

Course Descriptions

The Illinois Articulation Initiative (IAI) is designed to facilitate the transfer of students from one Illinois institution to another. To assist students in identifying qualifying general education core courses, appropriate course offerings listed in the following pages are designated with General Education Core areas as follows: **IAI C – Communication; IAI S – Social & Behavioral Sciences; IAI H, HF – Humanities; IAI F, HF – Fine Arts; IAI M – Mathematics; IAI P, LP – Physical Sciences; IAI L, LP – Life Sciences.**

The Illinois Articulation Initiative/Illinois Baccalaureate Majors' Recommendations (iTransfer Majors) describe courses typically taken by freshmen and sophomores for a specific major. These course recommendations are meant for students who are undecided about a transfer school. The recommended major courses are designated at the end of the appropriate course as follows: **AG (Agriculture); BIO (Biological Science); BUS (Business); CHM (Chemistry); CS (Computer Science); CRJ (Criminal Justice); EGR (Engineering); EGL (English); HST (History); MC (Media and Communication Arts); MTH (Mathematics); PHY (Physics); PLS (Political Science); PSY (Psychology); SOC (Sociology) and TA (Theatre Arts).** For more information go to www.iTransfer.org

Students planning to transfer should contact an academic advisor in Student Services by calling (815) 825-9375 or via email at advising@kish.edu.

All lecture/lab hours are based on a 16 week schedule.

Course Rotation Key:

FA= Offered Fall semester Only

FAE= Offered Fall Semester of Even Years

FAO= Offered Fall Semester of Odd Years

SP= Offered Spring Semester Only

SPE= Offered Spring Semester of Even Years

SPO= Offered Spring Semester of Odd Years

ACCOUNTING (ACC)

ACC 101 — Software for Accounting (1.5)

Prerequisite: None

This is a hands-on course using small business accounting software. Students will learn how to install, set up, and run software for accounting, including accounts receivables, accounts payables, cash sales, payroll, generating reports, and miscellaneous accounting practices. This course is repeatable three times as software changes. One and one-half hours lecture/discussion per week.

ACC 106 — Accounting Seminar (.5-3)

Prerequisite: None

A special studies course designed to meet student and community needs. Available upon request in specific situations which do not comply with regular course offerings but do merit college credit and provide for occupational needs. Credit is determined on a contact hour basis. Repeatable three times up to a maximum of twelve credit hours.

ACC 108 — Business Accounting (3)

Prerequisite: None

Standard bookkeeping procedures as they apply to personnel records, records of social organizations, and records of professional or small businesses. Course covers the accounting cycle, special journals, banking procedures, and payroll. Not designed for those wishing to continue their study of accounting. Three hours lecture/discussion a week. (*SP*)

ACC 121 — Financial Accounting (4)

Prerequisite: Appropriate placement test scores, or MAT 066 or MAT 068 or MAT 096 with a grade of "C" or higher.

The development of financial accounting. Students will learn to: construct, interpret, and analyze the balance sheet; analyze period-end adjustments – accruals and deferrals; construct, interpret, and analyze the income statement for a service business and a merchandising business; construct, interpret, and analyze various periodic and perpetual merchandise inventory methods; interpret and analyze the cash account, formulate an accurate policy for future business decisions; interpret and analyze the receivables, construct a depreciation policy for the long-term assets; interpret and analyze liabilities (short-term, long-term, and contingent); construct, interpret and analyze the stockholder's equity section of corporations; construct, interpret and analyze a cash flow statement; and interpret and analyze the financial statements using various ratios and analyses. A working knowledge of spreadsheets or CIS 123, or CIS/OS 133 recommended. Four hours lecture/discussion a week. **IAI: BUS 903**

ACC 122 — Managerial Accounting (4)

Prerequisite: ACC 121

A continuation of ACC 121. Students will learn to: analyze, interpret and complete both job-order and process cost accounting cycles; construct, analyze and interpret cost-volume-profit relationships; interpret and analyze absorption and variable costing approaches for managerial decisions; formulate, interpret and complete a master budget with pro-forma income statement and balance sheet; construct standard costs and measure variances from standards to material, labor and manufacturing overhead; analyze and interpret differential costs and product decisions; construct, analyze, and interpret activity-based costing as a decision-making tool; construct, analyze and interpret decisions using present value method; and construct, analyze and interpret just-in-time procedures. A working knowledge of spreadsheets or CIS 123, or CIS/OS 133 recommended. Four hours lecture/discussion a week. **IAI: BUS 904**

