactive, responsive web experiences. HTML, CSS, and JavaScript go a long way toward making sites truly dynamic, but AJAX puts them over the top. Learn this exciting way to ensure a totally interactive experience for the web user. (15-0)

BIO-102 Introductory Biology (3 s.h.)
Study of organismic biology including organization, metabolism, and reproduction of living systems. Includes evolutionary patterns, inheritance, ecosystems, and structure-function relationships among organisms. (45-0) *Equivalent to BIOL-101, 70-101.*

BIO-103 Introductory Biology Lab (1 s.h.)
Corequisite: Credit for or current enrollment in BIO-102, Introductory Biology. This is a lab component intended to supplement Introductory Biology. (0-30) *Equivalent to BIOL-102, 70-102.*

BIO-123 Inquiry Into Life Science (4 s.h.)
Prerequisite: EDU-216, Introduction to Teaching. This course is specifically designed for education majors. Topics include ecosystems, plants, gene, homeostasis, microbes and metabolism. These topics are presented while modeling effective pedagogy when it comes to teaching science. The course is modeled on the *Teaching Standards and Content Standards of the National Science Education Standards*. (45-30) *Equivalent to 70-190, BIOL-103.*

BIO-151 Nutrition (3 s.h.)
Prerequisite: three credit hours of high school inorganic chemistry. Physiology or biology helpful, but not essential. Basic math skills will be employed. Introduces the science of human nutrition and its application to the role of the nurse, other allied health professional

or educator in promoting good nutrition throughout the life span. Emphasis is placed on the study of macro and micro nutrient needs; and the use of science-based evidence for evaluation of findings and adoption of applications promoting sound nutritional practices among patients, clients and the community at large. Some principles of diet modification are presented as they relate to common chronic health problems, such as heart disease and diabetes. (45-0) *Equivalent to 70-200, BIOL-205.*

BIO-152 Health and Nutrition (3 s.h.)
This course covers the science of health and its application to the individual, family, and community. Topics presented include stress management, human sexuality, elementary physiology, nutrition, dependency behaviors, and other current national health concerns. (45-0) *Equivalent to 70-110, BIOL-105.*

BIO-186 Microbiology (4 s.h.)
Morphology, physiology, taxonomy, and relationship of microorganisms to disease. In-depth laboratory study and suitable lecture material with applications to agriculture, industry, and medicine. (45-30) *Equivalent to 70-109, BIOL-109.*

BIO-196 Introduction to Bio-Technology (4 s.h.)
The purpose of this course is to help students understand the importance and impact of bio-technology on our lives. Students will be introduced to bio-science's impact on society and made to realize that technologies, like the tools they are manifested in, can be used "for better or for worse." The benefits of bio-science will be discussed in six major categories: agriculture, industry, medicine, environmental, forensic, and advancement of knowledge. (45-30)

BIO-202 Biology I (4 s.h.)
Corequisite: CHM-153, College Chemistry I, or CHM-166, General Chemistry I, or permission of instructor. This course, with the addition of BIO-203, Biology II, is a detailed lecture and laboratory-based study of the fundamental principles of biology, including the study of ecology and environmental issues, cell structure and function, energy transfer, inheritance, and evolution. (45-30)

Note: Students enrolling in Biology I or II should plan on taking both semesters of the sequence at NIACC, preferably during the same academic year. Problems may result for the student who takes one Biology semester at NIACC and the other semester at a different institution. *Equivalent to 70-105, BIOL-201.*

BIO-203 Biology II (4 s.h.)
Prerequisite: BIO-202, Biology I or permission of instructor. This course, with the addition of Biology I, is a lecture and laboratory-based study of evolution and the diversity of life. (45-30)

Note: Students enrolling in Biology I or II should plan on taking both semesters of the sequence at NIACC, preferably during the same academic year. Problems may result for the student who takes one Biology semester at NIACC and the other semester at a different institution. *Equivalent to 70-108, BIOL-202.*

BIO-206 Anatomy and Physiology I (4 s.h.)
Prerequisite: BIO-102, Introductory Biology, highly recommended. A lecture and laboratory-based study of the human body emphasizing the complementary nature of structure and function, molecular

and cellular interactions, homeostasis, and metabolic processes. Includes a study of cells, tissues, membranes, skeletal, muscular, and reproductive systems. (45-30)

Note: Students enrolling in Anatomy and Physiology I or II should plan on taking both semesters of the sequence at NIACC. Problems may result for the student who takes one A&P semester at NIACC and the other semester at a different institution. *Equivalent to 70-250, BIOL-220.*

BIO-207 Anatomy and Physiology II (4 s.h.)

Prerequisite: BIO-206, Anatomy and Physiology I, or permission of instructor. A continuation of BIO-206, Anatomy and Physiology I. Includes a study of the circulatory, respiratory, digestive, endocrine, urinary, and nervous systems. Cat, heart, kidney, brain, and eye dissections are performed in the laboratory. (45-30)

Note: Students enrolling in Anatomy and Physiology I or II should plan on taking both semesters of the sequence at NIACC. Problems may result for the student who takes one A&P semester at NIACC and the other semester at a different institution. *Equivalent to 70-251, BIOL-221.*

BIO-922A-D Field Studies in Biology (1-4 s.h.)

Prerequisite: permission of the instructor. Field-based exploration of fundamental concepts of ecology and biology through active investigation. Use of nature centers, field professionals, parks, and the environment itself for learning and interpretation. Past trips include Belize, tropical ecology; Washington state, temperate rainforest and tide pool ecology; northern Minnesota, boreal forest ecology. (5-30 to 120) *Equivalent to 70-204, BIOL-922A-D.*

BMA-168 Steam Plant Operations I (Low Pressure Boilers)(2 s.h.)

This course presents principles of safe operation and maintenance of low-pressure boiler systems and prepares students for the state certification exam. This is a pass/no pass course. (30-0)

BMA-169 Steam Plant Operations II (High Pressure Boilers) (2 s.h.)

This course provides an overview of high pressure boiler operations and is used as a preparatory course for the state boiler technician exam. This is a pass/no pass course. (30-0)

BUS-102 Introduction to Business (3 s.h.)

An overview of the phases and functions of the business enterprise. Units of instruction include the organization, financing, production, and contemporary issues in business. The course provides an awareness and understanding of the complexities of the business world. (45-0) *Equivalent to 15-101, BUSN-101.*

BUS-107 Business Careers (1 s.h.)

A preparatory course that helps students plan for the world of work. Instruction focuses on: planning a career in business, searching for a job, preparing career search documents, interviewing, job securement, and job-keeping skills. This is a pass/no pass course. (15-0)

BUS-121 Business Communications (3 s.h.)

This course will help the student become an effective communicator in the business world. Basic written communication will be emphasized through practice in grammar structure, vocabulary building, and organization of thoughts. These skills will then be implemented when the student plans and writes business letters and interoffice

memorandums. A secondary emphasis will be placed on oral communication, listening skills, and nonverbal communication. (45-0) *Equivalent to 15-212, ENGL-705.*

BUS-134 The Successful Entrepreneur (2 s.h.)

Students will learn the personal traits and characteristics necessary to succeed in the fast-paced environment. This course will examine the various skills and habits necessary for being a successful entrepreneur. Various case studies will be examined as to why some businesses fail while others succeed. Students will identify their individual strengths and weaknesses and will learn what area they need to work on to insure success in an entrepreneurial venture. Students will be exposed to many types of entrepreneurial ventures, and will generate personal preferences for the types of ventures they would like to own. (30-0)

BUS-136 Creativity, Innovation & Opportunity Analysis (2 s.h.)

This course will teach students to assess the current economic, social, and political climate for entrepreneurial ventures. Students will be able to explain how demographic, creativity, innovation, technology and social changes create business opportunities. Students will assess the personal appropriateness of their business idea based on their strengths and skills, and professional and financial goals. An initial market assessment will be made and students will test their concepts through basic market research. (30-0)

BUS-142 Planning the Entrepreneurial Venture (3 s.h.)

Prerequisite: BUS-102, Introduction to Business; BUS-134, The Successful Entrepreneur; BUS-136, Creativity, Innovation and Opportunity Analysis; and, ACC-111, Introduction to Accounting or ACC-121, Principles of Accounting I. Planning the Entrepreneurial Venture is a blended-learning course designed to teach students how to research, develop, and write detailed start-up Business Plans, which can be used to create successful businesses. The blended-learning environment provides a dynamic, interactive experience that combines the flexibility of Internet-based e-learning with the benefits of face-to-face instruction. (45-0)

BUS-143 FastTrac® NewVenture™ (2 s.h.)

Recommended: Students must have a specific business concept they would like to pursue or have taken BUS-102, Introduction to Business, BUS-134, The Successful Entrepreneur, BUS-136, Creativity, Innovation and Opportunity Analysis. FastTrac® NewVenture™ assists the start-up entrepreneur in developing a business concept and evaluating it through each step of the business planning process. This is a course designed to teach students how to research, develop, and write detailed start-up Business Plans, which can be used to create successful businesses. This course has been designated as a pass/no pass course. (35-0)

BUS-144 FastTrac® GrowthVenture™ (2 s.h.)

Prerequisite: Students must have a business they have been operating for two years or longer. FastTrac® GrowthVenture™ assists entrepreneurs in evaluating their current business framework and determining the changes needed to improve performance and grow their business. This course has been designated as a pass/no pass course. (35-0)

BUS-151 Introduction to E-Commerce (3 s.h.)

This course provides students with foundational skills and general information about electronic business solutions on the World Wide

Web. Topics will include features of Internet marketing, sales, computer graphics, and network security. Students will also be introduced to Internet-related programming concepts and tools used to create web-based solutions. (45-0) *Equivalent to 15-191, ECOM-101.*

BUS-159 Internet Law, Copyright and Computer Ethics (1 s.h.)

The ever-evolving world of the Internet is filled with unseen traps and speed bumps. Many of these obstacles can be avoided with the right knowledge. Internet Law, Copyright and Computer Ethics is not designed to make you a lawyer or even totally understand all the laws. This course is designed to make you aware of some of the more important things to be aware of, keeping you out of trouble. (15-0)

BUS-161 Human Relations (3 s.h.)

The study of how people satisfy both personal growth needs and organizational goals. Human Relations looks at what can be done to anticipate problems, resolve them, or prevent them from happening. Emphasis is on practical knowledge which can be applied at work or at home. Significant developments in recent years have increased the importance of interpersonal skills in almost every type of setting; these trends provide support for the necessity of acquiring competence in human relations. (45-0) *Equivalent to 15-241, BUSN-105.*

BUS-185 Business Law I (3 s.h.)

Law as applied to business transactions and business relationships. An introduction to jurisprudence and the courts, contracts, commercial paper, sales, and security agreements. (45-0) *Equivalent to 15-120, BUSN-120.*

BUS-186 Business Law II (3 s.h.)

Prerequisite: BUS-185, Business Law I recommended. A continuation of BUS-185. Agency, corporations, partnerships, bailments, real property, wills, trusts, insurance, bankruptcy, and government regulation of business. Some information on international law and liability of accountants and other professionals. (45-0) *Equivalent to 15-121, BUSN-121.*

BUS-225A-E Business Internships (1-5 s.h.)

Prerequisites: 1. Students must enroll in and pass BUS-107, Business Careers. 2. Students must have completed and filed an Application for Employment with their Internship Coordinator. 3. Students must have their proposed experience approved by the Internship Coordinator before they may register and begin. Business Internships is a learning experience which is: 1. based on practical work experience, 2. related directly to the student's program of study, 3. individualized to enable the student to gain valuable work experience and help determine career choices, and 4. geared to the student's academic knowledge, personal development and professional preparation. Instructor's consent required. Course is repeatable for a maximum of 15 credit hours. (0-60 to 300)

BUS-255 60-Hour Real Estate Pre-license (3 s.h.)

This course must be completed prior to taking the Iowa real estate licensing exam to become a Real Estate Salesperson. During the course, you will learn the Iowa Real Estate Commission prescribed course of study. Upon completion of this curriculum, participants will be exposed to principles of real estate, terminology, mathemati-

cal calculations, procedures and ethics necessary to enable them to understand the real estate profession. Effective January 1, 2009, an additional 36 hours of coursework (non-credit) are needed before you can apply for your real estate license (Listing Practices - 12 hours, Buying Practices - 12 hours, Developing Professionalism and Ethical Practices - 12 hours) (30-30) *Equivalent to 15-207, BUSN-210.*

BUS-260 Introduction to Insurance (3 s.h.)

Principles of insurance and risk, including personal and business viewpoints in regard to life, health, property, and liability risks. (45-0) *Equivalent to 15-190, INSS-101.*

BUS-266 Property and Casualty Insurance (3 s.h.)

Prerequisite: BUS-260, Introduction to Insurance. This course is designed to provide instruction that will provide a high level of understanding of property and casualty insurance. Topics covered include fire, homeowners, dwelling, auto, business and professional liability, crime and fidelity, worker's compensation, and applications from a personal and commercial perspective. (45-0) *Equivalent to 15-195, INSS-102.*

BUS-267 Life, Health, and Disability Insurance (3 s.h.)

Prerequisite: BUS-260, Introduction to Insurance. This course is designed to provide instruction in a variety of areas giving the student a good understanding of life insurance, health insurance, and the role and application of both within the industry. (45-0) *Equivalent to 15-200, INSS-103.*

BUS-298 Seminar in Entrepreneurship (3 s.h.)

Prerequisite: BUS-134, The Successful Entrepreneur, and BUS-136, Creativity, Innovation and Opportunity Analysis. Course will combine group discussions with an actual case project at a local entrepreneurial firm. Students will have an opportunity to apply business skills learned throughout their NIACC program as they complete a project for a local entrepreneurial venture. Students also will discover key entrepreneurial success characteristics. (15-60) *Equivalent to 15-173, ENTR-103.*

CAD-216 Architectural CADD (2 s.h.)

Students will be instructed in residential architecture drafting techniques required to design and draft floor plans, exterior and interior details, and structural representations. The course will use architectural CAD software to develop a full set of residential house plans. Upon completion, students should be able to prepare and plot architectural drawings to scale within accepted architectural standards. (16-26)

CFR-100 Computer Forensics I (3 s.h.)

Prerequisite: NET-113, IT Essentials I, or permission of instructor. This course deals with the preservation, identification, extraction, documentation and interpretation of computer data. Topics covered include evidence handling, chain of custody, collection, preservation, identification and recovery of computer data. This course will feature the use of Helix forensics tools. (60-0)

CHM-122 Introduction to General Chemistry (4 s.h.)

Prerequisite: MAT-063, Elementary Algebra, or equivalent. A one-semester college chemistry course which surveys important concepts and topics of chemistry. Among these are the metric system

of measurement, atomic theory of matter, energy levels and atomic structure, the periodic table, ionic and molecular compounds, ionic and covalent bonding, chemical reactions, and reaction equations and calculations. Laboratory work is an important part of this course. High school chemistry is not a prerequisite. This course is not intended for science majors (but may be appropriate as preparation for a more thorough beginning chemistry course). (45-30) *Equivalent to 70-140, CHEM-101.*

CHM-153 College Chemistry I (5 s.h.)

Prerequisite: MAT-063, Elementary Algebra, or equivalent. First semester of a two-semester sequence intended for nonscience majors. Introduction to the basic concepts and facts of chemistry. Topics include the metric system of measurement, atomic theory of matter, energy levels and atomic structure, the periodic table, ionic and molecular compounds, ionic bonding, covalent bonding and molecular structure, classification of chemical reactions, and reaction equations and chemical calculations. This course treats these topics in more depth than Introduction to General Chemistry (CHM-122); however, high school chemistry is NOT a prerequisite. Laboratory work is an important part of this course. (45-60) *Equivalent to 70-135, CHEM-110.*

CHM-154 College Chemistry II (5 s.h.)

Prerequisite: CHM-153, College Chemistry I, or equivalent. The continuation of CHM-153, College Chemistry I, this is the second semester of a two-semester sequence intended for non-science majors. Topics include a review and extension of first-semester material on chemical calculations, reaction rates, chemical equilibrium and acid-base chemistry, electron-transfer (oxidation-reduction) reactions and electrochemical cells, and, as time permits, introductions to organic and biological chemistry. Laboratory work is an important part of this course. (45-60) *Equivalent to 70-136, CHEM-111.*

CHM-166 General Chemistry I (5 s.h.)

Prerequisite: satisfactory completion of one year of high school chemistry and MAT-102, Intermediate Algebra, or the equivalent. Atomic structure, stoichiometry, thermochemistry, reactions in aqueous solution, chemical bonding and molecular structure, structure-property relationships. (45-60) *Equivalent to 70-137, CHEM-210.*

CHM-176 General Chemistry II (5 s.h.)

Prerequisite: CHM-166, General Chemistry I, or equivalent. Physical properties (gases, liquids, solids), chemical equilibrium and kinetics, acid-base chemistry, chemical thermodynamics, electrochemistry, nuclear chemistry. (45-60) *Equivalent to 70-138, CHEM-211.*

CHM-263 Organic Chemistry I (5 s.h.)

Prerequisite: CHM-154, College Chemistry II, or CHM-176, General Chemistry II. Survey of some major classes of organic compounds emphasizing nomenclature, molecular structure, stereochemistry, reaction mechanisms and synthesis. Laboratory work introduces standard procedures of distillation, recrystallization, solvent extraction, polarimetry, chromatography, and computer-aided molecular modeling. (45-60) *Equivalent to 70-274, CHEM-220.*

CHM-273 Organic Chemistry II (5 s.h.)

Prerequisite: CHM-263, Organic Chemistry I. Introduction to electron delocalization and its effect of the stability and reactiv-

ity of organic compounds. Substitution and elimination reaction mechanisms will be described and used to explain the chemistry of some important classes of organic compounds. Students will be introduced to the technique of molecular structure determination by the analysis of infrared and nuclear magnetic resonance spectra. Laboratory work includes synthesis of organic compounds and their analysis by infrared spectroscopy, gas chromatography, and molecular modeling software programs. (45-60) *Equivalent to 70-275, CHEM-221.*

CIS-119 Introduction to Programming (4 s.h.)

Prerequisite: CIS-125, Introduction to Programming Logic with Language, or permission of the instructor. This course provides students exposure to computer program design, structure, development, and troubleshooting through an examination of such topics as logic concepts, variables, input/output, interactive constructs, conditional flow, modular design, create and manage databases, debugging, cgi scripting, object-oriented programming, and the comparison of programming languages. (60-0) *Equivalent to 15-168, ISTS-105.*

CIS-125 Introduction to Programming Logic with Language (3 s.h.)

A fundamental requirement for people in the Information Technology field is the ability to organize a solution to a problem. This, in and of itself, is a difficult task. Often, however, this skill takes a backseat to learning code or is lost in the complexity of the task. Introduction to Programming Logic w/Language concentrates on the process of developing a logical algorithmic solution to a problem. (45-0) *Equivalent to 15-196, ISTS-125.*

CIS-153 Data Structures (4 s.h.)

Prerequisite: CIS-125, Introduction to Programming Logic with Language. Students will study functional decomposition. Students will learn the data structures and accompanying algorithms that are most fundamental to computer science discipline and analyze various implementations of each. (60-0)

CIS-155 Introduction to Video Game Testing (3 s.h.)

Introduction to Video Game Testing defines the steps involved in taking the basic idea for a video or computer game through the formal steps of definition and implementation. The course is meant to provide the overview of how testing is incorporated into video game production and development. Basic testing concepts will be introduced to the students. Students will develop their working video game. The students will then thoroughly test other students' video games. *Equivalent to ISTS-140.* (45-0)

CIS-156 Testing Concepts (4 s.h.)

Prerequisite: CIS-155, Introduction to Video Game Testing. Covers the basics of testing, including the test plan, the steps in fully testing new software throughout the product lifecycle, and ensuring complete adherence to client requirements. The following areas will be covered: test phases, effective testing, combinatorial testing, test flow diagrams, clean room testing, and test trees. (60-0)

CIS-157 Beginning iPhone Development (3 s.h.)

Are you a programmer looking for a new challenge? Does the idea of creating applications for the iPhone sound like a cool way to make some extra money? Learn to design and implement iPhone applications from concept through completion, then post them in iTunes and let the downloads begin. (45-0)

CIS-172 Java (4 s.h.)
 Prerequisite: CIS-119, Introduction to Programming, or permission of the instructor. This course introduces students to doing purely object-oriented programming using the Java syntax. Emphasis is placed on using Java for web development. Students learn how to create their own objects and employ these objects as solutions to common real world-based web problems using applications and applets. Students will learn to create interactive elements and simple GUI elements. Use of the java.awt components, event-handling model, containers, and layout managers will also be emphasized. File handling techniques and multithreading will be presented, along with JavaBeans. Applications and applets will be built from button up to facilitate in deeper understanding of the concepts used in OOP. (60-0) *Equivalent to 15-204, ISTS-220.*

CIS-210 Web Development I (3 s.h.)
 This course covers comprehensively the latest version of HTML. Students will learn good coding practices and be introduced to web development tools and FTP programs. Students will also be introduced to CSS (Cascading Style Sheets), image management, browser helper applications, pages for cell phones, and basic JavaScript. (45-0) *Equivalent to 15-169, ECOM-110.*

CIS-224 Server Side Scripting (4 s.h.)
 Prerequisite: CIS-119, Introduction to Programming, and CIS-332, Database and SQL, or permission of the instructor. Students will learn to develop and implement web applications using server side scripting with emphasis on a single language. Additional server side scripting languages and technologies will be discussed. Much of the languages object model and methods will be covered with focus on how to work with these objects and procedures. Students will gain hands-on experience while writing real world-based web applications from the ground up. Database basics will also be learned along with SQL. Simple databases will be created for use with web application back-ends. Students will learn to access and modify their databases by building front-ends for them using server side scripting and embedded SQL. Sufficient time will be spent building solutions that require using ASP, HTML, JavaScript, and various other server side scripting technologies together. (60-0) *Equivalent to 15-203, ECOM-203.*

CIS-232 Web Development II (1 s.h.)
 Prerequisite: CIS-210, Web Development I. There are many ways to turn simple web sites into powerful, full-featured sites. Web Development II focuses on some of the most popular web site additions, including updatable calendars, threaded discussions, shopping carts, and more. (15-0)

CIS-246 Intermediate Testing Concepts (4 s.h.)
 Prerequisite: CIS-156, Testing Concepts, or permission of instructor. Instruction in manual testing, hardware testing, and cross-platform testing. Manual testing is and will always be the cornerstone to effective testing. Cross-platform testing includes learning techniques for ensuring software quality on more than one machine type. Testing environments will include Windows/Mac/Linux computers and various video-gaming consoles. (60-0)

CIS-275 Advanced Testing Concepts (2 s.h.)
 Prerequisite: CIS-246, Intermediate Testing Concepts. Instruction in testing automation, capture playback testing, performance testing, regression testing and defect triggers. (30-0)

CIS-276 Testing Cases (4 s.h.)
 Prerequisite: CIS-246, Intermediate Testing Concepts, or permission of the instructor. Should be taken last semester of student's Testing program of study. Investigate current testing procedures and real life scenarios regarding software and product testing business practices. This capstone course will tie together previous testing courses to real life application. (60-0)

CIS-332 Database and SQL (3 s.h.)
 Prerequisite: BCA-101, Introduction to Computers and Information Systems, or permission of the instructor. This course introduces students to database concepts, with topics such as database structure and design, planning, modeling, database software and servers, SQL, reports, fault tolerance, and administration being covered. Exposure to current and popular database systems will be provided. (45-0) *Equivalent to 15-174, COMP-205.*

CIS-620 Bot Programming for Game and Application Automation in Windows (1 s.h.)
 Prerequisite: CIS-119, Introduction to Programming. Instruction in programming bots to perform automation for games and software applications in windows. (15-0)

CON-107 Construction Safety (2 s.h.)
 This course covers Safety and Health Standards for the Construction Industry (29 CFR Part 1926). Safety in the construction industry is as essential to securing the well being of the company as it is to protecting the welfare of the worker. Changes in the labor market, insurance costs, and OSHA compliance requirements make it imperative that supervisors and workers receive adequate safety training to develop, practice, and maintain safe working conditions at construction work sites. (30-0) *Equivalent to BUIL-700, 91-161.*