ACC 200 — VITA Tax Procedure & Practice (3)

Prerequisite: Consent of Instructor

Application of the basic principles of federal income taxes as they relate to low-to-moderate income individuals. This is a hands-on course consisting of the preparation of various low-to-moderate individual income tax returns using Forms 1040EZ, 1040A, 1040 and IL1040. Participation and certification in the volunteer income tax program is required. Three hours lecture/discussion per week. (SP)

ADULT BASIC EDUCATION (ABE)

Adult Basic Education courses are not applicable toward Kishwaukee degree or certificate program requirements. For more information, see Baccalaureate/Transfer Programs.

ADULT SECONDARY EDUCATION (ASE)

Adult Secondary Education courses are not applicable toward Kishwaukee degree or certificate program requirements. For more information, see Baccalaureate/Transfer Programs.

AGRICULTURE (AGR)

AGR 105 — Agricultural Seminar (.5-3)

Prerequisite: None

Special studies course designed to meet student and community needs. Available upon request in specific situations which do not comply with regular course offerings, but do merit college credit and provide for occupational needs. Credit determined on a contact hour basis. Repeatable three times up to a maximum of twelve credit hours.

AGR 112 — Intro to Precision Agriculture (3)

Prerequisite: None

This course is designed to provide the students with an introductory look at the latest technologies for managing crop production. Students will examine the use of satellite positioning systems, electronic sensors, controllers, and computer systems to create detailed management information for use in agricultural management decisions. Analysis of data gathered to achieve productivity, environmental, and economic benefits will be emphasized. Two hours of lecture/discussion and two hours of lab per week.

AGR 116 — Precision Ag Equipment (3)

Prerequisite: None

Practical application of management principles and the selection, adjustment, repair and maintenance of precision agricultural machinery. Includes all areas of farm equipment and the technology that is helping increase productivity. This course is primarily designed for students outside of the Diesel Power Technology program. Two hours of lecture/discussion and two hours of lab per week.

AGR 198 — Agribusiness Internship (2-4)

Prerequisite: None

Based on the career objective of the student and the cooperation of an agricultural oriented business organization approved by the college, a student applies classroom instructional background to actual job situations. Requires a minimum of 150 to 300+ hours in a supervised occupational setting in addition to meeting with the instructor. Credit determined on a contact hour basis. Repeatable three times up to 12 credit hours.

AGR 204 — Integrated Precision Ag (3)

Prerequisite: AGR 112

Practical application of geospatial technologies for site specific and whole farm management practices using precision agriculture software to integrate real world data in the interpretation and creation of maps for precision agriculture applications. Specific emphasis will be focused on data processing, and data management as well as developing prescriptions to optimize yield and profitability while mitigating environmental impacts. Two hours of lecture/discussion and two hours of lab per week.

AGRICULTURE TRANSFER (AGT)

AGT 100 — Orientation to Agricultural Careers (1)

Prerequisite: None

A study of agriculture employment opportunities both in and outside of the United States. Designed to explore opportunities and to help formulate the beginning of a student's educational career goals and path. Includes an orientation to the college, college expectations, and student success techniques. One hour lecture/discussion a week. Limited Transfer – See advisor for more information.

AGT 140 — Introduction to Animal Science (4)

Prerequisite: None

Fundamentals of animal science involving a study of the animal industry, genetics, selection, nutrition and physiology of cattle, swine, sheep, and poultry. Three hours lecture/discussion and two hours lab a week. **IAI: AG 902**

AGT 160 — Introduction to Agricultural Economics (4)

Prerequisite: None

This is an introductory economics course designed to provide students with a background in both micro and macro economics. It is concerned with the practical applications of economics regarding the allocation of scarce resources to achieve the maximum satisfaction of unlimited wants. It is designed to introduce students to the concepts of price theories, the behavior of individuals and firms under varying market conditions, the behavior of consumers, national income theories, economic fluctuations and growth, money and banking, and international economics. Seventy-five percent of this course is devoted to microeconomic theory and topics, and 25% devoted to macroeconomic theory and topics. Four hours lecture/discussion a week. **IAI: AG 901**

AGT 170 — Introduction to Agricultural Mechanization (3)

Prerequisite: None

Emphasis on technical terminology, skill development, and application of principles to agriculture power, machinery, structures, conservation, electrification, and welding. Two hours lecture/discussion and two hours lab a week.

IAI: AG 906

AGT 210 — Introduction to Crop Science (4)

Prerequisite: None

Basic principles of field crops including cultural practices, fertility, pest control, growth, utilization, and improvement. Emphasis on crop physiology in corn, soybeans, small grains, and forages. Three hours lecture/discussion and two hours lab a week. **IAI: AG 903**

AGT 215 — Introduction to Soils and Fertilizers (4)

Prerequisite: None

The nature and properties of soils including origin, formation, biological, chemical, and physical properties, emphasizing soil management by sampling, testing, and determining fertilizer requirements. Three hours lecture/discussion and two hours lab a week. **IAI: AG 904**

ANTHROPOLOGY (ANT)

ANT 120 — Introduction to Anthropology (3)

Prerequisite: None

A study of the basic concepts and ideas relevant to the fields of anthropology, which is a holistic approach to the study of humankind and human variation. The course surveys the two major subfields of anthropology: physical anthropology (human evolution, non-human primates, and human variation) and cultural anthropology (cultural variation, including language). Three hours lecture/discussion a week.

IAI: S1900N

ANT 203 — Introduction to Archaeology (3)

Prerequisite: None

An introduction to the subfield of anthropology which studies the prehistory and history of humankind. The class also examines archaeological concepts including research and methods for study of prehistoric cultures. Emphasis will be placed on the excavation and discoveries of material culture, methods of dating artifacts, analysis of artifacts and interpretation of findings. Three hours lecture/discussion a week. **IAI: S1903**

ANT 220 — Introduction to Cultural Anthropology (3)

Prerequisite: None

An introduction to the origin, development, and diversity of cultures focusing on such aspects of culture as social organization, economics, religion, and language. Theories and methods of cultural anthropology will be applied to the analysis of selected cultures. Three hours lecture/discussion a week. **IAI: S1 901N**

ANT 240 — Physical Anthropology (3)

Prerequisite: None

An introduction to human evolutionary history, human biological variation, genetics, evolutionary theory, nonhuman primates, and basic forensics. Theories and methods of physical anthropology will be applied to the analysis of the fossil record and human biology. Three hours lecture/discussion a week. **IAI: S1 902**

ART (ART)

ART 100 — Drawing I Foundations (3)

Prerequisite: None

A continuation of ART 100, Drawing I. This course builds on and refines the experiences of Drawing I focusing on a variety of media including color, mixed-media, and may include digital media. Emphasis is on invention and formal concerns. Explorations into abstraction, nonobjective and fabricated image making is covered in this class. This course includes vocabulary development, critical analysis activities, and reference to contemporary and historic models of drawing. Six studio hours a week. **IAI: ART 904**

ART 101 — Drawing II Foundations (3)

Prerequisite: ART 100

A continuation of ART 100, Drawing I. This course builds on and refines the experiences of Drawing I focusing on a variety of media including color, mixed-media, and may include digital media. Emphasis is on invention and formal concerns. Explorations into abstraction, non-objectivity and fabricated image making is covered in this class. This course includes vocabulary development, critical analysis activities, and reference to contemporary and historic models of drawing. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 103 — Digital Art (3)

Prerequisite: None

An introduction to digital art, imaging, and design. Digital image manipulation and generation will be practiced, including the integration of computer hardware, software, and peripheral devices as tools to capture, compose and construct images using traditional and contemporary visual approaches as applied to art and design. Students will study the creation of art and design through the usage of layout devices such as composition, visual hierarchy, content development and concept development. Art and design software standard to the industry will be utilized. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 167 — Graphic Design I (3)

Prerequisite: None

An introduction to the fundamentals of graphic design. Topics include research, image manipulation, vector graphics, logo development, typography, and layout design for print and screen. Students will use the formal elements of design including composition, color, texture, pattern, point, line, and shape and apply them using graphic tools into effective graphic design communications. Art and design software standard to the industry will be utilized. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 200 — Figure Drawing I (3)