CON-110 Construction Drawing (1 s.h.)
 Students will learn about the fundamentals of drawing using manual drafting skills. Construction Drawing is designed to give students the skills necessary to produce a set of working drawings. Students will learn to draw plans, sections, elevations, details, and schedules. (15-0) *Equivalent to BUIL-705, 91-173.*

CON-112 Blueprint Reading/Estimating (3 s.h.)
 Residential and commercial blueprint reading and materials estimating covers understanding drawings, the language of construction. Students learn how to gather and use information from prints and drawings to estimate quantities of materials and perform construction work processes. (45-0) *Equivalent to BUIL-720, 91-198.*

CON-117 Building Codes and Standards (2 s.h.)
 This course covers construction-related building codes and standards. Presentations illustrate which of the various codes and standards affect specific types of construction. Students learn how competent construction workers bear responsibility for knowing, understanding, and complying with codes and standards during all phases of the construction process. (30-0) *Equivalent to BUIL-715, 91-174.*

CON-121 Carpentry Fundamentals I (4 s.h.)
 General skills instruction covers safety; basic hand tools; basic power tools; jobsite safety; printreading; construction materials and systems; construction fasteners and processes; residential construction practices; and commercial construction practices. (24-75)

- CON-123 Carpentry Fundamentals II** (4 s.h.)
Prerequisite: CON-121, Carpentry Fundamentals I. General skills instruction covers safety; basic hand tools; basic power tools; jobsite safety; printreading; construction materials and systems; constructional fasteners and processes; residential construction practices; and commercial construction practices. (24-75)
- CON-255 Carpentry I** (4 s.h.)
Prerequisites: CON-121, Carpentry Fundamentals I, and CON-122, Carpentry Fundamentals II. General skills instruction covers safety; hand tools; power tools; printreading; builders level, transit, and laser; scaffolding; and rigging. Residential skills instruction covers site work; building layout; formwork; floor and still framing; wall and ceiling framing; roof framing; stair construction; exterior walls, soffits, and cornice construction; roof coverings; window and door installation; cabinet fabrication; and running trims and hardware installations. (24-75)
- CON-256 Carpentry II** (4 s.h.)
Prerequisite: CON-255, Carpentry I. General skills instruction covers safety; hand tool; power tools; printreading; builders level, transit and laser; scaffolding; rigging; arc welding; cutting and burning. Commercial skills instruction covers site work; building layout; footing, wall, stair, column, beam, and deck form constructions; wood and steel stud framing; exterior walls and canopying construction; cabinet fabrication; wood and steel jamb; window, door, millwork, and hardware installations; and office partition, and acoustical ceiling installations. (24-75)
- CON-305 Cabinetry and Millwork** (3 s.h.)
This competency-based course prepares students for entry-level positions in the cabinetmaking and millwork, furniture-making and woodworking industries. (15-60)
- CON-315 Guitar Building** (2 s.h.)
No prerequisite, but CON-107, Construction Safety, or CON-305, Cabinetry and Millwork, is beneficial. Students in Guitar Building will design and build an electric guitar or bass and learn a lot about types and species of woods, as well as the intricate details that go into guitar building. This course will cover a number of different concepts as they relate to design, engineering, materials processes, fastening techniques, precision measuring and machining, electronics, physics, math and communications. As time allows, students will also learn basic chording and rhythm techniques with their custom built instrument. Students will be responsible for the cost of their instrument. (8-40)
- CON-949A-C Special Topics in Carpentry** (1-3 s.h.)
This course provides options for students that have earned a Building Trades diploma and are seeking a degree. It provides an opportunity to focus on specific skill sets for a current or potential employer. (0-30, 0-60, 0-90)
- CRJ-100 Introduction to Criminal Justice** (3 s.h.)
Arrest, search and seizure; review of court systems; procedures from incident to final disposition; principles of constitutional, federal, state, and civil laws as they apply to and affect law enforcement. (45-0) *Equivalent to CRIM-107, 80-291.*
- CRJ-105 Intermediate Criminal Investigation** (3 s.h.)
Prerequisite: CRJ-141, Criminal Investigation. An overview of essential topics in private or public criminal justice careers. Units of instruction include crime scene forensic techniques, investigation of drug crimes, interview and interrogation skills, report writing, community policing, police ethics and contemporary issues in criminal justice. (45-0)
- CRJ-110 Patrol Procedures** (3 s.h.)
Examining the responsibilities, techniques, and methods utilized by the uniformed police patrol officer. (45-0) *Equivalent to CRIM-105, 80-192.*
- CRJ-130 Criminal Law** (3 s.h.)
The philosophy and basis for law; the historical development of criminal law and procedures; the structure, definitions, and criminal laws of Iowa. (45-0) *Equivalent to CRIM-101, 80-190.*
- CRJ-141 Criminal Investigation** (3 s.h.)
The examination of fundamental investigative techniques, and the application of these techniques to specific investigative situations. (45-0) *Equivalent to CRIM-108, 80-292.*
- CRJ-227 Employment Strategies for Criminal Justice** (1 s.h.)
Prerequisite: Student must be registered in the Criminal Justice Program. This course prepares students for the steps involved in securing a position in criminal justice fields. It is an introduction to the job search process, including the resume, cover letter, and job interview. It also covers information unique to the criminal justice selection process. (15-0)
- CRJ-230 Evidence** (3 s.h.)
The kinds and degrees of evidence and the rules governing the admissibility of evidence in court. (45-0) *Equivalent to CRIM-106, 80-290.*
- DRA-119 Introduction to Theatre, TV and Film** (3 s.h.)
A survey of dramatic theatre, television, and film. (45-0) *Equivalent to DRAM-101, 85-150.*
- DRA-145 Oral Interpretation** (3 s.h.)
Meets either Communications or Humanities requirement. Analyzing prose, poetry, and drama selections for their logical and emotional content, and learning platform techniques to present this material to an audience. (45-0) *Equivalent to 30-110, LITS-110.*
- DSL-805 Class A CDL Mini-Course** (1 s.h.)
Prerequisite: Valid Iowa driver's license. This course provides the safety and skills training needed to meet the minimum requirements established by the Federal Department of Transportation to obtain a Class A Commercial Driver's License. This classification of driver's license will give the learner the foundational skills required to apply for entry-level employment in a variety of fields requiring the Class A CDL. This course is designated as a pass/no pass course. (12-8)
- ECE-103 Introduction to Early Childhood Education** (3 s.h.)
Gives students a historical and philosophical foundation of the field of early childhood education. Includes an overview of assessment and trends that influence best practices. Explores careers in the field. Addresses influences of families and diversity. (45-0) *Equivalent to 20-125, EDUC-125.*

ECE-131 Home & School Relationships in Early Childhood (3 s.h.)
Home & School Relationships in Early Childhood provides techniques for developing home, school, and community relationships to encourage the learning and well-being of each child. Birth through age 8 is emphasized. (45-0) *Equivalent to EDUC-128.*

ECE-133 Child Health, Safety, and Nutrition (3 s.h.)
Focuses on current concepts in the fields of health, safety, and nutrition and their relationship to the growth and development of the young child ages birth to eight. Blends current theory with practical applications and assessments. Includes the influences of families and diversity on health, safety, and nutrition in early childhood settings. (45-0) *Equivalent to 20-126, EDUC-126.*

ECE-159 Early Childhood Curriculum II (3 s.h.)
Focuses on the development, implementation and assessment of appropriate environments and curricula for young children ages three through eight. Students prepare to utilize developmentally appropriate practices in a context of family and culturally sensitive care. Emphasis is on understanding children's developmental stages and developing appropriate learning opportunities, interactions and environments in the following areas: emergent literacy, math, science, technology, and social studies. (45-0)

ECE-170 Child Growth and Development (3 s.h.)
Reviews typical and atypical development of children from conception to adolescence in all developmental domains. Presents interactions between child, family and society within a variety of community and cultural contexts. Examines theories associated with our understanding of children. (45-0)

ECE-243 Early Childhood Guidance (3 s.h.)
This course focuses on effective approaches and positive guidance strategies for supporting the development of all children. Emphasizes supportive interactions and developmentally appropriate environments. Uses assessment to analyze and guide behaviors. Studies impact of families and diversity on child guidance. (45-0) *Equivalent to EDUC-129.*

ECN-115 Personal Finance (3 s.h.)
Introduction to financial planning, using financial services and your income wisely, protecting your assets, increasing your income through savings and investments, and planning for retirement. The primary emphasis is on investments. These include, but are not limited to stocks, bonds, real estate, and financial derivatives. (45-0) *Equivalent to ECON-101, 80-135.*

ECN-120 Principles of Macroeconomics (3 s.h.)
An introductory study of how people use scarce resources to satisfy unlimited wants. After an introduction to economics, the emphasis is on the determination of national income, output, employment, and the general price level in the national economy including an examination of the money and banking system. (45-0) *Equivalent to 80-133, ECON-110.*

ECN-130 Principles of Microeconomics (3 s.h.)
Prerequisite: ECN-120, Principles of Macroeconomics. An introductory study of how people use scarce resources to satisfy unlimited wants. The emphasis is on the behavior and decision making by individual consumers, entrepreneurs, workers, and

other resource owners in the product and resource markets and the resulting effects on the efficiency with which resources are used. (45-0) *Equivalent to 80-134, ECON-111.*

EDU-216 Introduction to Teaching (3 s.h.)
An introductory course in teacher education that gives students a clear view of the skills and knowledge they will need to be successful professionals. The course covers the place of the school in the community, basic philosophy including foundations and the future, the organization and administration of schools, and the nature of the curriculum. (45-0) *Equivalent to 20-101, EDUC-101.*

EDU-219 Field Experience and Seminar (1 s.h.)
Corequisite: EDU-216, Introduction to Teaching. Field experience provides purposeful classroom observations for pre-service teachers. Students will reflect on the ways schools function, identify the roles and responsibilities of teachers, and observe student behavior. Through this field experience, the students will get a realistic view of being a teacher and will be able to make an informed decision as to whether or not teaching is a good career choice. Evaluation is pass/no pass. (5-30)

EDU-235 Children's Literature (3 s.h.)
Prerequisite: ENG-102, Composition & Speech I, or ENG-105, Composition I, and ENG-103, Composition & Speech II, or ENG-106, Composition II, or comparable courses or approval of instructor. EDU-216, Introduction to Teaching, is also a prerequisite. A study of Children's Literature by genre. An emphasis on teaching literature in the classroom will be a major component of the course. Purposeful school visitations will provide practical experience. This course meets some education program requirements. (45-0) *Equivalent to 30-210, EDUC-201.*

EDU-236 Young Adult Literature (3 s.h.)
Prerequisite: ENG-102, Composition & Speech I, ENG-103, Composition & Speech II, and EDU-216, Introduction to Teaching preferred (may be taken concurrently). This course is designed to discuss, evaluate, and select literature written for adolescents (grades 6-12). Types of literature and methods of utilization and evaluation for use in upper elementary, mid-level, and high schools will be addressed. An emphasis on teaching literature will be a component of this course. Purposeful school visitations will provide practical experience. (30-30)

EDU-242 Classroom Assessment (2 s.h.)
Prerequisite: EDU-216, Introduction to Teaching. This course is an introduction to the assessment process for classroom teachers. It will focus on the interaction between assessment and instruction, formative and summative assessment, development and use of teacher-constructed assessments, purposes and interpretation of standardized assessments, and grading and communicating about student performance. (30-0) *Equivalent to 20-110, EDUC-210.*

EDU-246 Including Diverse Learners (3 s.h.)
Prerequisite: EDU-216, Introduction to Teaching. An introductory discussion of issues and practices regarding the inclusion of diverse student populations in general education settings. Emphasis is placed on addressing the needs of all students, i.e. general education, special education, gifted, at risk, and multicultural. Formal and informal projects explore adaptive strategies for the curriculum and the classroom. (45-0) *Equivalent to 20-120, EDUC-220.*

EDU-250 Educational Technology and Design (3 s.h.)
Prerequisite: None; however, prior education courses are recommended. The production of instructional media/computer technology and their relationship to educational strategies within an instructional design framework. Course activities include the planning, design, and production of media and the operation of hardware and software for educational use. Students will be exposed to various ways of thinking about educational media and the messages they deliver. The course provides students with experiences that enable them to integrate technology resources to support clearly defined learning objectives. (30-30) *Equivalent to 20-195, EDUC-195.*

EDU-290 Education Capstone Seminar (1 s.h.)
Corequisite: Enrolled in the Elementary Education Learning Community which consists of the following courses: BIO-123, Inquiry Into Life Science; EDU-242, Classroom Assessment; EDU-246, Including Diverse Learners; and MAT-154, Math for Elementary Teachers II; or permission from any of the four instructors. This course provides an opportunity for Education majors to discuss: i) current education topics; ii) characteristics of effective educators focusing on dispositions; and, iii) professional development organizations and opportunities. Students will work on assembling an education portfolio, and will learn about further opportunities in education. This is a pass/no pass credit course. (15-0)

EGT-102 Orientation to Engineering (0 s.h.)
Designed to help freshmen better understand engineering and assist them in choosing their area of specialization. Presentations by guest engineers from industry who discuss their areas of the profession. Field trips to a selected engineering department of North Iowa industrial firms. (Class meets one hour per week.) This course has been designated as a pass/no pass course. (15-0) *Equivalent to 25-110, ENGR-100.*

EGT-119 Mechanics of Materials (3 s.h.)
Prerequisite: EGT-129, Statics for Engineering, with grade of C or higher. Plane stress, plane strain, stress-strain relationships, and elements of material behavior. Application of stress and deformation analysis to members subject to centric, torsional, flexural, and combined loadings. Elementary considerations of theories of failure, buckling. (45-0) *Equivalent to 25-251, ENGR-232.*

EGT-129 Statics for Engineering (3 s.h.)
Prerequisite: MAT-210, Calculus I, with a grade of C or higher. Corequisite: MAT-216, Calculus II; and PHY-212, Classical Physics I. Scalar and vector quantities, forces, moments of forces, couples, and force systems; equilibrium, centroids and centers of gravity; analysis of structures; internal forces, shear and bending moments; friction; moments of inertia of areas. (45-0) *Equivalent to 25-231, ENGR-231.*

EGT-181 Engineering Problems/FORTRAN (3 s.h.)
Corequisite: MAT-121, College Algebra; or MAT-128, Precalculus; or MAT-134, Trigonometry and Analytic Geometry; or MAT-165, Calculus. Development of skills, standards, and orderly methods of solving engineering problems. SI and English measurement and unit conversion. Estimation and calculation with approximate numbers. Significant figures. Graphing and curve-fitting of technical data. Using logarithmic and trigonometric functions. Introduction to engineering economics and statistics. Solution of engineering problems using the FORTRAN language. (30-30) *Equivalent to 25-111, ENGR-111.*

EGT-192 Engineering Graphics and Design (3 s.h.)
Corequisite: Credit (with grade of C or higher) or enrollment in MAT-121, College Algebra; or MAT-128, Precalculus; or MAT-134, Trigonometry and Analytic Geometry; or MAT-165 Calculus. The integration of fundamental engineering graphics, computer-aided design (CAD), and engineering design. CAD drawing of orthographic views and isometric pictorials; and basic dimensioning. Techniques for visualizing, analyzing and communicating 3-D geometries. Application through creative design projects with written and oral reports. (15-75) *Equivalent to 25-112, ENGR-112.*

EGT-460 Project-Lead-The-Way -- Civil Engineering and Architecture (3 s.h.)
Prerequisite: A high school Project-Lead-The-Way course in Introduction to Engineering Design, or Principles of Engineering, or consent of instructor. This course introduces students to the interdependent fields of civil engineering and architecture. Students learn project planning, site planning, and building design. (15-60)

ELT-115 Electronic Concepts (3 s.h.)
Electronic Concepts is an introductory survey of electricity and electronics suitable for students interested in pursuing a career in such technical fields as electronics, automotive, HVAC, and other fields that require knowledge of basic electrical/electronic concepts. Topics include safety, shop and lab practices, motors and controls, direct and alternating current, and semiconductor and digital electronics. Course work consists of problem solving, computer-assisted instruction, computer simulation, and hands-on exercises with industrial grade equipment. (30-30) *Equivalent to 96-132, INDU-701.*

ELT-124 Advanced PLCs and System Integration (3 s.h.)
Corequisite: ELT-170, Introduction to PLC's. Advanced topics in programmable logic controllers using the Allen-Bradley SLC500 and RSLogix 500 programming software including analog I/O and PID control. Application of RSLinx to establish communications and DH485 LAN networking. Controller Area Networking (CAN) using DeviceNET programming and integration using RSNetwork. PanelVIEW programming and integration using the Allen-Bradley PanelView 500 and PanelBuilder32. Projects involving practical field devices and program development. (30-45) *Equivalent to EMST-803, 91-203.*

ELT-133 Electric Motor Drives (2 s.h.)
Prerequisite: ELT-210, Motor Control Circuits. Study of AC general purpose variable speed drives, AC vector (spindle) drives, and AC servo drives. Hands-on exercises provide experience with typical components and interconnections needed to implement various control systems. Concepts of system stability, frequency response, feedback, damping, position and speed control are covered. System troubleshooting. Multiple Entry/Multiple Exit enrollment. (15-31) *Equivalent to 96-157, EMST-815.*

ELT-170 Introduction to PLC's (3 s.h.)
Prerequisite: ELT-210, Motor Control Circuits; ELT-309, Digital Circuits. Introduction to programmable logic controllers (PLC's) using the Allen-Bradley SLC500 and RSLogix 500 programming software, elementary ladder logic and discrete I/O instructions, counters, timers, program development techniques, and troubleshooting. Advanced topics in programmable logic controllers including program control instructions, math operations, sequencers, and data manipulation. This course is offered on campus as

an instructor-supervised/student-paced format and is also offered online. Students enrolled in this course should expect to spend 75-90 hours (5-6 hours/week) to complete the course. If in an on-campus section, that time will be spent in the Electromechanical Systems Technology Lab. (30-45) *Equivalent to EMST-802, 91-202.*

ELT-190 Introduction to Tech Computing & CAD (3 s.h.)

Prerequisite/Corequisite: Ability to key-enter the equivalent of 25 words/minute at a computer keyboard. Introduction to Technical Computing and CAD is designed to familiarize the student with microcomputer basics relating to occupations in the industrial/technical area. Topics include computer hardware, operating systems, commands and tasks, disk organization and access, word processing, spreadsheets, and two-dimensional computer-aided drafting (CAD). The student should expect to spend 5-6 hours per week in the Electromechanical Systems Technology lab to accomplish the required modular learning labs. (15-60) *Equivalent to EMST-701, 91-104.*

ELT-210 Motor Control Circuits (3 s.h.)

Prerequisite: ELT-382, Electronic Circuit Analysis. Introduction to industrial electrical motor and control circuitry. Emphasis placed on AC single- and three-phase circuit and transformer theory and industrial applications. Applications include various types of control elements. Study of the National Electrical Code as it pertains to manufacturing/industrial environment. Fundamental skills in electrical wiring and raceway techniques are learned through lab and/or project exercises. This course is offered in an instructor-supervised/student-paced format. Students enrolled in this course should expect to spend 75-90 hours (5-6 hours/week) in the Electromechanical Systems Technology Lab to complete the course. (15-69) *Equivalent to EMST-710, 91-105.*

ELT-309 Digital Circuits (3 s.h.)

Prerequisite/Corequisite: ELT-382, Electronic Circuit Analysis. Study of number systems related to digital circuits, Boolean Algebra/Karnaugh Maps. Combinational logic including AND, OR, NAND, NOR, NOT, and XOR. Combinational circuits decoders. Basic sequential elements including SR, D, JK, and Master-Slave flipflops. Sequential circuits including registers and counters. Memory circuits and applications. Analog to digital (A/D) and digital to analog (D/A) conversion, and elementary interfacing. Design, analysis, and computer simulation. This course is offered in an instructor-supervised/student-paced format. Students enrolled in this course should expect to spend 75-90 hours (5-6 hours/week) in the Electromechanical Systems Technology Lab to complete the course. (15-63) *Equivalent to EMST-712, 91-214.*

ELT-382 Electronic Circuit Analysis (3 s.h.)

Prerequisite/Corequisite: MAT-770, Applied Math, and MAT-771, Applied Math II. Study of the nature of electricity involving both direct and alternating current. DC circuit analysis utilizing more advanced techniques such as: superposition, Thevinin's and Norton's theorems. AC circuit analysis involving RL, RC, and RLC circuits, inductive and capacitive reactances, resonance, and transformer fundamentals. Computer circuit simulation of both DC and AC circuits is stressed along with an application of electronic test equipment; oscilloscopes, meters, and power supplies. This course is offered in an instructor-supervised/student-paced format. Students enrolled in this course should expect to spend 75-90 hours (5-6 hours/week) in the Electromechanical Systems

Technology Lab to complete the course. (15-60) *Equivalent to EMST-702, 91-175.*

ELT-550 Analog Devices (4 s.h.)

Prerequisite: ELT-382, Electronic Circuit Analysis. Study of diodes, bipolar transistors and field effect transistors (JFETs and MOSFETs) as they are used in both AC and DC electronic circuits. Applications such as power supplies, switching circuits and amplifier circuits are covered. Advanced topics in electronic devices including operational amplifiers (op amps), active filters, thyristors, and voltage regulation are covered. Practical circuit analysis of the devices under study is covered. Computer simulation of the devices under study is covered. Both circuit analysis and measurement techniques using meters and oscilloscopes are stressed. This course is offered in an instructor-supervised/student-paced format. Students enrolled in this course should expect to spend 100-120 hours (7-8 hours/week) in the Electromechanical Systems Technology Lab to complete the course. (15-91) *Equivalent to EMST-711, 91-179.*

ELT-710 Computer Automated Manufacturing (3 s.h.)

Prerequisite/Corequisite: ELT-790, Fluid Power and ELT-124, Advanced PLCs and System Integration. Capstone projects in Electromechanical Systems Technology: project identification, planning, and implementation, as well as, group dynamics, project structure, and troubleshooting techniques. Projects may include, but are not limited to automation, control, manufacturing, or educational hardware for program use. The integration of robots, instrumentation, computers, and programmable logic controllers, human/machine interface, communications, and other industrial systems. (15-65) *Equivalent to EMST-816, 91-206.*

ELT-734 Industrial Instrumentation (4 s.h.)

Prerequisite/Corequisite: ELT-170, Introduction to PLC's; ELT-309, Digital Circuits. The student studies modern instrumentation techniques as they apply to the manufacturing environment and uses industrial sensors, transducers, and related components. Instrumentation labs use a variety of control techniques and may include RSLogix500, DeviceNet, and Panel Builder. The labs are self-paced but students should expect to spend 5-6 hours/week in the lab. Lectures are scheduled at a specific time every week. (15-90) *Equivalent to EMST-817, 91-207.*

ELT-745 Maintenance Shop Operations (3 s.h.)

The student is introduced to shop equipment generally found in the industrial maintenance environment. The student uses safe setup and produces parts with metal saws, drills, grinders, basic welding and cutting, thread repair, anchors and fasteners. The student use of mechanical prints to identify parts in assembly and repair situations is practiced, along with the use of catalogs to find and order repair parts, study of bearings and seals, applications, and failure analysis. (15-61) *Equivalent to 96-156, EMST-805.*

ELT-750 Facilities Maintenance (3 s.h.)