Prerequisite: ART 100

An introduction to drawing the human figure using a variety of media. Drawings are derived from direct observation emphasizing descriptive and gestural drawing techniques of the human figure. Drawing activities include drawing the figure, its specific features, and learning to understand and illustrate anatomical differences from a variety of human body types. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 201 — Figure Drawing II (3)

Prerequisite: ART 200

A continuation of ART 200. This course builds upon aesthetic and technical skills begun in the introductory level course. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 203 — Digital Imaging (3)

Prerequisite: None

An introduction to digital imaging using software, graphic images, and photography as tools to create artwork. This course surveys production, manipulation, and output of photographic images electronically and for print. Topics include meaning, aesthetics, historical context, image appropriation, and the implications of photographic electronic imaging to legal, moral, and social issues in the commercial and fine arts fields. Students will learn about raster and vector graphics, resolution, file formats, output devices, color systems, and image-acquisitions. Art and design software standard to the industry will be utilized. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 204 — Digital Illustration (3)

Prerequisite: None

An introduction to digital illustration using image editing, vector graphics, and digital drawing and painting to extend and augment a student's skills using analog media and methods. Assignments emphasize traditional illustration skills such as visual problem solving, rendering, and drawing, while exploring the digital possibilities to execute the artwork. Cross-utilizing software and mixing media are encouraged. A range of exercises and projects gives the student experience in a variety of design applications. The relationship of illustration with other fields such as animation, graphic design and painting is examined. Art and design software standard to the industry will be utilized. Six studio hours a week.

ART 207 — Video Art (3)

Prerequisite: None

An introduction to video practice, concentrating on creating, presenting, and analyzing the moving image. Projects will focus on developing a photographic eye, learning the basics of video and sound editing, and building a working knowledge of video art. This course is designed to expand conceptual ideas and visual language by confronting the notion of time within the working process. Readings, research and discussion will supplement the lab work. Art and design software standard to the industry will be utilized. Six studio hours a week.

ART 211 — 2-D Design Foundations (3)**Prerequisite:** None

A comprehensive study exploring the fundamentals of the visual elements and the principles of design through two-dimensional projects using a variety of black and white, and color media. Six studio hours a week.

IAI: ART 907**ART 212 — 3-D Design Foundations (3)****Prerequisite:** None

A studio course exploring the fundamentals of the formal systems and basic elements of visual organization through three-dimensional design principles and theories using a variety of media. Studio-based courses include appropriate instruction in the health and safety issues relative to the methods of the course and the materials being used.

Six studio hours a week. Limited Transfer – See advisor for more information.

ART 214 — Intaglio Printmaking (3)**Prerequisite:** None

An introduction to dry point, etching, mezzotint, monotype and other intaglio processes with the emphasis on development of technical skills, aesthetic design, and production of creative art prints. Six studio hours per week. Limited Transfer – See advisor for more information.

ART 223 — Photography I (3)**Prerequisite:** None

An introductory course that covers the basic principles of black and white photography using a film-based SLR camera, traditional image processing in the chemical darkroom, and the aesthetic concerns as a fine art medium. Framing, composition, and exposure control will be covered as well as an overview of the history of photography and its content as both a commercial medium and a form of artistic expression. Students supply their own SLR film-based cameras, film, and photographic paper. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 224 — Photography II (3)**Prerequisite:** ART 223

A continuation of ART 223 with an emphasis on the creative and expressive qualities of film-based photography as an artistic medium. Further development of skills related to darkroom procedures, zone systems for black and white, and experimentation. Individual projects required. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 231 — Sculpture I (3)**Prerequisite:** ART 212

A studio course introducing basic sculptural processes, materials, and tools, including additive, subtractive, and substitution methods. Studio-based courses include appropriate instruction in the health and safety issues relative to the methods of the course and the materials being used. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 232 — Sculpture II (3)**Prerequisite:** ART 231

A continuation of ART 231. This course builds on the aesthetic and technical skills begun in the introductory course. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 235 — Metals/Jewelry I (3)**Prerequisite:** None

A studio course introducing the tools, materials, and fabrication methods of metals used in designing and creating small-scale forms. Studio-based courses include appropriate instruction in the health and safety issues relative to the methods of the course and the materials being used. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 236 — Metals/Jewelry II (3)**Prerequisite:** ART 235