Prerequisite: ELT-210, Motor Control Circuits. The student studies topics specific to maintenance of facilities. Topics include project estimating issues including installation, cost, and time. The student reads building schematics and blueprints, studies the fundamentals of HVAC with lab exercises, and researches construction issues including sprinkler, electrical, and plumbing systems. Field trips provide a general compare and contrast of industry facility maintenance systems. (45-0) *Equivalent to 96-155, EMST-820.*

ELT-790 Fluid Power (3 s.h.)
Prerequisite/Corequisite: MAT-770, Applied Math, and MAT-771, Applied Math II. Students gain knowledge and hands-on experience with hydraulic and pneumatic components and circuits; the transmission of force through fluids; conversion of force to pressure; the control of power and systematic methods of troubleshooting and testing hydraulic and pneumatic systems. This is an instructor-supervised/student-paced format. The student should expect to spend 5-6 hours per week in the Electromechanical Systems Technology Lab to complete the course. (15-65) *Equivalent to EMST-703, 92-118.*

ELT-895 Electromechanical Internship (2 s.h.)
Prerequisite: sophomore status in the Electromechanical Systems Technology Program and permission of internship coordinator. Supervised work experience in a business or industry, which normally is four weeks in duration. Work must be related to the major field of study; i.e., electricity/electronics, industrial maintenance, installation or service of control systems, etc. (0-160) Instructor's consent required. *Equivalent to EMST-801, 91-110.*

EMS-110 EMS First Responder (2 s.h.)
Prerequisite: At least 17 years of age at the time of enrollment. Proficient in writing, reading, and speaking English. Hold or eligible to obtain a driver's license. Physically and emotionally capable of performing basic emergency care skills. An emergency care course which emphasizes life-threatening emergencies, wounds, fractures, medical and environmental emergencies, and other emergency situations as outlined by the U.S. DOT. (20-26) *Equivalent to EMSS-100, 89-170.*

EMS-220 EMT Basic I (4 s.h.)
Prerequisite/Corequisite: Be at least 17 years of age at the time of enrollment. Be proficient in writing, reading, and speaking English. Hold or be eligible to obtain a current driver's license. Be physically and emotionally capable of performing basic emergency care skills. Current certification at the Basic Cardiac Life Support Health Care Providers Course with the American Heart Association. Physical examination required prior to beginning hospital clinicals with immunizations and hepatitis B vaccine or waiver. This class provides the student with the necessary knowledge and skill to perform basic emergency care and transport. It includes an introduction/preparation module, airway management module, patient assessment module, medical/behavioral emergencies module, and obstetrical/gynecological emergencies module. Six hours of clinical in the hospital is also included. (47-24-6) *Equivalent to 89-195, EMSS-101.*

EMS-224 EMT Basic II (2 s.h.)
Prerequisite/Corequisite: Be at least 17 years of age at the time of enrollment. Be proficient in writing, reading, and speaking English. Hold or be eligible to obtain a current driver's license. Be physically and emotionally capable of performing basic emergency care skills. Current certification at the Basic Cardiac Life Support Health Care Providers Course with the American Heart Association. Physical examination required prior to beginning hospital clinicals with immunizations and hepatitis B vaccine or waiver. Must have completed EMT Basic I (EMS-220). This class is a continuation of EMT Basic I. It includes a trauma module, infants and children module, and operations module. Twelve hours of clinical in the hospital is also included. (20-14-12) *Equivalent to 89-196, EMSS-102.*

EMS-411 EMT-P: Part I (6 s.h.)
Prerequisite: EMS-220, EMT Basic I, EMS-224, EMT Basic II, State of Iowa Certification. This course provides the student with advanced prehospital training. It includes roles and responsibilities, overview of human systems, emergency pharmacology, airway management, patient assessment, and trauma management (including PHTLS). (60-60) *Equivalent to EMSS-120, 89-171.*

EMS-412 EMT-P: Part II (7 s.h.)
Prerequisite: EMS-411, EMT-P: Part I. This course is a continuation of EMS-411, EMT-P: Part I. It includes respiratory, cardiac, diabetic, neurological, toxicological, abdominal, gynecological, behavioral, pediatric, geriatric and obstetrical emergencies. (71-69) *Equivalent to EMSS-121, 89-172.*

EMS-413 EMT-P: Part III (3 s.h.)
Prerequisite: EMS-411, EMT-P: Part I, and EMS-412, EMT-P: Part II. This course includes 68 hours of hospital clinical experience and 67 hours of field experience. (0-0-90-45) *Equivalent to EMSS-122, 89-173.*

EMS-414 EMT-P: PART IV (3 s.h.)
Prerequisite: EMS-411, EMT-P: Part I; EMS-412, EMT-P: Part II; EMS-413, EMT-P: Part III. This course includes 67 hours of hospital clinical experience and 68 hours of field experience. (0-0-45-90) *Equivalent to EMSS-123, 89-174.*

ENG-014A-D Mastery Writing (1-4 s.h.)
Prerequisite: Recommendation of current/previous instructor, college recommendation, or student request. The Mastery Writing course provides developmental writing instruction to students referred by orientation assessment or by instructor who require a competency-based approach to improving their writing skills. Emphasis is on writing as a process; students will learn strategies for recognizing and compensating for individual writing problems. Course work may include achieving mastery in three areas: language (grammar and mechanics), conceptual aspects (planning, style, content), and structure (organization, development, and support). Students' ability to succeed in a self-management style course will be assessed prior to approving registration in the course. Learning objectives include achievement on standardized tests and demonstrated mastery through writing samples for subsequent enrollment in writing courses. Credit may be repeated up to 8 hours. Credit will not satisfy the requirement for an Associate Degree. This course has been designated as a pass/no pass course. (5-20, 10-40, 15-60, 20-80)

ENG-015 Elements of Writing (4 s.h.)
A developmental writing course designed for students referred by orientation assessment or by instructors. Emphasis is on writing; students will learn strategies for recognizing and compensating for individual writing problems. Students complete the course by meeting the minimum entrance requirements for Composition & Speech I. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. This course has been designated as a pass/no pass course. (60-0) *Equivalent to ENGL-094, 30-090.*

ENG-046 Communications/Reading & Writing Enrich (4 s.h.)
Prerequisite: Consent of instructor. This Enrich course will focus on strategies that enable adult students to understand and apply reading skills to printed material, and to express ideas clearly and correctly in writing. Applications will be in daily life, at work, and in leisure activities. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. This course has been designated as a pass/no pass course. (60-0) *Equivalent to 30-048, ENRI-045.*

ENG-047 Communications/Reading & Writing Enrich II (4 s.h.)
Prerequisite: Consent of instructor. This Enrich course will focus on strategies that enable adult students to understand and apply reading skills to printed material and to express ideas clearly and correctly in writing. Applications will be in daily life, at work, and in leisure activities. Emphasis will be on decoding, vocabulary building, and writing. This course is designed to follow Communication Through Reading and Writing Enrichment, ENG-046 but may be taken without that prerequisite. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. This course has been designated as a pass/no pass course. (60-0) *Equivalent to 30-049, ENRI-046.*

ENG-102 Composition & Speech I (4 s.h.)
Improvement of skills in reading, writing, speaking, and listening, with an emphasis on expository methods of development and personal experience as supporting material. Students will use word processors and the Writer's Workbench analyses programs, the Writer's Workbench STEPS programs, and the structuring sentences video series. Students must meet minimum competency requirements in writing and speaking to receive a grade of C or higher. (60-0) *Equivalent to ENGL-101, ENGL-104, 30-101, ENG-105.*

ENG-103 Composition & Speech II (4 s.h.)
Prerequisite: ENG-102, Composition & Speech I. Students must have earned a C or higher grade in Composition & Speech I before enrolling in Composition & Speech II. A continuation of ENG-102, Composition & Speech I, with an emphasis on argumentative and persuasive writing and speaking, on research methods, and on language. Students will use word processors, Writer's Workbench analyses, Writer's Workbench STEPS, and sentence structuring videos. Students must meet minimum competency requirements in writing and speaking to receive a grade of C or higher. (60-0) *Equivalent to ENGL-102, 30-102, ENG-106, ENGL-105.*

ENG-105 Composition I (3 s.h.)
Improvement of skills in reading, writing, and listening with an emphasis on expository methods of development and personal experience as supporting material. Students may be requested to use word processors and the Writer's Workbench analyses programs, the Writer's Workbench STEPS programs, and the structuring sentences video series. Students must meet minimum competency requirements in writing to receive a grade of C or higher. (45-0) *Equivalent to ENGL-104, ENGL-101, 30-101, ENG-102.*

ENG-106 Composition II (3 s.h.)
Prerequisite: ENG-105, Composition I, or ENG-102, Composition & Speech I. Students must have earned a C or higher grade

in Composition I or Composition & Speech I before enrolling in Composition II. A continuation of ENG-105 Composition I, with an emphasis on argumentative and persuasive writing, on research methods, and on language. Students may be requested to use word processors, Writer's Workbench analyses, Writer's Workbench STEPS, and sentence structuring videos. Students must meet minimum competency requirements in writing to receive a grade of C or higher. (45-0) *Equivalent to ENGL-102, ENGL-105, 30-102, ENG-103.*

ENG-221 Creative Writing (3 s.h.)
Prerequisite: ENG-102, Composition & Speech I, or ENG-105, Composition I, or comparable course or approval of instructor. A practical workshop in writing and rewriting manuscripts in preparation for submitting for publication. Emphasis on nonfiction articles and short stories but also covers poetry, plays, and screenplays. (45-0) *Equivalent to 30-205, ENGL-205.*

ENG-701 Communications I (3 s.h.)
Study designed to assist students in improving and/or refining skills in the areas of reading, writing, listening, and speaking to help meet communication needs in college and for success and advancement in a career. (45-0) *Equivalent to 95-130, ENGL-701.*

ENG-702 Communications II (3 s.h.)
Prerequisite: ENG-701, Communications I or equivalent. Further study designed to assist students in improving and/or refining skills in the areas of reading, writing, listening, and speaking to help meet communication needs in college and for success and advancement in a career. (45-0) *Equivalent to 95-131, ENGL-702.*

ENV-110 Environmental Science (3 s.h.)
The study of ecological principles and the interrelationships among populations, resources, and pollution in developing a sustainable society. Lecture and laboratory-based topics include: population, ecology, soil, water, land, air, and energy resources, plus air, water, soil, and waste management. Environmental decision-making strategies to resolve current and future environmental issues are stressed. (30-30) *Equivalent to ENVR-101, 70-104.*

FIN-101 Principles of Banking (3 s.h.)
Fundamental bank functions presented in a descriptive fashion so that the beginning banker may view the chosen profession in broad (and operational) perspective. (45-0) *Equivalent to 15-170, BUSN-140.*

FIN-210 Analysis and Valuation of Stocks (1 s.h.)
The Analysis and Valuation of Stocks is a comprehensive course designed to provide you with conventional and advanced techniques in researching and valuing stocks. Starting off with the basics, you will learn how to read financial statements and calculate financial ratios, and then move on to perform industrial comparisons, value stocks, and conduct economic and industrial research. This course is taught in a manner that uses everyday language, simple, yet insightful analogies, and a just-the-facts attitude that you will understand and appreciate. By the end of this course, you will have a strong foundation in the analysis and valuation of stocks. This course has been designated as a pass/no pass course. (5-20) *Equivalent to 15-272, BUSN-250.*

FIN-214 Stocks, Bonds, and Investing: Oh My! (1 s.h.)

Stocks, Bonds, and Investing: Oh My! emphasizes preemptive planning for a financial account by comprehending financial markets through identifying how financial markets operate. This course has been designated as a pass/no pass course. (5-20) *Equivalent to 15-247, BUSN-255.*

FIR-155 Fire Protection Technology (4 s.h.)

This course will familiarize the student with the different types of building construction as they relate to fire protection. Also covered will be: private fire protection systems, municipal water systems, state and local codes. (65-15) *Equivalent to 70-115, FIRE-102.*

FIR-184 Hazardous Material Technician (3 s.h.)

This course will be oriented toward preparing emergency response team members to perform advanced control, containment, and/or confinement operations; understand hazard and risk assessment techniques; know how to identify materials using field response plan; understand the various roles within the incident command system; properly identify, select, and use specialized chemical protective clothing; and perform decontamination activities on personnel equipment. (30-30) *Equivalent to 70-116, FIRE-103.*

FIR-210 Incident Command System (1 s.h.)

This course is designed to meet the needs of fire officers and managers with responsibilities to use, deploy, implement, and/or function within an incident command system. This program addresses the need for incident management systems, an overview of the structure and expandable nature of ICS, and understanding of the command skills needed by department officers to effectively use ICS guidelines, and scenario practice. (15-0) *Equivalent to 70-117, FIRE-104.*

FIR-231 Fire Behavior/Investigation (4 s.h.)

This course is designed to assist in training firefighters and fire officers to properly determine the origin and cause of fire. (45-35) *Equivalent to 70-113, FIRE-101.*

FIR-281 Fire Instructor I (2 s.h.)

This course develops the participants' attitudes, knowledge, skills, and abilities to effectively implement and manage tactical operations. Develop a basic understanding of fire fighting strategies and tactics. (24-24) *Equivalent to 70-119, FIRE-105.*

FLS-141 Elementary Spanish I (4 s.h.)

Designed for students with little or no previous study of Spanish. Focus is on acquainting the student with fundamentals, including pronunciation, basic grammar needed to express activities in the present and near future. Basic vocabulary will be learned to enhance speaking, listening, writing, and reading skills. Increase global awareness by video shorts and short readings. (45-30) *Equivalent to 35-110, SPAN-101.*

FLS-142 Elementary Spanish II (4 s.h.)

Prerequisite: FLS-141, Elementary Spanish I or minimum of one year of high school Spanish. Designed as a continuation of Elementary Spanish I. Focus is on reinforcing students' knowledge in fundamentals, including pronunciation, basic grammar needed to express activities in the present and near future. Basic vocabulary will be learned to enhance speaking, listening, writing, and reading

skills. New grammar includes being able to communicate in the past tenses, and giving commands for common verbs. Students are expected to use as much Spanish as possible with classmates and the instructor. (45-30) *Equivalent to 35-111, SPAN-102.*

FLS-241 Intermediate Spanish I (4 s.h.)

Prerequisite: FLS-142, Elementary Spanish II or minimum of two years of high school Spanish. Designed as a comprehensive grammar review, composition, and speaking course. Builds on aural-oral skills, increased vocabulary, and reading short pedagogical (using vocabulary and grammar students are familiar with) stories and authentic language literature. (45-30) *Equivalent to 35-211, SPAN-201.*

FLS-242 Intermediate Spanish II (4 s.h.)

Prerequisite: FLS-241, Intermediate Spanish I or minimum of three years of high school Spanish with instructor approval. Designed as a comprehensive grammar review, composition, and speaking course. Builds on aural-oral skills, increased vocabulary, and reading short pedagogical stories and authentic language literature. (45-30) *Equivalent to 35-212, SPAN-202.*

FLS-261 Advanced Spanish I (3 s.h.)

Prerequisite: FLS-242, Intermediate Spanish II; or four years of high school Spanish with instructor approval. Students will become more comfortable speaking by Q & A, impromptu speaking. Reading skills will be enhanced by reading original short stories and cultural and historical selections from the text. Use of visual aids, video shorts, speaking, and reading will increase vocabulary competency. Grammar study and activities will increase language accuracy and expression. Use of exams will be limited; students will be graded on in-class discussion and homework completion. Students will at times use the Internet to find and interpret articles from Hispanic newspapers. A final oral (optional) and written evaluation will determine the student's progress in the above-mentioned areas. (30-30) *Equivalent to 35-260, SPAN-260.*

FLS-262 Advanced Spanish II (3 s.h.)

Prerequisite: FLS-261, Advanced Spanish I, or four satisfactory years of high school Spanish with instructor approval. Students are expected to maximize their use of Spanish in the classroom. Guided dialogs as well as extemporaneous speaking will increase fluency. Original texts from various Hispanic countries will be used to gain cultural understanding, vocabulary, and provide topics for classroom discussion. By end of semester, students should be able to express themselves in speech and writing using all verb tenses. Short creative writings will be done. Articles from Hispanic countries will be used to expose students to a wide range of events and cultural differences. The use of contemporary music and videos will enhance student listening comprehension. Limited use of tests will be used along with in-class participation and out-of-class work to evaluate student progress. This semester's reading will include one drama, "En la ardiente oscuridad." Mexican movies, such as "El Mariachi" and "El Profe (Cantinflas)", will be viewed for which students will write a summary. Projects may include transcription of a song or video segment, or researching a topic of a current event in a Hispanic country. Every student should demonstrate improvement in all four skills--reading, writing, listening, and speaking. (30-30) *Equivalent to 35-261, SPAN-261.*

GEO-124 Regional Geography of the Nonwestern World (3 s.h.)

A regional study of the physical and cultural spatial patterns of Middle America, South America, North Africa/Southwest Asia, South Asia, East Asia, Southeast Asia and the Pacific World. (45-0) *Equivalent to GEOG-103, 80-152.*

GEO-125 Regional Geography of the Developed World (3 s.h.)

A regional study of the physical and cultural spatial patterns of Europe, Australia, Russia, and Anglo-American. (45-0) *Equivalent to GEOG-102, 80-151.*

GEO-131 Physical Geography (3 s.h.)

An introductory systems course in physical geography that acquaints the student with the spatial relationships that exist between man and his physical environment. (45-0) *Equivalent to GEOG-101, 80-150.*

GRA-108 Visual Communication (3 s.h.)

Prerequisite: CIS-210, Web Development I, or permission of the instructor. Visual Communication is an introduction to visual problem solving and communication. This course will cover basic technical terminology, an overview of software and equipment for web and graphic design and an introduction into digital imagery. The goal is to expand student competency in basic visual and technical skills, developing and understanding of how perception relates to communication and expose students to current issues related to design. (45-0) *Equivalent to 15-201, ECOM-115.*

GRA-123 Principles of Illustration (3 s.h.)

Prerequisite: ART-120, Two-Dimensional Design, and ART-133, Drawing. This course will emphasize the research and conceptual development skills needed to complete successful illustrations for publications in print or on the web. It will explore the various techniques used by contemporary illustrators, including traditional methods such as drawing and painting as well as digital processes. This course will require students to have good drawing skills and basic skills in painting. Skills in digital illustration programs such as Adobe Illustrator and Photoshop will also be developed. (45-0)

GRA-134 Digital Photography (3 s.h.)

Digital photography has rapidly become a critical part of journalism, graphic design, web-site design, and fine art. This course covers the anatomy of the digital camera and what features to look for before you buy, how to compose quality photos in a digital environment, adjusting/modifying photos on the computer using Adobe Photoshop, and preparing photos for use in printed materials and on the Internet. (45-0) *Equivalent to ART-186*

GRA-158 Web Multimedia (3 s.h.)

An introduction to the creation of multimedia for use with Web pages, kiosks, and CD/DVD. Video camcorders, digital cameras, digital recorders, touch screens, and iPods will be utilized in conjunction with computer hardware and software for media creation and manipulation. Media covered in the course will include podcasting, streaming video, streaming audio, live broadcasts, and presentations. (45-0)

GRA-166 Web Animation (3 s.h.)

Prerequisite: GRA-108, Visual Communication, or permission of instructor. Animation can be an important part of information transfer from a Web site to the viewer. Topics will include when

animation is an appropriate tool to use, when animation should be avoided, what tools are the current standard for Web animation, and how animation can be used to present information. The class will be project-based, with the student solving animation-related problems based on real business situations. Students will be expected to animate their solutions using current software. Animations will be judged on their completeness, correctness, and professionalism. (45-0) *Equivalent to 15-206, ECOM-205.*

GRA-173 Typography (3 s.h.)

Prerequisite: ART-115, Graphic Design, or permission of instructor. Because type takes the place of the spoken word in many forms of visual communication, it is critical that it be understood. This course introduces the student to the history and principles of good typographic design and how these principles can be used effectively in all forms of communication that depend on the printed word, including web design, publication design and advertising design. (45-0)

GRA-194 Design Studio Applications (3 s.h.)

Prerequisite: ART-115, Graphic Design, and GRA-108, Visual Communication. Building upon the knowledge gained throughout the design program, this capstone course takes students into the field to address real graphical problems for non-profits in the community. Students will meet with representatives of the organization to determine need, address the need in a professional manner that solves the client problem, and complete the process through printed or electronic media. (45-0)

GRA-299 Electronic Portfolio (3 s.h.)

Electronic Portfolio will help prepare the student for the next step, whether that is moving into the work force or presenting to the teachers at a four-year institution. Skills taught in this class will include final touches to the electronic portfolio, career-advancement skills, resume writing, and interviewing. Student will be expected to present themselves as professionals in various ways, including speaking to members of the business community and various members of the NIACC staff. The course culminates in a formal presentation of the electronic portfolio to staff and business people. (30-30) *Equivalent to 15-220, ISTS-250.*

GRA-761 Dreamweaver Basics (1 s.h.)

Adobe Dreamweaver CSA is an industry-standard website development tool. This course will focus on learning the tool correctly through the use of recorded demonstrations of actual product usage. Develop new skills or learn about the latest release in this online course. (15-0)

GRA-762 Flash Basics (1 s.h.)

Adobe Flash CSA is an industry-standard animation tool. This course will focus on learning the tool correctly through the use of recorded demonstrations of actual product usage. Develop new skills or learn about the latest release in this online course. (15-0)

GRA-763 Fireworks Basics (1 s.h.)

Adobe Fireworks CSA is a powerful prototyping tool for generating web sites and application interfaces. This course will focus on learning the tool correctly through the use of recorded demonstrations of actual product usage. Develop new skills or learn about the latest release in this online course. (15-0)

- GRA-764 Illustrator Basics** (1 s.h.)
Adobe Illustrator CSA is an industry-standard vector-based drawing tool. This course will focus on learning the tool correctly through the use of recorded demonstrations of actual product usage. Develop new skills or learn about the latest release in this online course. (15-0)
- GRA-765 InDesign Basics** (1 s.h.)
Adobe InDesign CSA is an industry-standard page layout tool. This course will focus on learning the tool correctly through the use of recorded demonstrations of actual product usage. Develop new skills or learn about the latest release in this online course. (15-0)
- GRA-766 Photoshop Basics** (1 s.h.)
Adobe Photoshop CSA is the industry-standard in photography and graphic image creation. This course will focus on learning the tool correctly through the use of recorded demonstrations of actual product usage. Develop new skills or learn about the latest release in this online course. (15-0)
- HCM-103 ServSafe Food Safety** (1 s.h.)
ServSafe is nationally recognized and accepted by more federal, state, and local jurisdictions than any other food safety training program. The course includes latest science-based information and industry best practices. It incorporates new manager job task analysis--tasks that industry, academic and regulatory experts deem essential to the role of food service professionals who are responsible for ensuring an operation is serving safe food. It equips future managers with food safety knowledge they can share with their employees. (15-0) *Equivalent to FOOD-703, 90-248.*
- HCM-135 Food Production** (4 s.h.)
Professional cooking is a course designed to provide a foundation for students in developing their cooking competence. This course will show students what they need to know and how to cook in order to manage restaurant and food service operations. Units covered include cooking meats and game, poultry, fish, seafood, vegetables, and salads. (45-30)
- HCM-205 Dinner and Front of the House** (3 s.h.)
Prerequisite: HCM-135, Food Production. This is a capstone, project-driven course where all of the students will complete the entire planning process and execution of a formal dinner event. (15-60) *Equivalent to FOOD-802, 90:257.*
- HCM-232 Culinary Nutrition** (2 s.h.)
Provides up-to-date information on nutrition and diet. This course covers topics about biotechnology, vitamins, minerals, and organic foods. The course presents a broad range of facts on the nutritional value of foods, as well as coverage on the nutritional value of foods from other parts of the world. (30-0) *Equivalent to FOOD-704, 90-249.*
- HCM-236 Culinary Arts and Book of Yields** (2 s.h.)
This course will provide students with an introduction to chefs' technical references to inventory and portion control. (30-0)
- HCM-239 Customer Service** (2 s.h.)
The course will introduce students to all aspects of customer service in the hospitality industry. In addition, the course will assist each student in developing a proper customer service attitude, while taking them through activities to meet the high standards of customer service. (30-0)
- HCM-283 Controlling Food Service Costs** (2 s.h.)
Provide students with a wide-ranging knowledge and specific solutions they need to keep costs low and margins high. Provide instruction in food and beverage sanitation, production, and service methods. (30-0)
- HCM-325 Human Resources Management & Supervision** (2 s.h.)
This course provides skills-based information in a clear and logical way, covering all of the essential topics and responses to the changing needs of the hospitality supervision industry today. (30-0) *Equivalent to 90-246, FOOD-701.*
- HCM-607 Hospitality & Restaurant Management** (2 s.h.)
Hospitality marketing is the performance of business activities that direct the flow of goods and services from product to consumer. The marketing role in a hotel or restaurant is concerned about understanding customer needs, creating a product-service mix that satisfies these needs. (30-0) *Equivalent to 90-251, FOOD-706.*
- HCR-115 Residential Heating Systems** (4 s.h.)
Corequisite: ELT-115, Electronic Concepts, or instructor's permission. The purpose of this course is to introduce the student to the various types of residential heating systems. Areas and concepts covered include combustion theory, basic air distribution, furnace construction, filters, humidifiers, installation techniques, and maintenance procedures. (30-105) *Equivalent to 96-128, HVAC-701.*
- HCR-150 Commercial Heating Systems** (5 s.h.)
Prerequisite: HCR-115, Residential Heating Systems, or instructor's permission. This course covers large heating systems used in commercial, institutional, and industrial applications. Types of equipment include hot water and low-pressure steam boilers and rooftop heating units. (30-135) *Equivalent to 96-230, HVAC-803.*
- HCR-155 Troubleshooting Heating Systems** (3 s.h.)
Prerequisite: ELT-115, Electronic Concepts, or instructor's permission. The purpose of this course is to introduce the student to the fundamentals of troubleshooting by utilizing a practical and systematic approach to locate and repair heating system malfunctions. The student will also have the opportunity to study, in detail, the motors and controls used in today's heating systems. Topics to be covered include basic electric circuits, electrical test meters, motors and controls, diagnosis of electrical and mechanical malfunctions, and special emphasis on writing diagrams. (15-90) *Equivalent to 96-129, HVAC-702.*
- HCR-205 Air-Conditioning Principles** (2 s.h.)
A study of the theory of air-conditioning. Includes psychometrics, heat gain/loss problems, and equipment sizing. (15-45) *Equivalent to 96-134, HVAC-710.*
- HCR-210 Residential Air-Conditioning Systems** (4 s.h.)
Prerequisite: ELT-115, Electronic Concepts, or instructor's permission. The purpose of this course is to introduce the student to the various types of residential air-conditioning and heat pump systems. Areas and concepts covered include refrigeration, air-conditioning, heat pump theory, heat pump construction, installation techniques, and maintenance procedures. (30-105) *Equivalent to 96-138, HVAC-711.*
- HCR-235 Commercial Air-Conditioning Systems** (5 s.h.)
Prerequisite: HCR-210, Residential Air-Conditioning Systems, or instructor's permission. This course covers large cooling systems used in commercial, institutional, and industrial applications. Types

of equipment include water chillers, multistage reciprocating units, and an introduction to absorption systems. (30-135) *Equivalent to 96-234, HVAC-812.*

HCR-240 Troubleshooting Air Conditioning Systems (3 s.h.)

Prerequisite: ELT-115, Electronic Concepts, or instructor's permission. The purpose of this course is to introduce the student to the fundamentals of troubleshooting by utilizing a practical and systematic approach to locate and repair air-conditioning and heat pump system malfunctions. The student will also have the opportunity to study, in detail, the motors and controls used in today's air-conditioning and heat pump systems. Topics to be covered include basic electric circuits, electrical test meters, motors and controls, diagnosis of electrical and mechanical malfunctions, and special emphasis on wiring diagrams. (15-90) *Equivalent to 96-139, HVAC-712.*

HCR-510 Sheet Metal Fabrication (2 s.h.)

Prerequisite: HCR-115, Residential Heating Systems. Use of selected sheet metal tools, layout, cutting, forming, and assembly of sheet metal as well as soldering and brazing processes. (15-45) *Equivalent to 96-140, HVAC-802.*

HCR-705 Technical Graphics (2 s.h.)

Prerequisite: HCR-150, Commercial Heating Systems. A development of blueprint skills students will need to interpret and sketch various drawings including construction, mechanical, pneumatic, electrical, plumbing, and duct patterns. Students will use simple sketching aids and appropriate templates to aid them in their development of drawings. The end result of these efforts will be the understanding of graphic drawings as a means of communicating information in their field of work. (30-0) *Equivalent to HVAC-801, 91-124.*

HCR-806 Controls I (3 s.h.)

Prerequisite: HCR-115, Residential Heating Systems. Major emphasis is on four basic types of control systems: pneumatic, electronic, electro mechanical, and digital as applied to residential and commercial heating and air-conditioning practices. (30-60)

HCR-807 Controls II (3 s.h.)

Prerequisite: HCR-806, Controls I. This course presents a more advanced study of electrical controls and their applications and an introduction to electronics and the controls used in HVAC systems. (30-60)

HCR-923 Systems Design (3 s.h.)

Prerequisite: HCR-150, Commercial Heating Systems. This course utilizes the knowledge base students have gained throughout the program to create a heating and cooling system at either the residential or commercial level. (15-60)

HIS-112 Western Civilization: Ancient-Early Modern (4 s.h.)

A study of the major social, political, economic, cultural, and philosophical movements in the Western World from the beginning of civilization to 1648. (60-0) *Equivalent to HIST-201, 80-201.*

HIS-113 Western Civilization: Early Modern to Present (4 s.h.)

A study of the major social, political, economic, and philosophical movements in the Western World from 1648 to the present. (60-0) *Equivalent to HIST-202, 80-202.*

HIS-151 U.S. History to 1877 (3 s.h.)

A survey course covering the social, political, and economic history of American civilization from the Age of Discovery through Reconstruction. (45-0) *Equivalent to HIST-101, 80-140.*

HIS-152 U.S. History Since 1877 (3 s.h.)

A survey course covering the social, political, and economic history of the United States since 1877. (45-0) *Equivalent to HIST-102, 80-141.*

HIS-254 American Indian History (3 s.h.)

American Indian History is an ethnographic and historical survey of the social, cultural, and political systems developed by Native Americans north of Mexico, and the developing relationship of these systems with those of the European-Americans. Native religion and world view, agricultural and hunting practices, material culture, trade, diplomacy and political structures are examined, as are the mutual impact on both societies resulting from contact with and interaction between native North Americans and Europeans and their descendants. (45-0) *Equivalent to HIST-110, 80-144.*

HIS-257 African American History (3 s.h.)

The course chronicles the experience of African Americans in the history of the United States. Topics include African heritage, the slave trade, slavery in the Antebellum South, the Civil War and emancipation, the Jim Crow era, the birth of racial advancement organizations, the development of twentieth-century urbanization and nationalism, and the struggle for civil rights, political power and cultural expression from mid century to the present. (45-0) *Equivalent to HIST-111.*

HIT-210 Basic Medical Insurance & Coding (2 s.h.)

Prerequisites: HSC-120, Medical Terminology I and HSC-150, Body Structure and Function OR equivalent work experience OR permission from instructor. This course will provide the students with an overview of medical health insurance claims submission guidelines and basic coding procedures. In addition, the student will work through a number of relevant case studies. (30-0) *Equivalent to 15-250, OFFC-851.*

HIT-246 Coding I (ICD-9) (3 s.h.)

Corequisite: HSC-120, Medical Terminology I, and HSC-150, Body Structure and Function. Prerequisite: None. However, HIT-210, Basic Medical Insurance & Coding, or experience in medical coding is highly desirable. A study of the International Classification of Disease (ICD-9-CM) codes, using sample exercises and health records to develop skill and accuracy in coding guidelines required at health care settings. (45-0)

HIT-247 Coding II (CPT) (3 s.h.)

Prerequisite: HSC-120, Medical Terminology I; HSC-150, Body Structure and Function; HIT-246, Coding I, or experience in Medical Coding. This course is a continuation of the study of ICD-9-CM (Coding I) emphasizing its use for prospective payment. Course work focuses on acquiring advanced skills in coding disease and procedures and abstracting medical data. The study of CPT/HCPCS will be emphasized including advanced concepts of coding and payment methodologies. (45-0)

HIT-630 Medical Transcription I (3 s.h.)

This course is designed to simulate medical transcription practices used in a healthcare environment. The main objective is to provide the student with knowledge of the content and formats of medical documents and reports typically dictated in physicians' offices, hospital clinics, and hospital ancillary and support facilities. (15-60) *Equivalent to 15-249, OFFC-852.*

HIT-631 Medical Transcription II (3 s.h.)

Prerequisite: HIT-630, Medical Transcription I. This course is designed to introduce students to hospital dictation. The students will progress through various levels of dictation including some advanced documents. (15-60) *Equivalent to 15-256, OFFC-853.*

HIT-632 Medical Transcription III (3 s.h.)

Prerequisites: HIT-630, Medical Transcription I. This course is designed to introduce students to live medical dictation from the clinical and radiology settings. The students will also be applying the issues of confidentiality and using medical reference books. (15-60) *Equivalent to 15-265, OFFC-854.*

HSC-120 Medical Terminology I (3 s.h.)

Introduction of basic medical terminology utilizing a programmed, word-building system to learn word parts to construct and analyze new terms. Emphasis is placed on spelling, definition, usage, and pronunciation. (45-0) *Equivalent to 15-251, HEAL-110.*

HSC-121 Medical Terminology II (3 s.h.)

Prerequisite: None. However, HSC-120, Medical Terminology I is highly desirable. A continuation of HSC-120. A brief review of basic medical terminology followed by a systems approach to learning terms associated with the anatomical, physiological, and pathological aspects of the body. (45-0) *Equivalent to 15-252, HEAL-111.*

HSC-144 Basic Pharmacology (2 s.h.)

Provides a basic foundation of the study of drugs including general concepts, biological factors affecting the action of drugs, and effects of medications on body systems. Includes allergy overview, the medication order, and discussion of legal and ethical issues related to pharmacology. (30-0) *Equivalent to 90-134, HEAL-701.*

HSC-150 Body Structure and Function (4 s.h.)

A basic study of the anatomy and physiology of the human body. Study progresses from the cell to tissues, organs, and systems with emphasis on their interrelatedness. Discussion includes some of the alterations that occur in illness. Usage of applicable medical terminology is stressed. (45-30) *Equivalent to 94-104, HEAL-704, HSC-150L.*

HSC-155 Laboratory Tests (2 s.h.)

To familiarize the student with clinical laboratory tests and their normal ranges in the areas of hematology, urology, and microbiology. The student will also learn basic surgical position terminology, instruments, and special organ studies. (30-0) *Equivalent to 90-140, HEAL-702.*

HSC-158 Introduction to Health Professions (1 s.h.)

This course provides a brief historical view of health care in addition to an overview of today's health care delivery systems and related health care issues. Ethical/legal issues and desirable professional

skills and behaviors associated with health care workers are also addressed in this course. Research of specific health careers in health care agencies is also a requirement. This course has been designated as a pass/no pass course. (15-0)

HSC-171 Nurse Aide Theory (2 s.h.)

Corequisite: HSC-174, Nurse Aide Clinical. This 75-hour nurse aide course has been designed to meet the training requirements of The Omnibus Budget Reconciliation Act of 1987 (OBRA) for aides working in nursing facilities (NF) and skilled nursing facilities (SNF). Emphasis in the course is on students achieving a basic level of knowledge and demonstrating skills to provide safe, effective resident care. The course has been developed in six units of study. The theory portion includes 30 hours of classroom time and 15 hours of laboratory practice. (30-0) *Equivalent to CNAS-101, 89-164.*

HSC-174 Nurse Aide Clinical (1 s.h.)

Corequisite: HSC-171, Nurse Aide Theory. The clinical experience includes 30 hours in a nursing facility. (0-45) *Equivalent to CNAS-102, 89-165.*

HSC-179 Medication Aide (3 s.h.)

Prerequisites: Must be employed in: (1) a certified nursing facility - minimum of 6 months employment by facility sponsor, must be on State Direct Care Workers Registry, provide documentation from administrator of facility in which he/she is employed; OR (2) a residential or related type of licensed facility - minimum of 6 months employment by facility sponsor, evidence of successful completion of residential attendant course, provide documentation from administrator of facility in which he/she is employed; OR (3) an assisted living program - provide documentation from administrator of facility in which he/she is employed, strongly recommended to have completed 75-hour Nurse Aide Course or Residential Attendant Course. Must also have an aptitude for reading, writing, and mathematics. This is a 60-hour course consisting of 42 hours of classroom lecture and 18 hours of clinical experience. This course prepares people to safely administer nonparenteral medications in nursing facilities and related areas. The emphasis is on safe administration of medications. It qualifies the aide to administer medications in long term care, residential care, nursing facilities, skilled nursing facilities, adult day care and assisted living facilities. (42-18)

HSC-185 Activity Coordinator (4 s.h.)

A 60-hour course designed to prepare the participant to function as an entry level activity coordinator in a long-term care facility. This course is designated as pass/no pass. (60-0)

HSC-290 Supervising in Healthcare (3 s.h.)

Prerequisite: Must be current RN or LPN. This program is designed to enable the nurse to gain knowledge and develop skills necessary to manage personnel and clients in health care facilities. The program focuses on supervisory skills for nurses in long-term care. This course is designated as pass/no pass. (45-0)

HSV-152 Introduction to Counseling (3 s.h.)

Prerequisite: PSY-121, Developmental Psychology, SOC-110, Introduction to Sociology, and SOC-150, Introduction to Human Services. A survey of the basic theories and techniques of psychological counseling. This is a required course leading to the A.A. degree with a certificate in Human Services. (45-0)

HSV-153 Professional Ethics (3 s.h.)
Prerequisite: PSY-121, Developmental Psychology, SOC-110, Introduction to Sociology, and SOC-150, Introduction to Human Services. An in-depth study of ethical perspectives or a selected area of moral concern. Possible topics include bioethics; business and professional ethics; queer ethics; science, technology, and society; sexual ethics; and comparative religious ethics. This is a required course leading to the A.A. Degree with a certificate in Human Services. (45-0)

HUM-115 Encounters in Humanities (2 s.h.)
This course is designed to introduce students to the world of the humanities; describe the humanities genres and disciplines; provide a systematic method of assessing humanities artifacts; present opportunities to assess humanities artifacts; define methods of participating in the humanities. Four humanities genres are represented with their respective disciplines. (15-30) *Equivalent to 10-100, HUMA-100.*

HUM-139 British Life and Culture (3 s.h.)
Through NIACC's participation in the Iowa Community College Study Abroad Consortium, students have the opportunity for foreign study while remaining full-time NIACC students. Currently, the program is offered in London during the fall semester. British Life and Culture is a mandatory Humanities offering. On this program, students have the opportunity to earn 12 or more credit hours. Instructor's consent required. *Equivalent to HUMA-157, 89-157.*

IND-220 Metal Processing/Metallurgy (2 s.h.)
The student uses basic hand tools, drills, measuring tools, lathes, grinders, and welding equipment to build parts with practical applications in automotive service. (15-30) *Equivalent to INDU-705, 98-161.*

JOU-115 Introduction to Journalism (3 s.h.)
Introduction to Journalism is designed to help the student understand the role of the media in a democracy and how that role is accomplished. The student will also improve communication skills because the course stresses the fundamentals of news gathering, news writing, editing, and publication design. Students will have the opportunity to gain practical experience in news writing and interviewing. The course will stress print media. (45-0) *Equivalent to 30-121, JOUR-101.*

JOU-121 News Writing and Reporting (3 s.h.)
Prerequisite: JOU-115, Introduction to Journalism, and ability to type. News Writing and Reporting serves as a class designed to help the student improve his or her news gathering and reporting skills. Students will be expected to write stories for publication in *Logos*, the student news publication. Students will be expected to conduct interviews and utilize the computer programs used by the newspaper. (45-0) *Equivalent to 30-122, JOUR-102.*

JOU-145 Logos (1 s.h.)
Students may contribute to the student news publication, *Logos*, for 1-4 credits during their enrollment at NIACC. Credit may be earned through practical experience in reporting, photography, advertising, and other production-oriented work. Staff members are required to attend weekly staff meetings and meet a minimum number of contributions for a passing grade. (0-30) *Equivalent to 30-113, JOUR-113.*

LIT-101 Introduction to Literature (3 s.h.)
Prerequisite: ENG-102, Composition and Speech I, or ENG-105, Composition I, or comparable course or approval of instructor. An introduction to literature through major genres such as poetry, drama, and fiction. This course will focus on helping students develop skills for reading, interpreting, and critique through group discussion, oral presentation and writing. (45-0)

LIT-130 African American Literature (3 s.h.)
Prerequisite: ENG-102, Composition & Speech I, or ENG-105, Composition I, or comparable course or approval of instructor. A study of the writings of major African Americans from pre-Civil War to contemporary times. Slave narratives, autobiographies, letters, short stories, poetry, and novels will be studied as works of literature. Discussion and writing will focus on the critical analysis of the works. (45-0) *Equivalent to 30-203, LITS-103.*

LIT-131 Native American Literature (3 s.h.)
Prerequisite: ENG-102, Composition & Speech I, or ENG-105, Composition I, or comparable course or approval of instructor. A study of the writings of major American Indians from precontact with Europeans to contemporary times. Legends, autobiographies, letters, speeches, poetry, novels and short stories will be studied as works of literature. Discussion and writing will focus on the critical analysis of the works. (45-0) *Equivalent to 30-204, LITS-104.*

LIT-132 Women of Color (3 s.h.)
Prerequisite: ENG-102, Composition & Speech I, or ENG-105, Composition I, or comparable course or approval of instructor. A study of the writings of contemporary women of color from this country and around the world. Autobiographies, short stories, poetry, plays, essays, and novels will be studied. Discussion and writing will focus on the critical analysis of the works. (45-0) *Equivalent to 30-206, LITS-105.*

LIT-150 World Literature I (3 s.h.)
Prerequisite: ENG-102, Composition & Speech I or ENG-105, Composition I, or comparable course or approval of instructor. Readings are drawn from several of the world's great civilizations up to the 18th Century. This course emphasizes prose and poetry from the religious and secular traditions of the Far East, South Asia, the Ancient Mediterranean, Northern Europe, and Ancient and Medieval I Near East. (45-0) *Equivalent to 30-201, LITS-201.*

LIT-151 World Literature II (3 s.h.)
Prerequisite: ENG-102, Composition & Speech I, or ENG-105, Composition I, or comparable course or approval of instructor. Readings are taken from works of short story, poetry, novel, and drama from around the world. The course will primarily focus upon literature written from the early 18th Century to present. World Literature I is not required. (45-0) *Equivalent to 30-202, LITS-202.*

LIT-160 Short Story/Novel (3 s.h.)
Prerequisite: ENG-102, Composition & Speech I, or ENG-105, Composition I, or comparable course or approval of instructor. A study of selected works of fiction in the short story and novel as forms of literature. Discussion and writing emphasizing interpretation, critical analysis, and judgment/evaluation. (45-0) *Equivalent to 30-112, LITS-102.*

LIT-170 Poetry/Drama (3 s.h.)
Prerequisite: ENG-102, Composition & Speech I, or ENG-105, Composition I, or comparable course or approval of instructor. A study of selected works of poetry and drama as forms of literature. Discussion and writing emphasizing interpretation, critical analysis, and judgment/evaluation. (45-0) *Equivalent to 30-111, LITS-101.*

MAP-353 Clinical Procedures I (4 s.h.)
Assist physician with examinations and treatments, prepare patients for examinations and diagnostic procedures, administer first aid and CPR, maintain and use aseptic techniques, obtain and record patient data. Perform routine tests, autoclave instruments, and prepare sterile setups. If taking curriculum beyond a one-year period, this course should be taken during the final year of the curriculum. (45-30) *Equivalent to 90-141, MEDA-701.*

MAP-358 Clinical Procedures II (5 s.h.)
Prerequisite: MAP-353, Clinical Procedures I. A continuation of Clinical Procedures I with emphasis on pharmacology, administration of medications, electrocardiography and the circulatory system. Principles of radiography and nutrition. Collection and testing of laboratory specimens, including phlebotomy. If taking curriculum beyond a one-year period, this course should be taken during the final year of the curriculum. (45-75) *Equivalent to 90-142, MEDA-702.*

MAP-622 Medical Assistant Practicum (6 s.h.)
An eight-week term of practical experience in selected physicians' offices, clinics, or laboratories. It offers the students an opportunity to perform various clinical and office procedures under the supervision of the physician, nurse, and the instructor/coordinator. 225 clock hours are completed in the clinical setting. An additional 15 clock hours are completed on campus as a review for the national certification examination. This course has been designated as a pass/no pass course. (15-225) *Equivalent to 90-208, MEDA-720, MAP-616.*

MAS-111 Masonry Lab I (3 s.h.)
A basic course in brick, block, stone, and manufactured masonry products. Topics to be covered include terminology, safety, masonry tools, masonry materials, mortar mixing, basic masonry skills, and basic wall construction techniques. This course has been designated as a pass/no pass course. (0-90)

MAS-211 Masonry Lab II (3 s.h.)
Prerequisite: MAS-111, Masonry Lab I. This course provides a continuation of the masonry skills learned in Masonry Lab I. Topics include constructing walls, wall corners, window skills, openings, composite walls, and similar structures using a variety of brick, block, stone, and manufactured masonry products with bonds and materials. This course has been designated as a pass/no pass course. (0-90)

MAT-030 Enrich Math I (2 s.h.)
Prerequisite: Consent of instructor. This Enrich course will focus on strategies that enable students to understand and apply mathematics in their daily lives, at work, and in their leisure hours. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. This course has been designated as a pass/no pass course. (30-0) Instructor's consent required. *Equivalent to ENRI-047, 40-038.*

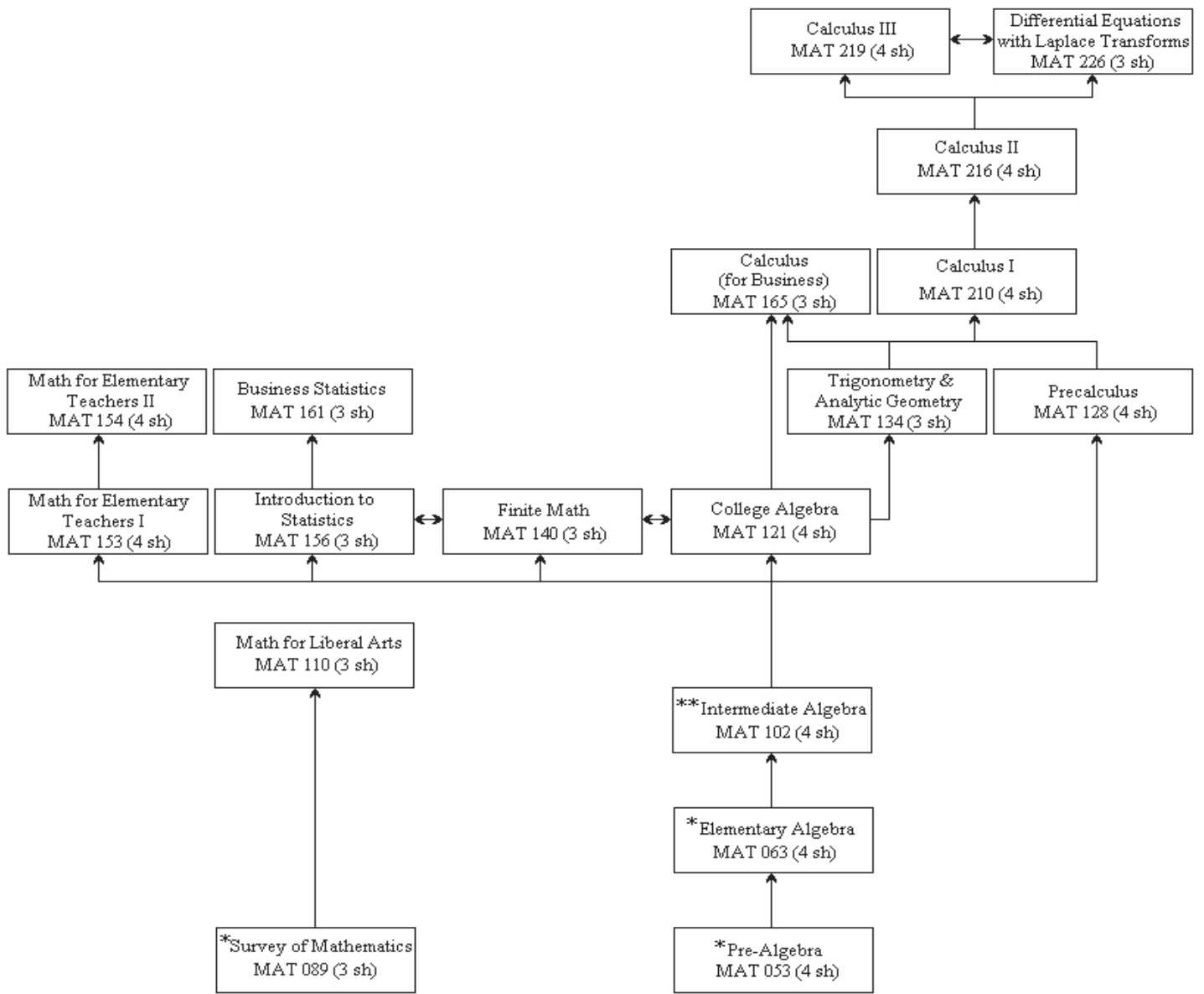
MAT-031 Enrich Math II (2 s.h.)
Prerequisite: Consent of instructor. This Enrich course will focus on strategies that enable students to understand and apply mathematics in their daily lives, at work, and in their leisure hours. Focus will be on decimals, fractions, and percents. The course is designed to follow Enrich Math I, but may be taken without that prerequisite. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. This course has been designated as a pass/no pass course. (30-0) Instructor's consent required. *Equivalent to 40-039, ENRI-048.*

MAT-044 Mastery Math (1, 2, 3, or 4 s.h.)
Prerequisite: Permission of course instructor or college recommendation. This course is intended for students who would benefit from a competency-based approach to increasing their math skills. Student's self-management will be assessed for suitability to the course format prior to approval for course registration. Learning objectives will include succeeding on a standardized test to meet placement requirements for a subsequent math enrollment. This course has been designated as a pass/no pass course. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. Credit may be repeated. (5-20, 10-40, 15-60, or 20-80)

MAT-053 Pre-Algebra (4 s.h.)
Prerequisite: A score of 15 or higher on the Prealgebra Pretest; COMPASS Prealgebra score of at least 25; or ACT score of at least 12. This course is intended to prepare students for an entry-level math course such as Elementary Algebra or Applied Math. The course covers basic computational skills with whole numbers, fractions, decimals, percentages, and integers. MAT-053 is a developmental course. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. (60-0) *Equivalent to MATH-040, 40-040.*

MAT-063 Elementary Algebra (4 s.h.)
Prerequisite: MAT-053, Pre-Algebra, with a grade of C or higher; OR COMPASS Pre-Algebra score of at least 49; OR ACT Math score of at least 16. This course is intended for students who have had no previous experience in algebra. Topics include: the real number system, linear and quadratic equations, exponents, factoring, rational expressions, graphing, systems of equations, radicals, the quadratic formula, square root manipulation, and application of concepts. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. (60-0) *Equivalent to 40-060, 40-119, MATH-060.*

MAT-089 Survey of Mathematics (3 s.h.)
Prerequisite: COMPASS Prealgebra score of at least 25 or ACT score of at least 12. This course is for students who are intending on taking Math for Liberal Arts. The course focuses on arithmetic skills without a calculator, college study skills, and an overview of topics from Math for Liberal Arts that include: problem solving, sets, algebra, number theory, percentages, statistics, and geometry. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. (45-0)



*No Credit towards degree
 ** Elective Credit only

**North Iowa Area Community College
 Mathematics Division
 Course Flow Chart**

MAT-102 Intermediate Algebra (4 s.h.)

Prerequisite: MAT-063, Elementary Algebra, with a grade of C or higher; or COMPASS Algebra score of at least 51; or ACT Math score of at least 20. This course will prepare the student for college algebra or other equivalent course work. Topics include properties of real numbers, linear and quadratic equations, graphs of polynomial functions, systems of equations, polynomials and rational expressions, inequalities, integral and rational exponents, radicals, and complex numbers. This course may not be used to satisfy core requirements. (60-0) *Equivalent to 40-120, MATH-100.*

MAT-110 Math for Liberal Arts (3 s.h.)

Prerequisite: MAT-089, Survey of Math, with a grade of C or higher; COMPASS Algebra score of at least 56 OR ACT Math score of at least 21. Math for Liberal Arts provides a survey of mathematics topics that includes sets, logic, statistics, number theory, geometry, critical thinking skills, metric system, and consumer math. This course will fulfill 3 hours of Natural Science requirement for the A.A. Degree. (45-0) *Equivalent to MATH-101, 40-121.*

MAT-121 College Algebra (4 s.h.)

Prerequisite: MAT-102, Intermediate Algebra with a C or better, OR Math ACT score of at least 21, or Compass Algebra score of 76 or better. This course is intended for students majoring in business, social science, biological sciences, liberal arts, and those mathematics students with insufficient background to begin the study of calculus. The course is a study of various classes of functions, their graphs, and applications. These include linear, polynomial, rational, root, inverse, exponential and logarithmic functions. Also included are systems of equations and inequalities, matrices, sequences and series, and the *Binomial Theorem*. (60-0) *Equivalent to MATH-121.*

MAT-128 Precalculus (4 s.h.)

Prerequisite: COMPASS College Algebra score of at least 41 or ACT math score of at least 26. This course is intended to provide students with a summary of mathematics topics needed to study analytic geometry and calculus. The functional approach is emphasized. Topics covered include fundamentals of algebra, polynomial, rational, exponential, logarithmic, and trigonometric functions, analytic trigonometry, systems of equations, and analytic geometry of conics. (60-0) *Equivalent to MATH-161, 40-161.*

MAT-134 Trigonometry and Analytic Geometry (3 s.h.)

Prerequisite: MAT-121, College Algebra with a C or better, OR Math ACT score of at least 26. This course is a preparation course intended for students majoring in engineering, mathematics, physics, chemistry or certain vocational fields. The course is a study of both trigonometric and conic functions and equations. Both rectangular and polar coordinate systems are studied. (45-0) *Equivalent to MATH-134.*

MAT-140 Finite Math (3 s.h.)

Prerequisite: MAT-102, Intermediate Algebra, with a grade of C or higher; or COMPASS Algebra score of at least 76; or ACT Math score of at least 21. This course provides a sampling of applied mathematical topics primarily in a business setting. Some topics covered include elementary functions, linear systems, matrices, linear programming, set theory, probability, and expected value. (45-0) *Equivalent to MATH-125, 40-125.*

MAT-153 Math for Elementary Teachers I (4 s.h.)

Prerequisite: MAT-102, Intermediate Algebra, with a grade of C or higher or ACT Math score of at least 20 or COMPASS Algebra score of at least 51. This course focuses on the fundamental concepts that all K-6 teachers will teach. Students will develop mathematical tools of reasoning, problem solving, and communication. Specific topics include rational numbers, operating with rational numbers, fractions and decimals, probability, and statistics. (60-0).

MAT-154 Math for Elementary Teachers II (4 s.h.)

Prerequisite: MAT-153, Math for Elementary Teachers I, with a grade of C or higher, or permission of instructor. This course focuses on the fundamental concepts that all K-6 teachers will teach. Students will develop mathematical tools of reasoning, problem solving, and communication. Specific topics include algebraic thinking, geometry, measurement, reasoning and proof, and technology in elementary classrooms. (60-0).

MAT-156 Introduction to Statistics (3 s.h.)

Prerequisite: MAT-102, Intermediate Algebra, with a grade of C or higher; or COMPASS Algebra score of at least 76; or ACT Math score of at least 21. This course is intended to introduce students to basic statistical concepts. It covers descriptive and inferential statistical methods, probability, hypothesis testing on the mean and proportion, and linear regression. Students are also introduced to technology as it applies to introductory statistical methods. A graphing calculator is required. (45-0) *Equivalent to STAT-104, 40-140.*

MAT-161 Business Statistics (3 s.h.)

Prerequisite: MAT-156, Introduction to Statistics, or by approval of instructor. Business Statistics looks at the use of statistical methods as an analytical tool in business situations. Data collection, sampling, data analysis, estimation, hypothesis testing, regression and correlation analysis, multinomial experiments and contingency tables, analysis of variance, and nonparametric statistics are covered. The use of calculators and statistical software is incorporated into the course. The course is intended to follow an introductory statistics course. A graphing calculator is required. (45-0) *Equivalent to 15-210, STAT-201.*

MAT-165 Calculus (3 s.h.)

Prerequisite: MAT-128, Precalculus, with a grade of C or higher; or MAT-121 College Algebra; or COMPASS College Algebra score of at least 41; or ACT Math score of at least 28. This course uses calculus techniques with an emphasis on applications to business, the social sciences, the life sciences, and also to certain career programs. Types of functions included in the course are polynomial, rational and root, exponential and logarithmic. Topics include derivatives and their uses, and integrals and their applications. A graphing calculator is required. (45-0) *Equivalent to 40-240, MATH-240.*

MAT-210 Calculus I (4 s.h.)

Prerequisite: MAT-128, Precalculus, with a grade of C or higher; or MAT-121, College Algebra and MAT-134, Trigonometry and Analytic Geometry, with grades of C or higher; or COMPASS Trigonometry score of at least 51; or ACT Math score of at least 28. Topics include analysis of functions, limits, derivatives and integrals of algebraic, logarithmic, exponential, and trigonometric functions, and applications of differentiation. (60-0) *Equivalent to 40-251, MATH-251.*

MAT-216 Calculus II (4 s.h.)
Prerequisite: MAT-210, Calculus I, with a grade of C or higher. This course is a continuation of MAT-210. Topics include applications of the definite integral; principles of integration evaluation; improper integrals; modeling with differential equations; and infinite sequences and series. (60-0) *Equivalent to 40-252, MATH-252.*

MAT-219 Calculus III (4 s.h.)
Prerequisite: MAT-216, Calculus II, with a grade of C or higher. This course is a continuation of MAT-216. Topics include graphs and analysis of the conic sections, polar coordinates and parametric equations, three dimensional space, vectors and vector-valued functions, partial derivatives, multiple integrals, and topics in vector calculus. (60-0) *Equivalent to 40-253, MATH-253.*

MAT-226 Differential Equations with Laplace Transforms (3 s.h.)
Prerequisite: MAT-216, Calculus II, with a grade of C or higher. Topics include analytic methods for solving first and second order ordinary differential equations, higher order linear differential equations (including Laplace Transforms) and systems of differential equations, numerical methods for approximating solutions of differential equations, and applications using differential equations. (45-0) *Equivalent to 40-261, MATH-261.*

MAT-710 Business and Financial Math (2 s.h.)
Mathematical applications that apply to a variety of business problems. Topics covered include mathematical fundamentals; accounting applications including banking, payroll, and taxes; figuring percentages related to commissions, discounts, and markups; business problems in credit and interest; business and personal insurance; inventory and turnover; financial statements; and employment tests. (30-0) *Equivalent to 90-105, MATH-701.*

MAT-770 Applied Math (2 s.h.)
Prerequisite: Compass Pre-Algebra score of at least 49; or ACT math score of at least 16; or MAT-053 Pre-Algebra, with a grade of C or higher. This course covers essential topics in algebra, including ratio and proportion, and basic statistics. This course is offered during the first eight weeks of the fall semester and the first eight weeks of the spring semester. (30-0) *Equivalent to MATH-710, 91-122.*

MAT-771 Applied Math II (2 s.h.)
Prerequisite: MAT-770, Applied Math, with a grade of C or higher. This course covers essential topics in geometry and trigonometry. This course is offered during the second eight weeks of the fall semester and the second eight weeks of the spring semester. (30-0) *Equivalent to MATH-711, 91-123.*

MFG-108 Computer-Aided Drafting (2 s.h.)
Prerequisite: MFG-120, Machine Trade Print Reading I; MFG-130, Machine Trade Print Reading II; or instructor's permission. Students are introduced to computer-aided drafting and design as an essential tool utilizing and enhancing the student's existing drafting skills. This is accomplished by utilizing ESPRIT through the generation of two- and three-dimensional orthographic drawings as well as pictorial techniques in the CAD environment. Operating systems commands, cursor manipulation, direct display interaction, geometry creation and manipulation, file storage and retrieval, entity manipulation such as rotation and mirroring, and the use of printers are just a few of the hardware and software capabilities to be covered. (15-30) *Equivalent to 96-270, TLDI-804.*

MFG-110 3-D Modeling (2 s.h.)
Prerequisite: MFG-108, Computer-Aided Drafting, or instructor's permission. Students are introduced to solid modeling as an essential tool, utilizing and enhancing designing skills. This is accomplished through the generation of 3-D drawings created in Solid Works. Operating systems commands, cursor manipulation, file storage and retrieval, entity manipulation, such as rotation, mirroring, editing, dimensioning, sections, sheet metal parts, and assemblies capabilities will be covered. (15-30) *Equivalent to 96-173, TLDI-805.*

MFG-120 Machine Trade Print Reading I (1 s.h.)
An introduction to the importance of prints in industry. Covers isometric drawings, orthographic projection, auxiliary views, detail and assembly drawing, dimensions and tolerances, and sectional views. Integrates the alphabet of lines and principles of sketching. Other information covered includes title blocks, drawing change systems, drawing notes, and material lists. (0-30) *Equivalent to 96-163, TLDI-701.*

MFG-130 Machine Trade Print Reading II (1 s.h.)
Prerequisite/Corequisite: MFG-120, Machine Trade Print Reading I. Continues Machine Trade Print Reading I with emphasis on geometric dimensioning and tolerancing and the interpretation of more advanced prints used in the construction of tool and die and mold building. (0-30) *Equivalent to 96-164, TLDI-702.*

MFG-195 Manufacturing Processes I (2 s.h.)
Knowledge and skills in manufacturing materials and the procedures used to produce products in today's modern industry. Introduction to measurement and quality assurance with an emphasis on tolerance, measurement, and calibration. Final project, create a product using manual metal cutting processes. (15-30) *Equivalent to INDU-715, 91-120.*

MFG-216 Survey of Machine Tool Practices I (4 s.h.)
The student safely uses basic measuring tools, machine tools, and layout/inspection tools. Emphasis is on turning machines, drills, and hand tools. Safety is taught and enforced as it applies to each machine process. Proper terminology of the machinist trade is emphasized. The student follows blueprints to produce products within tolerances specified. (15-90) *Equivalent to 96-180, TLDI-760.*

MFG-217 Survey of Machine Tool Practices II (4 s.h.)
Prerequisite: MFG-216, Survey of Machine Tool Practices I. Continues Survey of Machine Tool Practices I. The student safely uses basic measuring tools, machine tools, and layout/inspection tools. Emphasis on basic milling machines. Safety is taught and enforced as it applies to each machine process. Proper terminology of the machinist trade is emphasized. The student follows blueprints to produce products within tolerances specified. (15-90) *Equivalent to 96-181, TLDI-761.*

MFG-218 Survey of Machine Tool Practices III (4 s.h.)
Prerequisite: MFG-216, Survey of Machine Tool Practices I; MFG-217, Survey of Machine Tool Practices II. The student safely performs cylindrical grinder and surface grinder operations. Using the grinders, the student makes round and flat surfaces to conform to the specified tolerances. Emphasis is placed on safety, proper use of tools, and using correct terminology of the machinist trade. (15-90) *Equivalent to 96-182, TLDI-762.*

MFG-219 Capstone Manufacturing Project (4 s.h.)
Prerequisite: MFG-216, Survey of Machine Tool Practices I - Pass with a C or better; MFG-217, Survey of Machine Tool Practices II - Pass with a C or better; MFG-218, Survey of Machine Tool Practices III - Pass with a C or better; MFG-302, CNC Fundamentals - Pass with a C or better. The goal is for the learner to build an approved multiple-part project using machine tools and communicate the successes and difficulties encountered in the project-building process. (15-90) *Equivalent to 96-193, TLDI-763.*

MFG-245 Machine Theory & Operations I (9 s.h.)
Corequisite: MFG-120, Machine Trade Print Reading I, MAT-770, Applied Math, and MAT-771, Applied Math II. Covers theory and lab use of basic measuring and machining tools, layout inspection tools, as well as bench work. Safety is taught and enforced as it applies to each machine process. Proper terminology of the machinist trade is emphasized as well as following blueprints and holding tolerances through the use of a variety of machining processes to produce a product. (60-225) *Equivalent to 96-165, TLDI-703.*

MFG-248 Machine Theory & Operations II (7 s.h.)
Prerequisite: MFG-245, Machine Theory and Operations I; MAT-770, Applied Math; MAT-771, Applied Math II; MFG-120, Machine Trade Print Reading I. Corequisite: MFG-130, Machine Trade Print Reading II. Continues Machine Theory and Operations I. Covers more advanced principles in setup and operation of mills, lathes, and grinders, with an introduction to carbide tooling along with a continued emphasis on shop safety, communication, and cooperation. Stresses the interrelationship of manufactured mating parts. (45-195) *Equivalent to 96-166, TLDI-704.*

MFG-302 CNC Fundamentals (3 s.h.)
Prerequisite: MFG-245, Machine Theory and Operations I. Students must obtain a grade of C or better in MFG-248, Machine Theory and Operations II. Covers computer numerical control (CNC) as it relates to milling machines, turning lathes, microcomputers, and related software. Emphasis on input language, codes, machine set-up and operation, inspection of parts, and communication of peripherals. (30-30) *Equivalent to 96-167, TLDI-705.*

MFG-312 Advanced CNC (2 s.h.)
Prerequisite/Corequisite: MFG-459, Injection Mold Making. A continuation of CNC and EDM fundamentals as well as mold making with additional instruction and practice in the use of CAD, wire, and ram electrical discharge machines in the construction of die and mold components. (15-45) *Equivalent to TLDI-814, 96-275.*

MFG-320 Computer-Aided Manufacturing (3 s.h.)
Prerequisite/Corequisite: MFG-108, Computer-Aided Drafting, MFG-302, CNC Fundamentals, MFG-423, Jig and Fixtures, and MFG-380, EDM Fundamentals. Students must obtain a grade of C or better in MFG-302, CNC Fundamentals. This program provides an introduction to (Process Modeling) utilizing the CNC graphics programming system. Using engineering drawings, students program various parts for CNC mills, CNC lathes, and CNC EDM. Related topics include job planning, tool selection, construction of a process model, tool path verification, simulation, quality control, CAD, CAM data transfer, and CNC code generation. (15-60) *Equivalent to TLDI-811, 96-272.*

MFG-380 EDM Fundamentals (2 s.h.)
Prerequisite/Corequisite: MFG-302, CNC Fundamentals, and MFG-423, Jig and Fixtures. Students must obtain a grade of C or better in MFG-302, CNC Fundamentals. The students are introduced to the electrical discharge machines, both wire and ram-type. Emphasis on how these tools are used in the manufacturing of punch and die components and injection mold cores and cavities. (15-45) *Equivalent to 96-172, TLDI-803.*

MFG-408 Basic Die Making (8 s.h.)
Prerequisite/Corequisite: MFG-423, Jig and Fixtures. This course is a continuation of MFG-423, Jig and Fixtures with instruction and practice in building a progressive or compound die. Emphasis is placed on the tool building procedures learned in MFG-423, Jig and Fixtures and toward fabricating dies. Instruction is given on the considerations involved in developing die components, such as calculation of die clearances, bend allowance, cutting forces, press tonnage requirements, and practice in building a complete functional die. (45-225) *Equivalent to TLDI-810, 96-271.*

MFG-423 Jig and Fixtures (5 s.h.)
Prerequisite/Corequisite: Students must obtain a grade of C or better in MFG-302, CNC Fundamentals, and MFG-248, Machine Theory and Operations II. This course is an introduction to the design of industrial tools and machining characteristics of tool components. The student is introduced to additional machining skills that will be encountered in typical machine shops in the building of molds, dies, jigs, fixtures, and precision machine parts. (30-160) *Equivalent to 96-171, TLDI-802.*

MFG-459 Injection Mold Making (9 s.h.)
Prerequisite/Corequisite: MFG-408, Basic Die Making; MFG-460, Plastic Materials. The student is introduced to the field of mold making for plastic injection molds, blow molds, compression and transfer molds, zinc and aluminum die casting molds. Focus is placed on mold theory, mold repair, identification and correction of mold problems, standardization of mold components, mold blueprint reading, and the machine shop skills necessary for mold making, as related to thermoplastic injection molds. In addition the student develops necessary basic skills for gating, venting, heating, cooling, stoning and polishing as well as other hands-on experiences necessary to manufacture mold plates, cores, cavities, and ejection systems. The student builds a prototype injection mold. (45-285) *Equivalent to TLDI-813, 96-274.*

MFG-460 Plastic Materials (1 s.h.)
This is a survey course designed to introduce the student to the field of plastics. This overview includes thermoplastics and thermoset materials along with the major processing methods being utilized by industry today. (15-0) *Equivalent to TLDI-812, 96-273.*

MFG-500 Statistical Process Control (1 s.h.)
Covers the current transformation methods of industry and business toward a complete quality control system. Management theory on quality, productivity, and controlled charting techniques are included. (15-0) *Equivalent to 96-170, TLDI-801.*

MGT-101 Principles of Management (3 s.h.)
BUS-102, Introduction to Business, is recommended. Provides students with a general introductory management learning experience.

Role of management in today's business environment; management's influence on employee productivity, employee satisfaction and organizational effectiveness; major control devices of management. (45-0) *Equivalent to 15-142, BUSN-130.*

MGT-130 Principles of Supervision (3 s.h.)

This course is designed for individuals who hold, or who will hold, supervisory positions. The course involves the study of the major managerial functions (planning, organizing, staffing, directing, and controlling) and is augmented by other pervasive areas of supervision such as communication, motivation, decision making, and human relations. (45-0) *Equivalent to 15-144, BUSN-131.*

MGT-170 Human Resource Management (3 s.h.)

Course describes the transition from personnel management to human resources management. The focus is on the systematic process of recruitment, selection, development, and appraising employees. (45-0) *Equivalent to 15-149, BUSN-132.*

MGT-220 Introduction to Sport Management (3 s.h.)

For individuals entering the sport and physical education profession, it is critical to understand the theory and practice of ethical management principles in sport/fitness organizations. Administrators need to understand marketing, financial and legal aspects regarding the management of facilities, events, and organizations. These principles are applied to organizations within interscholastic, intercollegiate, international and professional sport along with the health/fitness and community recreation industries. (45-0) *Equivalent to 15-126, SPOR-101.*

MGT-221 Current Issues in Sport (3 s.h.)

Prerequisite: MGT-220, Introduction to Sport Management. Sport, health/fitness, and recreation organizations have been facing many changes in recent years. These changes have exposed many problems that these organizations must solve in order to ensure future success. This class is designed to expose students to these issues in order to prepare them for management careers in the sport, health/fitness, and recreation fields. (45-0) *Equivalent to 15-127, SPOR-120.*

MKT-110 Principles of Marketing (3 s.h.)

A study of the role of marketing in society as well as a study of target market (customer) determination and selection, product strategy, channels of distribution, pricing concepts, and promotional activities that are used in business today. (45-0) *Equivalent to 15-221, MRKT-101.*

MKT-140 Principles of Selling (3 s.h.)

This course involves the study of concepts and practices used by successful professional salespeople in today's market-driven economy. The course also includes a study of selling as a promotional strategy used by marketers. (45-0) *Equivalent to 15-223, MRKT-103.*

MKT-150 Principles of Advertising (3 s.h.)

The study of advertising process and its place in business and society. The course involves learning about the planning, creating and placement of advertising. The course also covers the topic of integrated promotion. (45-0) *Equivalent to 15-222, MRKT-102.*

MKT-160 Principles of Retailing (3 s.h.)

The study of the selling of goods and services to ultimate consumers, involving distribution, inventory control, site selection, pricing, and other topics pertinent to successful retail business operations. (45-0) *Equivalent to 90-125, RETL-701.*

MKT-170 Retail Buying (3 s.h.)

Buying duties and policies, how to buy, how much to buy, buying methods, source selection, price lines, and sales records. Product knowledge and analysis relative to the buying function and value analysis of products. (30-30) *Equivalent to RETL-801, 90-234.*

MLT-101 Introduction to Lab Science (2 s.h.)

This course introduces the basic concepts for education and career development in the field of laboratory science and the health care profession. Current health care systems and trends are emphasized along with the factors having current and future impact on medical laboratories. The organization and role of the clinical laboratory are explored, as well as medical ethics and conduct, employment opportunities, and professional organizations. (30-0) *Equivalent to PHYS-100, 70-100.*

MLT-120 Urinalysis (3 s.h.)

This course provides the foundation for the study of urine formation and its assessment along with the determination of the physical, chemical, and microscopic properties of urine in normal and abnormal states. Objectives also included are the development and evaluation of body fluids including cerebrospinal, synovial, serous, and amniotic fluids. (30-30) *Equivalent to 70-249, HEAL-105.*

MUA-120A-B Applied Piano (1-2 s.h.)

Individualized instruction in piano performance for students that are beginners. Instructional materials include a repertoire of basic piano literature. Students register for 1 credit hour (one 30-minute lesson per week) which is repeatable to a maximum of 4 credit hours. (7.5-15) *Equivalent to MUSI-195, 50-195.*

MUA-285A-B Applied Voice (1-2 s.h.)

Individualized instruction in vocal performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional literature. Students may register for 1 credit hour (30-minute lesson per week) or 2 credit hours (two 30-minute lessons per week) which is repeatable to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours (music majors for 2 credit hours only). (7.5 to 15-15 to 30) *Equivalent to 50-156, MUSI-156A-B.*

MUA-286A-B Applied Flute (1-2 s.h.)

Individualized instruction in Flute performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15-15 to 30) *Equivalent to 50-158, MUSI-158A-B.*

MUA-287A-B Applied Oboe (1-2 s.h.)
Individualized instruction in Oboe performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15 -15 to 30) *Equivalent to 50-159, MUSI-159A-B.*

MUA-288A-B Applied Clarinet (1-2 s.h.)
Individualized instruction in Clarinet performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. This course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15-15 to 30) *Equivalent to 50-160, MUSI-160A-B.*

MUA-289A-B Applied Bassoon (1-2 s.h.)
Individualized instruction in Bassoon performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15-15 to 30) *Equivalent to 50-161, MUSI-161A-B.*

MUA-290A-B Applied Saxophone (1-2 s.h.)
Individualized instruction in Saxophone performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15 -15 to 30) *Equivalent to 50-162, MUSI-162A-B.*

MUA-291A-B Applied Trumpet (1-2 s.h.)
Individualized instruction in Trumpet performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15 -15 to 30) *Equivalent to 50-163, MUSI-163A-B.*

MUA-292A-B Applied French Horn (1-2 s.h.)
Individualized instruction in French Horn performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit

hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15 -15 to 30) *Equivalent to 50-164, MUSI-164A-B.*

MUA-293A-B Applied Trombone (1-2 s.h.)
Individualized instruction in Trombone performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15 -15 to 30) *Equivalent to 50-165, MUSI-165A-B.*

MUA-294A-B Applied Euphonium (1-2 s.h.)
Individualized instruction in Euphonium performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15 -15 to 30) *Equivalent to 50-166, MUSI-166A-B.*

MUA-295A-B Applied Tuba (1-2 s.h.)
Individualized instruction in Tuba performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15-15 to 30) *Equivalent to 50-167, MUSI-167A-B.*

MUA-296A-B Applied Percussion (1-2 s.h.)
Individualized instruction in Percussion performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. Does not include drum set. (7.5 to 15 -15 to 30) *Equivalent to 50-168, MUSI-168A-B.*

MUA-297A-B Applied Drum Set (1-2 s.h.)
Individualized instruction in Drum Set performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15 -15 to 30) *Equivalent to 50-169, MUSI-169A-B.*

MUA-298A-B Applied Guitar (1-2 s.h.)
Individualized instruction in Guitar performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (one 30-minute lesson per week) or 2 credit hours (one 60-minute lesson per week) each semester. The course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15 -15 to 30) *Equivalent to 50-170, MUSI-170A-B.*

MUA-299A-B Applied Piano II (1-2 s.h.)
Prerequisite for MUA-299 is 1 credit hour of MUA-120, Applied Piano, or equivalent. Individualized instruction in instrumental performance through the development of strong technical foundation and well-rounded musicianship. Instructional materials include a repertoire of traditional and contemporary literature. Students may register for 1 credit hour (30-minute lesson per week) or 2 credit hours (60-minute lesson per week) each semester. Each course is repeatable for credit to a maximum of 8 credit hours. Must have instructor consent for 2 credit hours. (7.5 to 15-15-30) *Equivalent to 50-157, MUSI-196A-B.*

MUS-100 Music Appreciation (3 s.h.)
Music Appreciation is concerned with the development of Western Classical Music that encompasses nearly 2500 years of history beginning in 400 BC and culminating in the 20th century. This course provides the student knowledge of six commonly recognized historical eras through lectures, recordings, videotapes, digital media, and possible guest speakers. (45-0) *Equivalent to 50-113, MUSI-101.*

MUS-105 Introduction to Music Theory (2 s.h.)
Prerequisite: previous instrumental or vocal music experience. Introduction to Music Theory is designed as a precourse to any music theory sequence. The course work will emphasize the circle of fifths, major scales, all forms of the minor scales, parallel and relative scale relationships, and music vocabulary. This course will also introduce the aural skills of scale identification, rhythmic dictation, and interval identification. (22.5-15) *Equivalent to 50-120, MUSI-120.*

MUS-120 Music Theory I (3 s.h.)
Prerequisite: Previous instrumental or vocal experience. Music Theory I examines all the basic materials of music which include notation, scales, intervals, chords, melody, harmony, rhythm and texture. Other areas of analysis take in cadence types, chord inversions, figured bass harmonization and principles of part writing based on 18th century models. Students will meet three days a week for one hour. (45-0)

MUS-121 Music Theory II (3 s.h.)
Prerequisite: Final grade of C or better in MUS-120, Music Theory I, or instructor consent. This course will examine in more detail the harmonic element of music. Discussions will include the harmonic progression, modulation, and specific types of seventh chords as they relate to 18th century counterpoint. Students will meet three days a week for one hour. (45-0)

MUS-130 Aural Skills I (2 s.h.)
Prerequisite: Previous instrumental or vocal music experience. This course introduces fundamentals of the aural skills, ear training, and sight singing. Students will meet two days a week for one hour. (15-30)

MUS-131 Aural Skills II (2 s.h.)
Prerequisite: Final grade of C or better in MUS-130, Aural Skills I. This course will provide continued development of ear training and sight singing skills. Students will meet two days a week for one hour. (15-30)

MUS-132 Aural Skills III (2 s.h.)
Prerequisite: Final grade of C or better in MUS-131, Aural Skills II. This course will provide continued development of ear training and sight singing skills. Students will meet two days a week for one hour. (15-30)

MUS-133 Aural Skills IV (2 s.h.)
Prerequisite: Final grade of C or better in MUS-132, Aural Skills III. This course will provide continued development of ear training and sight singing skills. Students will meet two days a week for one hour. (15-30)

MUS-140 Concert Choir (1 s.h.)
Concert Choir is open to all students interested in vocal music. The group performs one formal concert on campus each semester, as well as community performances, area high school assemblies, and community meetings. Course may be repeated for credit. (45-90) *Equivalent to 50-150, MUSI-150.*

MUS-144 Orchestra (1 s.h.)
The North Iowa Symphony Orchestra, sponsored by North Iowa Area Community College, rehearses one night each week in preparation for concerts and programs. Open to all interested NIACC students and adults in the North Iowa area. Some sections of the orchestra require an audition. Course is repeatable for credit to a maximum of 4 credit hours. (20-0) *Equivalent to MUSI-153, 50-153.*

MUS-145 Concert Band (1 s.h.)
The North Iowa Concert Band, sponsored by North Iowa Area Community College, rehearses one night each week in preparation for concerts and programs. Open to all interested NIACC students and adults in the North Iowa area. Course is repeatable for credit to a maximum of 4 credit hours. (20-0) *Equivalent to 50-152, MUSI-152.*

MUS-150 Chamber Ensemble (1 s.h.)
Course is designed to provide an opportunity to study and perform chamber literature of the last three centuries. Groups may vary in size from duets to sextets for brass, woodwind, string, or percussion instrumentalists. Also includes jazz combos. Time arranged. Course is repeatable for credit to a maximum of 4 credit hours. (15-0) *Equivalent to MUSI-155, 50-155.*

MUS-152 Vocal Ensemble--NIACC Singers (1 s.h.)
Corequisite: MUS-140, Concert Choir. NIACC Singers is an auditioned group for students with a high level of competency in vocal music. Auditions may be completed individually by contacting the professor. The group performs one formal concert on campus each semester, as well as community performances, area high school assemblies, and community meetings. Course may be repeated for credit. (0-60) *Equivalent to 50-151, MUSI-151.*

MUS-163 Instrumental Jazz Ensemble (1 s.h.)
The NIACC Jazz Ensemble rehearses two hours each week in preparation for concerts on campus, for area high school assem-

blies, festivals, and community events. Concentration on jazz repertoire from 1930 to the present. Open to all interested NIACC students by audition. Course is repeatable for credit to a maximum of 4 credit hours. (30-0) *Equivalent to MUSI-154, 50-154.*

MUS-212 American Musical Heritage (3 s.h.)

Prerequisite: MUS-100, Music Appreciation. This course is a scholarly examination of the history and roots of many vernacular genres inherent to contemporary American music. Students will obtain increased awareness of popular music's heritage: to appreciate its diversity; to perceive the underlying kinship of its many styles, to discover the cultural influences of North America, South America, Central America, Mexico, and Africa; and to sense its evolutionary momentum. (45-0)

MUS-220 Music Theory III (3 s.h.)

Prerequisite: Final grade of C or better in MUS-121, Music Theory II, or instructor consent. Students will develop analytical and written skills in music covering the Renaissance through the early Classical period. Students will meet three days a week for one hour. (45-0)

MUS-221 Music Theory IV (3 s.h.)

Prerequisite: Final grade of C or better in MUS-220, Music Theory III, or instructor consent. Students will develop analytical and written skills in music covering the late Classical through the 20th Century. Students will meet three days a week for one hour. (45-0)

NET-112 Home/Office Computer Management (3 s.h.)

In this easy-tech, hands-on course, computer users perform and record practical, specific steps and procedures for setting up, configuring, and maintaining Small Office or Home Office (SOHO) PCs and networks. Learn to identify, install, and configure disk drives, RAM, CD/DVD drives, and peripherals such as scanners, cameras, and PDAs. Upgrade or update your operating system (OS) to keep current with capabilities and security. Setup, configure, and maintain secure wired and wireless consumer routers to connect local equipment and the Internet. Learn to setup, maintain, and navigate an organized file and folder structure along with downloading and/or installing software applications. (45-0) *Equivalent to 15-143, ISTS-100.*

NET-113 IT Essentials I (4 s.h.)

Presents an in-depth exposure to computer hardware and operating systems. Students learn the functionality of hardware and software components as well as suggested best practices for maintenance and safety issues. Students learn how to assemble and configure a computer, install operating systems and software, and troubleshoot hardware and software problems. This course helps students prepare for CompTIA's A+ certification exam, which covers the knowledge and skills essential for becoming a successful computer technician. (60-0)

NET-117 Home/Office Network Management (3 s.h.)

The goal of this course is to introduce students to fundamental networking concepts and technologies. This course provides a hands-on introduction to networking and the Internet using tools and hardware commonly found in the home and small business environment. Students will develop the skills necessary to plan and implement small networks across a range of applications (45-0)

NET-133 IT Essentials II (4 s.h.)

Prerequisite: NET-113, IT Essentials I, or permission of instructor. This course expands on concepts and skills learned in NET-113, IT Essentials I, and provides the knowledge, skills, and abilities essential for a successful computer service technician at the advanced level. Students are provided theoretical information and hands-on experiences in advanced topics of computer troubleshooting and repair. Students will be presented with opportunities to identify and diagnose hardware and software problems; implement and test solution(s); and prepare appropriate documentation. (60-0) *Equivalent to 15-209, ISTS-131.*

NET-136 Operating Systems II (3 s.h.)

Prerequisite: NET-113, IT Essentials I, or permission of the instructor. This course addresses advanced topics such as file management, shell programming, security, network and service administration, fault tolerance, recovery, troubleshooting, and operating system structure. This will be accomplished by studying the Unix or Linux operating systems. (45-0) *Equivalent to 15-177, ISTS-111.*

NET-149 Business Network Management (3 s.h.)

Prerequisite: NET-117, Home/Office Network Management. The goal of this course is to assist students in developing the skills necessary to provide customer support to users of small- to medium-sized networks and across a range of applications. The course provides an introduction to routing and remote access, addressing and network services. It will also familiarize students with servers providing e-mail services, web space, and Authenticated Access. This course prepares students with the skills required for entry-level Help Desk Technician and entry-level Network Technician jobs. (45-0)

NET-201 Network LANs and WANs (5 s.h.)

Prerequisite: NET-223, CISCO Routers or permission of instructor. This course provides a comprehensive, theoretical, and practical approach to learning the technologies and protocols needed to design and implement a converged switched network. Students learn about the hierarchical network design model and how to select devices for each layer. The course explains how to configure a switch for basic functionality and how to implement Virtual LANs, VTP, and Inter-VLAN routing in a converged network. The different implementations of Spanning Tree Protocol in a converged network are presented, and students develop the knowledge and skills necessary to implement a WLAN in a small-to-medium network. This course in the second part discusses the WAN technologies and network services required by converged applications in enterprise networks. The course uses the Cisco Network Architecture to introduce integrated network services and explains how to select the appropriate devices and technologies to meet network requirements. Students learn how to implement and configure common data link protocols and how to apply WAN security concepts, principles of traffic, access control, and addressing services. Finally, students learn how to detect, troubleshoot, and correct common enterprise network implementation issues. (75-0)

NET-213 CISCO Networking (4 s.h.)

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. It uses the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. The principles and structure of IP addressing

and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Labs use a “model Internet” to allow students to analyze real data without affecting production networks. Packet Tracer (PT) activities help students analyze protocol and network operation and build small networks in a simulated environment. At the end of the course, students build simple LAN topologies by applying basic principles of cabling, performing basic configurations of network devices such as routers and switches, and implementing IP addressing schemes. (60-0) *Equivalent to 15-156, ISTS-101.*

NET-215 CISCO Network Security (CCNA Security) (4 s.h.)
Prerequisite: NET-201, Network LANs and WANs, and NET-613, Information Data Assurance, or permission of the instructor. Network Security (CCNA Security) equips students with knowledge and skills that can be applied toward entry-level specialist careers in network security. CCNA Security is a blended curriculum with both online and classroom learning. CCNA Security aims to develop an in-depth understanding of network security principles, as well as the tools and configurations available. The following tools are covered: 1) Protocol sniffers/analyzers; 2) TCP/IP and common desktop utilities; 3) Cisco IOS software, Cisco VPN client; 4) Packet Tracer (PT); 5) Web-based resources. The predominant lab types are procedural, skills integration challenges, troubleshooting, and model building. The course goal is to prepare students to be able to implement, monitor and maintain a secure network. (60-0)

NET-223 CISCO Routers (4 s.h.)
Prerequisite: NET-213, CISCO Networking, or permission of the instructor; OR NET-117, Home/Office Network Management AND NET-149, Business Network Management. This course describes the architecture, components, and operation of routers, and explains the principles of routing and routing protocols. Students analyze, configure, verify, and troubleshoot the primary routing protocols RIPV1, RIPV2, EIGRP, and OSPF. By the end of this course, students will be able to recognize and correct common routing issues and problems. Students complete a basic procedural lab, followed by basic configuration, implementation, and troubleshooting labs in each chapter. Packet Tracer activities reinforce new concepts, and allow students to model and analyze routing processes that may be difficult to visualize or understand. (60-0) *Equivalent to 15-157, ISTS-102.*

NET-233 CISCO Switches (4 s.h.)
Prerequisite: NET-223, CISCO Routers, or permission of the instructor. This course provides a comprehensive, theoretical, and practical approach to learning the technologies and protocols needed to design and implement a converged switched network. Students learn about the hierarchical network design model and how to select devices for each layer. The course explains how to configure a switch for basic functionality and how to implement Virtual LANs, VTP, and Inter-VLAN routing in a converged network. The different implementations of Spanning Tree Protocol in a converged network are presented, and students develop the knowledge and skills necessary to implement a WLAN in a small-to-medium network. (60-0) *Equivalent to 15-158, ISTS-201.*

NET-243 CISCO Wide Area Network (WAN) (4 s.h.)
Prerequisite: NET-233, CISCO Switches, or permission of the instructor. This course discusses the WAN technologies and network services required by converged applications in enterprise

networks. The course uses the Cisco Network Architecture to introduce integrated network services and explains how to select the appropriate devices and technologies to meet network requirements. Students learn how to implement and configure common data link protocols and how to apply WAN security concepts, principles of traffic, access control, and addressing services. Finally, students learn how to detect, troubleshoot, and correct common enterprise network implementation issues. (60-0) *Equivalent to 15-159, ISTS-202.*

NET-254 Building Scalable Internetworks (4 s.h.)
Prerequisite: NET-243, CISCO Wide Area Network (WAN), or NET-201, Network LANs and WANs, CCNA certification, or permission of the instructor. CCNP: Building Scalable Internetworks is the first of four courses leading to the CISCO Certified Network Professional (CCNP) designation. CCNP: Building Scalable Internetworks introduces CISCO Networking Academy Program students to scalable IP networks. Students will learn how to create an efficient and expandable enterprise network by installing, configuring, monitoring, and troubleshooting network infrastructure equipment (especially routers such as CISCO ISRs) according to the Campus Infrastructure module in the Enterprise Composite Network model. Topics include how to configure EIGRP, OSPF, IS-IS, and BGP routing protocols and how to manipulate and optimize routing updates between these routing protocols. Other topics include multicast routing, IPv6, and DHCP configuration. (60-0) *Equivalent to 15-277, SRNE-200.*

NET-264 Implementing Secure Converged WANS (4 s.h.)
Prerequisite: NET-243, CISCO Wide Area Network (WAN), or NET-201, Network LANs & WANs, or CCNA certification, or permission of the instructor. CCNP: Implementing Secure Converged Wide Area Networks is one of four courses leading to the CISCO Certified Network Professional (CCNP) designation. CCNP: Implementing Secure Converged Wide Area Networks introduces CISCO Networking Academy Program students to providing secure enterprise-class network service for teleworkers and branch sites. Students will learn how to secure and expand the reach of an enterprise network with focus on VPN configuration and securing network access. Topics include teleworker configuration and access, frame-mode MPLS, site-to-site IPSEC VPN, CISCO EZVPN, strategies used to mitigate network attacks, CISCO device hardening and IOS firewall features. (60-0) *Equivalent to 15-278, SRNE-201.*

NET-274 Building Multilayer Switched Networks (4 s.h.)
Prerequisite: NET-243, CISCO Wide Area Network (WAN), or NET-201, Network LANs and WANs, CCNA certification, or permission of instructor. Building Multilayer Switched Networks is one of four courses leading to the CISCO Certified Network Professional (CCNP) designation. Multilayer Switching teaches students about the deployment of state-of-the-art campus LANs. The course focuses on the selection and implementation of state-of-the-art campus LANs. The course focuses on the selection and implementation of the appropriate CISCO IOS services to build reliable, scalable multilayer-switched LANS. Students will develop skills in the following areas: 1) Introduction to Campus Networks; 2) Virtual Local Area Networks (VLANs); 3) Spanning Tree Protocol; 4) Inter-VLAN Routing; 5) High Availability in a Campus Environment; 6) Wireless Client Access; 7) Minimizing Service Loss and Data Theft in a Campus Network; 8) Configuring Campus Switches to Support Voice. This hands-on, lab-oriented course stresses the

design, implementation, operation, and troubleshooting of multilayer switched networks. (60-0) *Equivalent to 15-285, SRNE-203.*

NET-284 Optimizing Converged Networks (4 s.h.)
Prerequisite: NET-243, CISCO Wide Area Network (WAN), or NET-201, Network LANS and WANS, CCNA certification, or permission of the instructor. Optimizing Converged Networks is one of four courses leading to the CISCO Certified Network Professional (CCNP) designation. CCNP: Optimizing Converged Networks introduces CISCO Networking Academy Program students to optimizing and providing effective QoS techniques in converged networks operating voice, wireless, and security applications. Topics include implementing a VOIP network, implementing QoS on converged networks, specific IP QoS mechanisms for implementing the DiffServ QoS model, AutoQos, wireless security and basic wireless management. (60-0) *Equivalent to 15-286, SRNE-204.*

NET-301 Network Cases (Voice over IP) (4 s.h.)
Prerequisite: NET-201, Network LANS & WANS or NET-243, CISCO Wide Area Network (WAN). Network Cases is a capstone course drawing together key networking resources. The course primarily focuses on voice and data integration, Voice over IP (VoIP) specifically, and the technologies that make it function. Components and standards of VoIP, also referred to as IP Telephony, are covered along with the reasoning behind its use. (60-0)

NET-304 Windows Workstation Operating Systems (4 s.h.)
This course prepares the student to properly install, configure, upgrade, troubleshoot, and repair personal computer operating systems using Windows Vista. This course also addresses operating system interface controls; file system management; application management; network client configuration; and, operating system security. Concepts learned in this course lead toward the Microsoft Certified Technology Specialist Exam #70-620 Windows Vista Configuration. (60-0) *Equivalent to 15-182, ISTS-120.*

NET-314 Windows Server (4 s.h.)
Prerequisite: NET-304, Windows Workstation Operating Systems, or permission of the instructor. This course applies the students' knowledge of computer networking, client operating systems, and server operating systems to the management of a complete Microsoft Windows network environment. Students will learn to manage client and server computers, storage resources, NTFS permissions, shared drives and printers, server performance and security, Active Directory objects, group policies, the Active Directory service, TCP/IP, name resolution protocols, applications, IIS, remote access, disaster recovery, and security. Concepts learned in this course lead toward the Microsoft Certified Technology Specialist Exam #70-640 Windows Server 2008 Active Directory Configuration. (60-0) *Equivalent to 15-163, ISTS-205.*

NET-324 Windows Network Management (4 s.h.)
Prerequisite: NET-314, Windows Server, or permission of the instructor. This course goes into detail on topics of network operating system such as design, planning, installation, configuration, security, performance, administration, troubleshooting, fault tolerance, and disaster recovery. Client setup, file and print sharing, directory services, remote access, along with other network services will be explored. Concepts learned in this course lead toward the Microsoft Certified Technology Specialist Exam #70-642

Windows Server Network Infrastructure Configuration. (60-0) *Equivalent to 15-184, ISTS-121.*

NET-613 Information Data Assurance (3 s.h.)
Prerequisite: NET-213, CISCO Networking, or NET-113, IT Essentials I, or permission of the instructor. This course will provide an overview of issues related to security in a networked environment, including such topics as security and disaster recovery, security within information services, security within an organization, virus protection, and Internet security/firewalls. (45-0) *Equivalent to 15-167, ISTS-210.*

NET-635 Ethical Hacking (3 s.h.)
Prerequisite: NET-613, Information Data Assurance, or permission of instructor. This course will go into more depth using the tools and concepts students were exposed to in Information "Data" Assurance. The student will be introduced to the concepts, principles, and techniques supplemented by hands-on exercises for defending from an attack. These methodologies are presented within the context of properly securing the network. The course will emphasize network attack defense methodologies with the emphasis on student use of network attack techniques and tools. The concept of Systems Security Certified Practitioner (SSCP) will be strongly emphasized in this course along with several of the CISSP CBK domains. (Certified Information Systems Security Professional - Common Body of Knowledge). (45-0)

NET-743 Fundamental Project Management (4 s.h.)
Fundamental Project Management defines a project and the role of projects in business. Students identify and demonstrate the basic knowledge areas of Project Management and the Project Management Framework. These knowledge areas focus on managing project components including: Integration, Scope, Time (scheduling), Cost, Quality, Human Resource, Communications, Risk, and Procurement. Fundamental Project Management clarifies the relationship between Project Management and other management disciplines including general management knowledge and practice, and application-area knowledge and practice. Students learn to apply the breakdown of project phases and processes and construct project plans that employ project phasing and knowledge areas. Students also learn to identify the aspects of project-based organizational systems and classify business organizations by type and project characteristics. Critical Path Method (CPM) project scheduling is learned and utilized to coordinate project planning, execution and analysis throughout a project life cycle. (60-0) *Equivalent to 15-290, ISTS-150.*

NET-782 Computer Users Support (3 s.h.)
Prerequisite: BCA-101, Introduction to Computers and Information Systems; or NET-113, IT Essentials I; or instructor approval. Introduces the concept of supporting personal computers as a career. Designed to help students target their customers and develop appropriate service skills. This course provides an introduction to end-user computing, computer user support, customer service skills, skills required for troubleshooting computer problems, common support problems, help desk operation, user support management, product evaluation strategies and standards, user needs analysis and assessment, installing end-user computer systems, training computer users, technical writing skills, and computer facilities management. (45-0) *Equivalent to 15-193, ISTS-230.*

PEA-100 Aerobics/Tae-Bo I (1 s.h.)

A one-hour lab class designed to increase the students' level of physical fitness and confidence through participating in three levels of Tae-Bo. Tae-Bo is an aerobic form of exercise using basic self-defense techniques of punching and kicking to develop cardiovascular strength, flexibility, and muscular endurance. The class is set up to be progressive with three levels of Tae-Bo included. The three levels are: a basic level, an intermediate level, and an advanced level of Tae-Bo. Class activity will follow the "Billy Blanks Instructional Tae-Bo" videotapes. Class will meet twice each week for one hour. The course is repeatable for up to four credits. (2-28) *Equivalent to PHYE-132, 60-108.*

PEA-107 Aerobic Circuit Training (1 s.h.)

This is an activity course designed to improve personal physical fitness through a combination of aerobic exercises and weight training. Students will learn a variety of aerobic activities along with proper use of different weight machines. This course will cater to individuals of all ages and fitness levels. (0-30)

PEA-113 Flatwater and River Canoeing (1 s.h.)

This course is an introductory course to teach beginning paddlers to safely and enjoyably canoe on lakes and gentle rivers. The course will focus on three areas: paddling skills, safety awareness, and technical rescue skill. The course will include a required extended river trip on a weekend. (4-22)

PEA-116 Bowling I (1 s.h.)

A one-hour lab class designed to teach the basic skills and knowledge of bowling through participation in a two hour per week bowling class. Student will be instructed on basic bowling techniques and scoring. Student will participate in various bowling activities such as a class bowling league and other group and individual competition. Class will meet at Mystic Lanes in Mason City. Student is required to pay a one-time bowling fee of \$45. The course is repeatable for up to four credits. (2-28) *Equivalent to PHYE-131, 60-107.*

PEA-127 Beginning Jogging (1 s.h.)

A self-paced physical conditioning course that emphasizes cardiovascular fitness through walking and jogging. The primary purpose is to introduce novice exercisers to the benefits of walking and jogging for the enhancement of health and fitness. Information on new trends and topics of fitness will be covered and a walking/jogging program will be performed throughout the term. This course is a physical activity-based course. By the end of the term, a student should be able to jog 30 minutes. (8-15)

PEA-129 Spinning (1 s.h.)

This course introduces students to a fun, low-impact, cardiovascular workout using spin bicycles to improve current health and fitness levels. Music will motivate you while you enjoy hills, flats, intervals, sprints, and more. Make sure to bring a towel and water bottle. Course is designed for men and women of all ages. (0-30)

PEA-130 Downhill Skiing (1 s.h.)

Fundamentals of downhill (alpine) skiing with a combination of classroom discussion, demonstration, and on-the-slope skiing lessons and evaluation. The class meets for nine hours of classroom instruction and will have twelve hours of ski instruction. Students will be required to sign up for two one-day, weekend ski trips with

the class during the semester, and will ski with the class during the lesson time. Equipment rental may be required. This course will not cover snowboarding, nor cross country (Nordic) skiing. This course is repeatable up to 2 semester hours of credit. (9-12)

PEA-146 Physical Fitness I (1 s.h.)

A lecture course designed to teach the student about the importance of being physically fit. The course material will provide insight into various methods of testing physical fitness as well as identifying what good physical fitness is. The student will be able to assess his/her own level of physical fitness. (15-0) *Equivalent to PHYE-113, 60-113.*

PEA-147 Physical Fitness I Lab (1 s.h.)

Prerequisite: PEA-146, Physical Fitness I. A lab course designed to increase a person's interest of his/her own level of physical fitness. The course provides activities with which the student can improve his/her level of physical fitness in the areas of strength, flexibility, and endurance. The student will be required to participate in class activities twice a week. (0-30) *Equivalent to PHYE-114, 60-114.*

PEA-158 Scuba Diving I (1 s.h.)

Upon completion of this course, the student will demonstrate knowledge of skills and concepts related to beginning scuba diving. The course will include lecture and lab (pool and open water dives). An assessment of swimming abilities will be conducted at the first session. Upon the completion of this course, the student will also be eligible for NAUI (National Association of Underwater Instructors) certification for an additional fee. Assessed fees for this course include equipment rental, textbook and pool rent. (17-20)

PEA-174 Tennis I (1 s.h.)

This class will involve learning the basic tennis skills, rules, and strategies for singles and doubles play. Students will be encouraged to observe match play from the Australian Open on television or videotape. Attendance at a high school AA tennis meet will also be included in the course. A written examination will be given at the end of class. (0-30)

PEA-187 Weight Training I (1 s.h.)

Lecture and laboratory course designed to cover the basic principles and skill techniques involved in weight training. This course will provide an overview of strength training principles, types of strength, systems of resistance training as well as core training principles, and postural considerations. (8-15)

PEA-190 Yoga/Stretching I (1 s.h.)

A lab course designed to increase the student's awareness and appreciation of yoga and its effect on physical and mental well being. The course provides a structured environment for the student to learn proper body alignment in the yoga poses and an awareness of the benefits associated with the different poses. This course is repeatable for up to 2 semester hours of credit. (0-30) *Equivalent to PHYE-133.*

PEA-191 Pilates (1 s.h.)

Pilates is an activity-based course designed to improve one's core strength, tone muscles, increase flexibility, and reduce stress. Mats and stability balls provided. Course is designed for men and women of all ages. (0-30)

PEA-287 Weight Training II (1 s.h.)

Prerequisite: PEA-187, Weight Training I. Lecture and laboratory course designed to increase knowledge, understanding, and skill techniques involved in weight training. This course is a continuation of Weight Training I, and will incorporate flexibility training, balance and coordination, and speed and agility training. (8-15)

PEC-110 Coaching Ethics Techniques & Theory (1 s.h.)

Guiding principles and techniques of coaching interscholastic athletics. Discussion of theory, ethics, and professional responsibilities as they relate to coaching interscholastic athletes. (20-0) *Equivalent to PHYE-150, 60-150.*

PEC-115 Athletic Development & Human Growth (1 s.h.)

A one-semester course with emphasis on human growth and development and relationship to physical activity, with special attention to children and adolescents. (15-0) *Equivalent to PHYE-153, 60-153.*

PEC-122 Introduction to Anatomy & Physiology for Coaching (1 s.h.)

An introduction to anatomy and physiology with stress on the relationship to athletic actions. This course is designed as an introductory course for prospective coaches with little or no background in anatomy and physiology. (15-0) *Equivalent to 60-152, PHYE-152.*

PEC-127 Care and Prevention of Athletic Injuries (2 s.h.)

Recommended: one semester course in anatomy and physiology. Introductory preparation in athletic training, injury, treatment techniques, taping, wrapping, etc. Preventative measures to reduce athletic injuries. Course may be used to fulfill partial requirement for Iowa Coaching Certification. (30-0) *Equivalent to PHYE-151, 60-118.*

PEC-166 Sports Officiating: Fall and Winter Sports (2 s.h.)

Guiding principles and standards: rules, mechanics, and procedures for competitive sports officiating. Students will work toward becoming a registered official in the Iowa Athletic Associations. Emphasis will be on football, volleyball, and boys' and girls' basketball officiating. Each student will gain actual officiating experience. (28-4) *Equivalent to PHYE-115, 60-115.*

PEC-168 Sports Officiating: Spring and Summer Sports (2 s.h.)

Prerequisite: PEC-166, Sports Officiating: Fall and Winter Sports. This course is a continuation of PEC-166. Attention directed toward the study of wrestling, track, baseball, and softball. (28-4) *Equivalent to PHYE-116, 60-116.*

PEH-111 Personal Wellness (3 s.h.)

Concepts of exercise science, nutrition, stress management, contemporary health issues and decision making. Assessment, application, and participation in lifetime fitness and skill activities. (45-0)

PEH-140 First Aid (1 s.h.)

Lecture-type course designed to give the layperson adequate first aid knowledge and skills with emphasis on accident prevention and recognition and treatment of common medical emergencies. (15-0) *Equivalent to PHYE-117, 60-232.*

PEH-144 Human Movement Science (3 s.h.)

The content of this course will cover anatomy and physiology of the human body focusing on the muscular, skeletal, and the cardiovascular systems. This course focuses on the application of the skeletal and neuromuscular systems to human movement, with special attention to the attachments and actions of the muscles. This course is for students interested in a field in exercise science such as: personal training, strength and conditioning, athletic training, fitness, wellness, and physical education. (45-0)

PEH-161 Introduction to Physical Education (2 s.h.)

Designed to provide career information concerning opportunities in physical education, coaching, and recreational activities. (30-0) *Equivalent to PHYE-101, 60-117.*

PEH-180 Rape Education & Self Defense (2 s.h.)

Rape Education and Self Defense is a course of study designed to introduce the participant to basic self-defense concepts and techniques, to heighten the participant's level of awareness and alertness in her environment, to provide participant with information about violent contexts, and to provide the participant with basic physical methods of self-defense. In general, this course cannot offer absolutes; however, the theory behind such a course rests in the concept that those armed with information and a few operational options stand a better chance of avoiding and, when avoidance fails, surviving violence. (30-0) *Equivalent to PHYE-110, 60-175.*

PEH-191 Sports Nutrition (3 s.h.)

This course will focus on basic human nutrition along with nutritional needs for athletes and/or physically active individuals. Areas of focus will be on carbohydrate loading, hydration, supplement use, fad diets, eating disorders, maintaining healthy body weight, and ergogenic aids. (45-0)

PEH-221 Introduction to Leisure Services (3 s.h.)

Introduction to leisure services professions. Examination of the components of leisure services delivery systems, focusing on programs and services, facilities, populations served, and sources of funding. (45-0)

PEH-261 Physical Activity for Health and Fitness (3 s.h.)

Prerequisite: PEH-111, Personal Wellness. Identification and programming of physical activities and nutrition lifestyle practices. Emphasis on the role of physical activity and nutrition in the enhancement of health and fitness in others. Integration of experiential learning activities with cognitive subject matter. (45-0)

PEH-908A-C Cooperative Education (1-3 s.h.)

Prerequisite: permission of Cooperative Education instructor. Cooperative Education provides work experience related to wellness, exercise science, leisure service, and/or physical education. This course is primarily designed to provide students with supervised work experience within their field of interest. Work experience hours are arranged, the number of hours are determined on the basis of one credit hour equals 60 hours of supervised work experience. (0-60 to 180)

PET-135 Personal Trainer (3 s.h.)

This course is designed to provide knowledge and prepare the student to become a nationally certified personal trainer. The focus of this course will be on the components of personal training. Students will also have the opportunity to train clients throughout the semester. Upon completion of this course, the student will have the necessary knowledge to apply for the ACE personal trainer certification exam. (45-0)

PEV-115 Varsity Baseball (1 s.h.)

Course may be repeated for a maximum of two credits. (40-160)
Equivalent to PHYE-120, 60-120.

PEV-120 Varsity Basketball (1 s.h.)

Course may be repeated for a maximum of two credits. (40-160)
Equivalent to PHYE-121, 60-121.

PEV-130 Varsity Cross Country (1 s.h.)

Course may be repeated for a maximum of two credits. (40-160)
Equivalent to PHYE-124, 60-124.

PEV-133 Varsity Track and Field (1 s.h.)

Course may be repeated for a maximum of two credits. (40-160)
Equivalent to PHYE-134.

PEV-140 Varsity Golf (1 s.h.)

Course may be repeated for a maximum of two credits. (10-60)
Equivalent to PHYE-123, 60-123.

PEV-150 Varsity Soccer (1 s.h.)

Course may be repeated for a maximum of two credits. (40-100)
Equivalent to PHYE-129, 60-129.

PEV-160 Varsity Softball (1 s.h.)

Course may be repeated for a maximum of two credits. (40-160)
Equivalent to PHYE-127, 60-127.

PEV-170 Varsity Volleyball (1 s.h.)

Course may be repeated for a maximum of two credits. (40-100)
Equivalent to PHYE-128, 60-128.

PEV-180 Varsity Wrestling (1 s.h.)

Course may be repeated for a maximum of two credits. (40-160)

PHI-101 Introduction to Philosophy (3 s.h.)

Introduces the student to the study of philosophy and teaches skills of critical thinking. The course examines the meaning and value of philosophy; human nature and the self, axiology-ethics and values (In search of the Good Life); social philosophy; freedom; individualism; philosophy and art; epistemology-the nature of knowledge; truth; philosophy and religion; the meaning of suffering and death; examination of decision making and self-discovery. (45-0)
Equivalent to PHIL-101, 80-210.

PHI-105 Introduction to Ethics (3 s.h.)

This course is designed to develop objective thinking skills. The goal is to create a balance between moral principles when considering a variety of ethical issues. The emphasis will be on developing a moral stance that is workable in today's society. Issues include poverty, environment, animal rights, business, preferences in hiring, war, death penalty, abortion, euthanasia, parent-child relationships, sex, love, and marriage. (45-0) *Equivalent to PHIL-102, 80-212.*

PHR-105 Introduction to Pharmacy Technician (3 s.h.)

Corequisite: HSC-120, Medical Terminology I. This course is designed to provide the student with basic knowledge about community and institutional pharmacy practice. Topics include: orientation to technician duties, medical terminology, introduction to institutional pharmacy practice, introduction to community/ambulatory pharmacy practice, and pharmacy calculations. Students taking this course must have met pre-admission math requirements. Students must attain a C or higher grade to proceed with other pharmacy courses. (45-0)

PHR-120 Pharmacology for Pharmacy Technicians (3 s.h.)

Prerequisites: HSC-120, Medical Terminology I, and PHR-105, Introduction to Pharmacy Technician, with a grade of C or higher, or permission of Division Chair. This course is designed to introduce the student to the basic concept of pharmacology, as well as the biological factors affecting the actions of drugs for each pharmacological classification. This course is designed for the pharmacy technician and is the second of three courses in the Pharmacy Technician Certificate program. The course is also appropriate to update the knowledge of health care professionals who participate in the delivery of medications in a variety of settings. (45-0)

PHR-941 Pharmacy Technician Practicum (1 s.h.)

Corequisite: PHR-120, Pharmacology for Pharmacy Technicians. Prerequisites: HSC-120, Medical Terminology I; PHR-105, Introduction to Pharmacy Technician, with a grade of C or higher; and compliance with math requirements. This course will expose the student to the pharmacy environment and allow hands on experience with computer skills required to fill prescriptions in a pharmacy setting. This experience will expose the students to the equipment normally found in the pharmacy. The student will learn how to correctly measure and weigh out pharmaceutical ingredients used in extemporaneously compounding prescriptions using pharmacy graduates and Class A and electronic balances. The student will use their knowledge of pharmacy math in making calculations to assist in these procedures. The student will use the pharmacy lab to simulate the prescription filling process. Lab experience will include receiving the prescription from a patient, inputting the information into the computer, pulling the drugs from the inventory, counting or measuring the ingredients and labeling the container. The student will become familiar with the reference materials available in a pharmacy and how to use these resources to obtain necessary drug information. After completion of the lab portion, the student will be assigned to a community or institutional pharmacy and required to satisfactorily complete a check-list of duties that are normally performed by a technician. This course has been designated as a pass/no pass course. The student must complete PHR-120, Pharmacology for Pharmacy Technicians, with a grade of C or higher to receive a passing grade in this course. (0-60)

PHS-125 Physical Science (4 s.h.)

Prerequisite: High school Algebra or equivalent. An introductory college level, one-semester course intended to meet general education and elementary education certification requirements. Uses the Powerful Ideas in Physical Science curriculum and includes the units on Light & Color, Electricity, and Heat & Conservation of Energy. (45-30) *Equivalent to 70-114, PHYS-101.*

PHY-106 Survey of Physics (4 s.h.)

Corequisite: MAT-102, Intermediate Algebra, or equivalent. An introductory, one-term course covering measurement, motion, heat, waves, electricity, magnetism and atomic physics. (45-30) *Equivalent to 70-122, PHYS-110.*

PHY-162 College Physics I (4 s.h.)

Prerequisite: MAT-134, Trigonometry and Analytic Geometry, or equivalent. For students going into professional fields other than engineering. Covers mechanics, conservation laws, simple harmonic motion, waves, and fluids. (45-30) *Equivalent to 70-280, PHYS-120.*

PHY-172 College Physics II (4 s.h.)

Prerequisite: PHY-162, College Physics I; or equivalent algebra-based first semester physics course as approved by the instructor. A continuation of College Physics I, covering thermodynamics, electricity and magnetism, DC and AC circuits, and optics. (45-30) *Equivalent to 70-281, PHYS-121.*

PHY-212 Classical Physics I (5 s.h.)

Prerequisite: MAT-210, Calculus I or equivalent with a C or higher, concurrent enrollment in or completion of MAT-216, Calculus II or equivalent. Calculus-based course intended for engineers or physics majors. Covers Kinematics, dynamics, statics, conservation laws, rotational motion, simple harmonic motion, waves, and fluids. (60-30) *Equivalent to 70-282, PHYS-220.*

PHY-222 Classical Physics II (5 s.h.)

Prerequisite: PHY-212, Classical Physics I or equivalent; MAT-216, Calculus II or equivalent. Second of two-course sequence for engineers or physics majors. Covers thermodynamics, electricity and magnetism, electric circuits, and optics. (60-30) *Equivalent to 70-283, PHYS-221.*

PHY-720 Career Physics (4 s.h.)

Prerequisite: MAT-770, Applied Math I, and MAT-771, Applied Math II. An introduction to the physics of mechanical, fluid, electrical and thermal systems with emphasis on application in the technical careers. (45-30) *Equivalent to 96-150, PHYS-701.*

PNN-603 Practical Nursing I (4 s.h.)

Corequisite: HSC-150, Body Structure and Function, and ENG-105, Composition I. This course provides an orientation of the history of nursing, ethical and legal principles, and the role of the practical nurse in the health community. Introduction to basic nursing assessments relating to safety and comfort while utilizing the nursing process to identify and meet client needs throughout the life span. Students will be instructed in documentation and communication skills. Instruction in implementation of medical asepsis and safety when performing basic nursing skills. Students will apply, practice, and demonstrate the skills taught in the college laboratory. (45-30) *Equivalent to 94-101, LPNS-701.*

PNN-604 Practical Nursing II (13 s.h.)

Corequisite: PSY-111, Introduction to Psychology. A continuation of PNN-603, Practical Nursing I. Practical Nursing II continues to utilize the nursing process with emphasis on implementation in meeting client needs resulting from physical and psychological impairments. Pharmacology, diet modification, psychosocial concepts, disease process, and health maintenance are incorporated

into the student's knowledge and skills. Introduction of concepts and care of the obstetric, newborn, and pediatric client. The student will continue to practice advanced skills in the college lab as well as clinical experiences in long-term care, pediatrics, medical-surgical, maternal-newborn, and community settings. (135-165) *Equivalent to LPNS-705.*

PNN-607 Practical Nursing III (13 s.h.)

Corequisite: PSY-121, Developmental Psychology. Practical Nursing III emphasizes utilization of all components of the nursing process to meet client needs resulting from impairments related to disease processes affecting physical and psychological status of the client. Student's knowledge and skills continue to be enhanced in areas of pharmacology, nutrition, mobility, psychosocial concepts, and health maintenance. Concepts of management, legal, and ethical aspects of the nursing profession are presented. A supervised management experience in the long-term care setting allows the student an opportunity to care for a group of clients and apply basic skills in leadership and conflict management. Clinical experiences include medical-surgical, long-term care, mental health, and community setting. (105-270) *Equivalent to 94-110, LPNS-704.*

POL-111 American National Government (3 s.h.)

A survey of the American federal system of government including a description and analysis of the Constitution; the legislative, executive, and judicial branches of government; and the American political process. (45-0) *Equivalent to 80-120, POLS-101.*

POL-112 American State and Local Government (3 s.h.)

A survey of state and local governments in the United States including an analysis of federal-state relations; state constitutions; state and local legislative, executive, and judicial systems; and major issues in state and local politics. (45-0) *Equivalent to 80-121, POLS-102.*

POL-121 International Relations (3 s.h.)

An introductory course in international relations which offers an analysis of the structure and processes of world politics. Topics covered include the study of foreign policies, a survey of major problems in contemporary world affairs, and an examination of selected global issues. (45-0) *Equivalent to 80-122, POLS-110.*

PSY-111 Introduction to Psychology (3 s.h.)

An introduction to the scientific study of behavior; a brief history of psychology as a science, and topics fundamental to human behavior including developmental issues, sensory abilities, cognitive performance, social and emotional factors in behavior, and abnormal behavior and therapies. (45-0) *Equivalent to 80-101, PSYC-101.*

PSY-121 Developmental Psychology (3 s.h.)

A topical approach to studying the physical, cognitive, social, and emotional domains of human development from conception to death. Examining the research in these areas allows the student to construct real-world applications to different contexts in life including culture, ethnicity, and gender. Learning activities reflect discussions on a variety of psychological issues including learning, personality, moral behavior, and psychological well-being and life satisfaction across the lifespan. (45-0) *Equivalent to PSYC-110, 80-230.*

PSY-223 Child and Adolescent Psychology (3 s.h.)

This course covers information relevant to the development of humans from the prenatal stages through adolescence providing an introduction to and survey of behavioral characteristics of individual development. Interwoven into each stage of development (infancy/toddlerhood, early childhood, middle childhood, and adolescence) are the affects of community, family, and school in the development of children and adolescence. (45-0) *Equivalent to 80-104, PSYC-204.*

PSY-281 Educational Psychology (3 s.h.)

Educational psychology applies the accumulated knowledge of human cognition and behavior from the field of psychology to the theory and practice of teaching. This course will be taught from a research perspective to facilitate student comprehension of teaching theories and how they can be applied in the classroom. (45-0) *Equivalent to 80-103, PSYC-205.*

PTA-100 PTA Terminology (1 s.h.)

Prerequisite: None. Includes an orientation to the vocabulary of medicine with emphasis on terminology related to physical therapy. (15-0) *Equivalent to 90-145, PTAS-703.*

PTA-101 Introduction to PTA (2 s.h.)

Prerequisite: None. This course provides an overview of the physical therapy profession and the role of the physical therapist assistant, including legal and ethical aspects of practice. Students will be informed in how to research physical therapy topics, on importance of confidentiality and patient's rights, and will have an understanding of how to report abuse in the workplace. Students will develop an understanding of the impact an illness or disability has on the individual, will be instructed in documentation, and given much opportunity to work on their communication skills. Includes a unit on managing stress, how culture impacts patient care, and an introduction to the Clinical Education component of the program. (30-0) *Equivalent to 90-149, PTAS-701.*

PTA-110 Fundamentals for PTA (3 s.h.)

Prerequisite: None. This course provides a foundation in physical therapy interventions by covering techniques that the PTA can utilize to monitor patients as well as basic treatment interventions such as range of motion and transfers. Purposes of all skills, proper techniques, and safety considerations will be addressed. Students will have lab time to apply, practice, and demonstrate skills they are taught. (30-30) *Equivalent to 90-144, PTAS-702.*

PTA-120 Kinesiology (3 s.h.)

Prerequisite: BIO-206, Anatomy and Physiology I (and lab), with a grade of C- or higher. Provides a basic understanding of normal human body movement as related to skeletal, articular, neurological, and muscular systems. Levers, torques, center of gravity, base of support, and their relationship to balance, posture, and movement will be addressed. The student will learn anatomical palpations and the basics of human gait. (30-30) *Equivalent to 70-149, BIOL-222.*

PTA-141 Developmental Processes (3 s.h.)

Prerequisite: PTA-110, Fundamentals for PTA, with a grade of C or higher. Presents overview of normal physical, cognitive, social, and emotional developmental processes which affect an individual

throughout the life span. Course focus and emphasis on normal physical development and the application of physical processes to the field of physical therapy. (45-0) *Equivalent to 90-146, PTAS-711.*

PTA-150 Pathophysiology (3 s.h.)

Prerequisites: HSC-120, Medical Terminology I or PTA-100, PTA Terminology; BIO-206, Anatomy and Physiology I (with lab); BIO-207, Anatomy and Physiology II (with lab); PTA-110, Fundamentals for PTA; PTA-120, Kinesiology; PTA-300, Introduction to the Clinic; PTA-301, PTA Clinic I. Presents clinical disorders and diseases commonly treated in physical therapy. Pathology, etiology, diagnosis, signs, symptoms, treatment, prognosis and implications for rehabilitation will be covered. (45-0) *Equivalent to 90-147, PTAS-801.*

PTA-162 PTA Assessment Procedures (3 s.h.)

Prerequisites: BIO-206, Anatomy and Physiology I (with lab); BIO-207, Anatomy and Physiology II (with lab); PTA-101, Introduction to PTA; PTA-110, Fundamentals for PTA; and PTA-120, Kinesiology. This course provides an in-depth look at various assessment skills performed and utilized by the PTA. Special emphasis will be on theory, application procedures, and documentation of findings when utilizing goniometry and manual muscle testing in the clinic setting. Students will have an opportunity in the lab portion to apply, practice, and demonstrate techniques they are taught. (30-30) *Equivalent to 90-150, PTAS-802.*

PTA-190 Physical Agents (4 s.h.)

Prerequisite: BIO-206, Anatomy and Physiology I (with lab); PTA-101, Introduction to PTA; PTA-110, Fundamentals for PTA; and PTA-300, Introduction to the Clinic. Prepares the student to use physical agents for patient treatment. Mechanisms of action, indications, precautions, contraindications and treatment procedures will be covered for the following: superficial heat, deep heat, electromagnetic radiation, cold, external compression, massage, bio-feedback, whirlpool, wound care, traction, and electrical stimulation. Pain rating and skin assessment procedures will also be included. Students will practice applications in lab. (37.5-45) *Equivalent to 90-159, PTAS-712.*

PTA-210 Orthopedics (3 s.h.)

Prerequisites: PTA-100, PTA Terminology; PTA-101, Introduction to PTA; PTA-120, Kinesiology; PTA-141, Developmental Processes; PTA-150, Pathophysiology; PTA-162, PTA Assessment Procedures; PTA-190, Physical Agents; PTA-300, Introduction to the Clinic; PTA-301, PTA Clinic I; and PTA-302, PTA Clinic II. Principles of fracture and soft tissue healing are applied to musculoskeletal injuries and disorders. Injuries, disorders, and function specific to each joint are covered. Physical therapy treatment for specific joint injuries are presented. Students will practice techniques in lab. (30-30) *Equivalent to 90-213, PTAS-811.*

PTA-231 Therapeutic Exercise for PTA (3 s.h.)

Prerequisites: PTA-100, PTA Terminology; PTA-101, Introduction to PTA; PTA-120, Kinesiology; PTA-141, Developmental Processes; PTA-150, Pathophysiology; PTA-162, PTA Assessment Procedures; PTA-190, Physical Agents; PTA-300, Introduction to the Clinic; PTA-301, PTA Clinic I; and PTA-302, PTA Clinic II. This course studies the physiological effect of exercise on the musculoskeletal,

cardiovascular, and pulmonary systems. Physical therapy treatment techniques to improve strength, flexibility, cardiovascular and pulmonary function are presented. Special topics discussed are diabetes, pregnancy, amputation, women's health issues, and aquatic therapy. Students will practice techniques in lab. (30-30) *Equivalent to 90-212, PTAS-810.*

PTA-241 Neurology for PTA (4 s.h.)

Prerequisites: HSC-120, Medical Terminology I, or PTA-100, PTA Terminology; BIO-206, Anatomy and Physiology I (with lab); BIO-207, Anatomy and Physiology II (with lab); PTA-101, Introduction to PTA; PTA-110, Fundamentals for PTA; PTA-120, Kinesiology; PTA-150, Pathophysiology; PTA-162, PTA Assessment Procedures; PTA-190, Physical Agents; all previous PTA clinical courses. This course will provide information, discussion, and treatment considerations with neurologically-based diagnoses. Clinical manifestations and treatment considerations will be addressed with common neurological disorders with special emphasis on strokes or CVA. To enhance the students' understanding, typical treatment techniques, exercise programs, and treatment progression will be applied to lab scenarios with diagnoses covered. Students will have an opportunity in the lab portion to apply, practice, and demonstrate techniques they are taught. (45-30) *Equivalent to 90-214, PTAS-812.*

PTA-250 PTA Career Essentials (2 s.h.)

Prerequisites: PTA-100, PTA Terminology; PTA-101, Introduction to PTA; PTA-120, Kinesiology; PTA-141, Developmental Processes; PTA-150, Pathophysiology; PTA-162, PTA Assessment Procedures; PTA-190, Physical Agents; PTA-300, Introduction to the Clinic; PTA-301, PTA Clinic I; and PTA-302, PTA Clinic II. All previous PTA technical courses. Includes the basic principles of management including levels of authority and responsibility, supervisory process, performance appraisals, and policies and procedures. The process of quality assurance and chart audits are discussed. Varieties of reimbursement systems and their impact on health care delivery are discussed. Resume writing, interviewing, and employability skills will be covered. Ethical and legal issues in the practice of physical therapy will also be examined. (30-0) *Equivalent to 90-215, PTAS-813.*

PTA-280 PTA Seminar (1 s.h.)

Prerequisite: All previous PTA technical and clinical courses. This course will address all aspects of patient care in a physical therapy setting, including what is expected of a physical therapy assistant at entry level practice. Discussion based, this 15-hour course will incorporate students' experiences from Clinic III/IV so that each student has time to process and consider these learning experiences. All aspects of patient care will be addressed and case studies will be reviewed to assist with problem solving skills. (15-0) *Equivalent to 90-217, PTAS-823.*

PTA-300 Introduction to the Clinic (1 s.h.)

Prerequisite: PTA-101, Introduction to PTA; and PTA-110, Fundamentals for PTA. Forty-hour clinical occurs one week prior to start of second term. Skills, knowledge, and attitudes learned in PTA Terminology, Introduction to PTA, and Fundamentals for PTA will be applied to direct patient care in selected clinical settings. Includes application/integration of PTA course work with the goal of student providing quality care with uncomplicated patients and

a high degree of supervision and guidance. This course has been designated as a pass/no pass course. (0-40) *Equivalent to 90-136, PTAS-710.*

PTA-301 PTA Clinic I (2 s.h.)

Prerequisite: PTA-101, Introduction to PTA; PTA-110, Fundamentals for PTA; PTA-120, Kinesiology; PTA-141, Developmental Processes; PTA-190, Physical Agents; and PTA-300, Introduction to the Clinic. Eighty-hour clinical occurs two weeks beyond the end of the second term. Skills, knowledge, and attitudes learned in Developmental Processes, Kinesiology, and Physical Agents will be applied to direct patient care in selected clinical settings. Includes application/integration of current and previous PTA course work with the goal of student providing quality care with uncomplicated to complex patients and a degree of supervision and guidance that will vary with the complexity of the patient or the environment. This course has been designated as a pass/no pass course. (0-80) *Equivalent to 90-137, PTAS-713.*

PTA-302 PTA Clinic II (2 s.h.)

Prerequisite: HSC-120, Medical Terminology I or PTA-100, PTA Terminology; PTA-101, Introduction to PTA; PTA-110, Fundamentals for PTA; PTA-120, Kinesiology; PTA-141, Developmental Processes; PTA-190, Physical Agents; PTA-150, Pathophysiology; PTA-162, PTA Assessment Procedures; PTA-300, Introduction to the Clinic; and PTA-301, PTA Clinic I. Eighty-hour clinical occurs in the final week of the third term and extends one week after the term ends. Skills, knowledge, and attitudes learned in Pathophysiology and PTA Assessment Procedures will be applied to direct patient care in selected clinical settings. Includes application/integration of current and previous PTA course work, with the goal of the student providing quality care with uncomplicated to complex patients and a degree of supervision/guidance that will vary with the complexity of the patient or the environment. This course has been designated as a pass/no pass course. (0-80) *Equivalent to 90-138, PTAS-803.*

PTA-400 PTA Clinic III (7 s.h.)

Prerequisite: HSC-120, Medical Terminology I, or PTA-100, PTA Terminology; PTA-101, Introduction to PTA; PTA-110, Fundamentals for PTA; PTA-120, Kinesiology; PTA-141, Developmental Processes; PTA-190, Physical Agents; PTA-150, Pathophysiology; PTA-162, PTA Assessment Procedures; PTA-302, PTA Clinic II. Eight-week, full-time clinical experience. Skills, knowledge, and attitudes learned in Neurology, Orthopedics, Therapeutic Exercise and Career Essentials will be applied to direct patient care in selected clinical settings. Includes application and integration of all PTA course work with goal of student consistently and efficiently providing quality care with uncomplicated to complex patients and a moderate to low degree of supervision/guidance except when addressing new and highly complex situations. This course has been designated as a pass/no pass course. (0-320) *Equivalent to 90-218, PTAS-821.*

PTA-401 PTA Clinic IV (5 s.h.)

Prerequisite: HSC-120, Medical Terminology I, or PTA-100, PTA Terminology; PTA-101, Introduction to PTA; PTA-110, Fundamentals for PTA; PTA-120, Kinesiology; PTA-141, Developmental Processes; PTA-190, Physical Agents; PTA-150, Pathophysiology; PTA-162, PTA Assessment Procedures; PTA-302, PTA Clinic II; PTA-400,

PTA Clinic III. Six-week, full-time clinical experience. Skills, knowledge, and attitudes learned in all PTA course work will be applied to direct patient care in selected clinical settings. Includes application and integration of all PTA course work with the goal of the student consistently and efficiently providing quality care with uncomplicated to complex patients. The student usually needs no further guidance or supervision except when addressing new and highly complex situations. This course has been designated as a pass/no pass course. (0-240) *Equivalent to 90-219, PTAS-822.*

RDG-015 Power Reading (2 s.h.)

Power Reading uses a unique program to increase each student's reading ability. Trained tutors will assess each student's incoming reading skills and will provide each student with appropriate reading material. This course is graded Pass/No Pass and can be repeated for continued reading gains. (30-0)

RDG-125 College Reading Strategies (3 s.h.)

Designed to help students become more efficient and effective in reading college textbooks, required materials, leisure articles, and books. Course adapts to the style and needs of each individual to improve vocabulary, comprehension, rate, and study skills. (45-0) *Equivalent to ENGL-120, 30-120.*

RDG-161 Speed Reading (1 s.h.)

Are you struggling to keep up with a flood of e-mail, articles, reports, books, and other printed matter? Save yourself oodles of time by learning to read faster and with better comprehension from acclaimed speed reading expert, Dr. Merrill Ream. This course is a complete speed reading experience. Topics are presented in a logical progression with plenty of time to help you master the skills and techniques you'll need for lasting proficiency as a speed reader. This course has been designated as a pass/no pass course. (5-20) *Equivalent to 89-146, SDEV-251.*

SDV-065 Personal Management (3 s.h.)

Prerequisite: Consent of instructor. This Enrich course will examine concerns faced by students as members of modern society. It is designed to assist students in making sound decisions concerning physical, mental, and financial health, and to use nonworking hours in a creative way. Critical thinking skills will be emphasized as students analyze written documents, including those financial, legal, and medical. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. This course has been designated as a pass/no pass course. (45-0) Instructor's consent required. *Equivalent to ENRI-049, 89-030.*

SDV-066 Career Decisions (3 s.h.)

Prerequisite: Consent of instructor. This Enrich course is designed to assist the student in examining a variety of careers, looking at educational, physical, and mental requirements. Students will develop a personal profile and will match career areas to their personal interests and strengths. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. This course has been designated as a pass/no pass course. (45-0) Instructor's consent required. *Equivalent to ENRI-051, 89-041.*

SDV-068 Skills for Job Seekers (3 s.h.)

Prerequisite: Consent of instructor, and suggest SDV-066, Career Decisions. This Enrich course is designed to assist the student in structuring a job search. Written materials will include applications, resumes, and cover letters. Interviewing skills will be developed. Job-keeping skills will be emphasized. Credit earned will not satisfy the requirements for an Associate Degree and will not be used in calculating the cumulative grade point average for graduation. This course has been designated as a pass/no pass course. (45-0) Instructor's consent required. *Equivalent to ENRI-050, 89-040.*

SDV-111 Success Seminar (1 s.h.)

Prerequisite/Corequisite: For participants in the TRiO Student Support Services Program. Success Seminar cultivates a positive attitude and gives students the motivation to help themselves in a college setting. The goal is to instill confidence, eagerness, and enthusiasm toward obtaining a college degree. (15-0) *Equivalent to SDEV-101, 89-153.*

SDV-113 Strategies for Academic Success (2 s.h.)

This course is useful to any student in either semester. The focus is assisting in the development of effective study techniques and comprehensive skills necessary for independent learning and academic success. This course satisfies 2 credit hours of transferable elective credits toward an Associate degree. (30-0) *Equivalent to 89-151, SDEV-105.*

SDV-120 ICBE (1 s.h.)

Prerequisite: Students must have the consent of the instructor. The introductory and required beginning course for the Individualized Competency Based Education program (ICBE). It is designed to teach personal educational assessment and evaluation, goal setting, degree pact writing and individualized educational planning. (15-0) *Equivalent to 89-120, SDEV-125.*

SDV-135 Job Seeking Skills (1 s.h.)

Develop skills necessary to enter the job market and experience long-term career growth. Students learn basic job seeking techniques, job keeping skills, and strategies for continued growth. (15-0) *Equivalent to 89-150, SDEV-110.*

SDV-160 Career Decision Making (2 s.h.)

Introduction to a structured career decision-making process, including self-awareness, career and educational information, economic information, and related activities/projects. (30-0) *Equivalent to 89-152, SDEV-106.*

SDV-177 Listen to Your Heart and Success Will Follow (1 s.h.)

Intelligently facilitated and fast-paced, Listen to Your Heart and Success Will Follow will help you enjoy the rewards that come from doing what really makes you happy! Your instructor and a caring community of students will help you begin designing a life that really works for you. With a complete understanding of your own interests, values, needs and abilities, you'll learn how you can use work to express yourself and share your interests and talents. Your every day will be filled with joy and inspiration, and a greater depth of meaning will be added to everything you do. This course program is skillfully crafted to weave experiential learning with the conceptual presentation, giving you time

to experience, understand, and implement each new strategy as it is introduced. This course has been designated as a pass/no pass course. (5-20) *Equivalent to 89-145, SDEV-250.*

SDV-195 Student Senate (1 s.h.)

Students will develop increased organizational and leadership skills through involvement in planning campus activities and entertainment, participating in community service projects, organizing community college advocacy efforts and helping to get students involved at North Iowa Area Community College. Additional leadership opportunities may include attending a conference, becoming a Student Senate representative on a student or college committee, or assisting with Fine Arts events. Course may be repeatable for a maximum of four credits. (0-30) *Equivalent to 80-125, POLS-125.*

SDV-199 Orientation to College (1 s.h.)

This course is designed for first-time college students and/or transfer students with less than 12 hours of credit. Areas included in this course are uses of Web Advisor, uses of NIACC e-mail, availability of campus resources, and strategies to deal with navigating the college experience. (15-0)

SDV-210A-E Cooperative Education Internship (1-5 s.h.)

Practical training on the job under the cooperative supervision of the college and work supervisor. Designed primarily for the college transfer students to provide an experience that: (1) is directly related to their college program and career objectives; or (2) will help them test out career interest and/or discover new career possibilities. Credit is determined on the basis of one semester of credit for each 60 hours of approved employment to be completed in a term. Appropriateness of learning objectives is an essential factor in the approval process. 1-5 credits per semester, 12 credits maximum. (0-60 to 300) Instructor's consent required. *Equivalent to 89-100, SDEV-120A-E.*

SDV-287 PTK Leadership Development Studies (2 s.h.)

This course will help students develop the necessary skills to be an effective leader. Topics covered include developing a leadership philosophy, articulating a vision, decision making, time management, team building, empowering and delegating, initiating change, managing conflict, and ethics. Class time will primarily consist of discussion and small-group activities. (15-30) *Equivalent to 80-127, SDEV-111.*

SDV-901B Special Topics Enrich (2 s.h.)

Prerequisite: Consent of instructor/college recommendation. Fall semester: In this Enrich course, students focus on improved decision making in work and personal situations. Emphasis is placed on civic responsibility and the importance of being an informed citizen. Spring semester: This Enrich course focuses on the student in a global society. Students work to develop critical thinking skills which will assist them to look past biases and prejudices in order to become responsible citizens. The class stresses both written and verbal communication skills. (30-0) *Equivalent to 89-299, ENRI-900B.*

SOC-110 Introduction to Sociology (3 s.h.)

An introductory survey course, sociology is the scientific study of society. Inquires into what holds societies together, what causes

societies to change, and how social forces affect our daily lives. Topics covered include: culture and society, socialization, social research, groups, organizations, institutions, deviance, gender, race, and ethnicity. An emphasis is placed on cultural diversity. (45-0) *Equivalent to SOCS-101, 80-110.*

SOC-115 Social Problems (3 s.h.)

Prerequisite: SOC-110, Introduction to Sociology, is recommended. An introduction to the study of contemporary social problems. The course examines how social problems are identified, explores underlying conditions and causes of social problems, and considers possible solutions and policy implications. Emphasis is on sociological and critical thinking frameworks. Topics of exploration include: mental illness, substance abuse, crime, prejudice and discrimination, prostitution, poverty, and more. (45-0) *Equivalent to 80-111, SOCS-103.*

SOC-120 Marriage and Family (3 s.h.)

A survey of the family as a social unit in the modern American culture. A study is made regarding the creation of the American family from various cultures as well as the problems the family is subjected to such as sex relations, social roles, communication, finance, and divorce. (45-0) *Equivalent to 80-112, SOCS-112.*

SOC-150 Introduction to Human Services (3 s.h.)

This course is designed to familiarize the student with the human services arena. Various employment opportunities are explored, as well as ethical, legal, political, and economic forces. (45-0) *Equivalent to 80-114, SOCS-100.*

SOC-215 Prime for Life: Substance Abuse (1 s.h.)

Requirements: Students must be enrolled prior to the start of the first night of class. No late enrollments. Attendance is mandatory. Each lesson builds on the other, therefore, all 6 sessions must be attended or the student cannot satisfactorily complete the course. Prime for Life risk reduction program is a research-based curriculum that focuses on the reduction of problems associated with high risk drinking. The ultimate goal is to impact drinking choices by using a collection of strategies designed to facilitate behavior change. The program integrates knowledge from over 1,200 scientific studies from biological, psychological, and social research that supports the content of the program. Students will gain an increased knowledge regarding the subject matter, as well as gain personal knowledge about their own drinking patterns through a self reflection process. Knowledge of the subject matter and self knowledge are both critical prerequisites for those who are considering employment in the human services fields. Open to all students. Required for the Human Services certificate. (15-0)

SOC-881 Social Responsibility and Community Service (2 s.h.)

This course is grounded in an appreciation for the health of the community and the potential of the individual to positively impact the well being of the community through direct and active participation. Socially responsible individuals initiate change by transforming their social interests into personal advocacy and social participation in their respective community. This advocacy and participation is actualized through a lifelong commitment to addressing social problems through community service. (15-30)

SPC-111 Public Speaking (2 s.h.)
Public speaking as an intellectual tool for use in argumentation and persuasion in a democratic society. (Offered each term.) (30-0)
Equivalent to SPCH-101, 85-101.

SPC-131 Group Communication (2 s.h.)
Principles and techniques of group discussion methods and procedures. (30-0) *Equivalent to SPCH-102, 85-105.*

WEL-108 Oxy-acetylene Welding and Cutting and Shielded Metal Arc Welding (2 s.h.)
This course gives students basic knowledge and skill in oxy-acetylene welding and cutting and shielded metal arc welding (stick welding). Students will learn proper welding safety practices and procedures. Oxy-acetylene welding and SMAW welding of mild steel will be performed in the flat, horizontal, and vertical positions. Students will also learn how to properly set up, maintain, and troubleshoot welding and cutting equipment. (15-30)

WEL-109 Gas Metal Arc Welding and Gas Tungsten Arc Welding (2 s.h.)
This course gives students basic knowledge in Gas Metal Arc Welding (wire feed) and Gas Tungsten Arc Welding (TIG). Students will learn proper welding safety practices and procedures. GMAW and GTAW welding of mild steel will be performed in the flat, horizontal, and vertical positions. Students will also learn how to properly set up, maintain, and troubleshoot welding equipment. (15-30)

WEL-110 Welding Blueprint Reading (2 s.h.)
Prerequisite: None. This course provides instruction in the fundamentals of reading and interpreting blueprints. A student learns to interpret and apply welding symbols along with identifying proper assembly procedures. (30-0) *Equivalent to WELD-701, 98-110.*

WEL-138 Oxy-acetylene Welding and Cutting (2 s.h.)
Fusion joining of mild steel and cutting processes. Selection of proper torch tip sizes, filler rods, angles, and travel speeds for O.A.W. processes. The set-up and adjustment of oxy-acetylene welding equipment, along with practical experience using both ferrous and non-ferrous metals. (15-30) *Equivalent to WELD-703, 98-190.*

WEL-222 Arc Welding I (9 s.h.)
Flat and horizontal SMAW, GMAW, and GTAW. The operation of AC and DC transformer arc welders and motor driven DC welders. The effects of amperage, polarity, and characteristics of various electrodes. Butt, fillet, corner, and lap welds are made in various positions. Application of techniques required for equipment repair. (45-180)

WEL-223 Arc Welding II (9 s.h.)
Prerequisite: WEL-222, Arc Welding I. Flat, horizontal, vertical, overhead SMAW, GTAW, and GMAW. The operation of AC and DC transformer arc welders. The effects of amperage, polarity, and characteristics of various electrodes. Butt, fillet, corner, and lap welds are made in various positions. Application of techniques required for equipment repair. (45-180)

WEL-240 Welding Fabrication/Certification (3 s.h.)
This course is designed to allow students to incorporate all previous welding skills in an effort to fabricate a group project. The student will also utilize this course time to work towards AWS certification. (0-90)

WEL-250 Welding Automation (2 s.h.)
This course is designed to introduce individuals to the automation used in the welding industry. The student will learn the automation process through the use of a robotic welding arm and a CNC plasma table. (15-30)

WEL-335 Ag and Industry Welding (2 s.h.)
This is a basic arc/oxy-fuel welding and cutting course. The students will perform introductory skills in SMAW, GTAW, and GMAW welding, oxy-acetylene welding, and oxy-fuel cutting. The student learns safety procedures relating to welding subjects and general shop safety. (15-30)

WTT-103 Introduction to Wind Energy (3 s.h.)
A basic study of the many facets of the wind industry. Study includes the history and development of the wind industry, wind industry terminology, types of wind turbines, economic and environmental impact of wind energy, future of wind energy, and other relevant topics. Students will have the opportunity to tour a wind farm. (45-0)