A continuation of ART 235. This course builds on the aesthetic and technical skills begun in the introductory course. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 241 — Ceramics I (3)**Prerequisite:** None

An introduction to ceramics. This studio course consists of both hand and wheel methods of construction. Students will learn about clay bodies, glazes, decoration methods, and kiln firing. Course emphasis is on functional as well as sculptural work. Studio-based courses include appropriate instruction in the health and safety issues relative to the methods of the course and the materials being used. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 242 — Ceramics II (3)**Prerequisite:** ART 241

A continuation of ART 241. This course builds on the aesthetic and technical skills begun in the introductory course. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 250 — Relief Printmaking (3)**Prerequisite:** None

An introduction to relief printmaking processes. This course emphasizes the development of technical skills, aesthetic design, and production of creative art prints. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 260 — Painting I (3)**Prerequisite:** ART 100 or ART 211 or instructor consent

An introduction to oil and/or acrylic painting, focusing on traditional painting methods, materials, and techniques. Emphasis is placed upon exploration of formal and technical concerns. Projects will explore a variety of subject matter while focusing on compositional principles, color relationships, the physical and expressive properties of paint, and the creative process. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 261 — Painting II (3)**Prerequisite:** ART 260

A continuation of painting concepts explored in ART 260. This course is designed to further acquaint students with technical processes, formal relationships, and conceptual issues. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 267 — Graphic Design II (3)**Prerequisite:** ART 167

A continuation of ART 167. This course builds on the foundations learned in Graphic Design I. Topics include creation of elements of brand identity programs, such as logos, publications, advertisements, websites and other applications. Emphasis will be placed on developing a portfolio from visualizations to production techniques, through directed studio exercises using the computer. Upon completion, students should be able to effectively apply design principles and visual elements to a wide variety of business identity and communication problems. Art and design software standard to the industry will be utilized. Six studio hours a week. Limited Transfer – See advisor for more information.

ART 282 — Introduction to the Visual Arts (3)**Prerequisite:** None

An introduction to the visual arts as they illustrate social-cultural traditions, material culture, and aesthetic values. This survey course examines the historical, social, and technological factors that contribute to understanding the function and meaning of works of art. This course does not count for credit toward a major or minor in art. Three hours lecture/discussion a week. **IAI: F2 900**

ART 283 — Art in the Elementary School (3)**Prerequisite:** None

An introduction to the principles and practical classroom procedures in art for the elementary school teacher. This course includes such topics as art education theory, art terms, techniques, and various media, economical variations for commonly used materials, children's creative work at various developmental stages, and organization of art programs in the classroom. One hour lecture/discussion and five studio hours a week. Limited Transfer – See advisor for more information.

ART 289 — History of Non-Western Art (3)**Prerequisite:** None

A survey of the history of the visual arts (painting, drawing, printmaking, sculpture, and architecture) in selected Non-Western societies. Examines works of art as expressions of the ideas and beliefs of artists within their cultural and social contexts. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ART 291 — History of Art I Foundations (3)**Prerequisite:** None

A global survey of the history of the visual arts and architecture, focusing on major artistic styles and movements in relationship to the Western art tradition. The course also examines works of art as expressions of the ideas and beliefs of artists within their cultural and social contexts. Three hours lecture/discussion a week. **IAI: F2 901**

ART 292 — History of Art II Foundations (3)**Prerequisite:** None

This is a continuation of History of Art I. Three hours lecture/discussion a week. **IAI: F2 902**

ART 294 — History of Photography (3)**Prerequisite:** None

A historical overview of the development of photography as an art form from 1839 to the present, including critical analysis of types of photographs and aesthetic movements in photography. This course examines photographs for their aesthetic and humanistic values, emphasizing photographs as expressions of the ideas and beliefs of photographers within their cultural and social contexts. Three hours lecture/discussion a week. **IAI: F2 904**

ART 298 — Topics in Art History (1-3)**Prerequisite:** None

Special topics in art history. When offered, topics may include Non Western Art, Women Artists, or a concentration on a specific Art Period/Style. Slide lectures and discussion. No topics will be offered more than twice in three years. Variable hours, 1-3 contact hours a week. Repeatable three times as topics change. Limited Transfer – See advisor for more information.

ART 299 — Topics in Studio Art (1-3)**Prerequisite:** None

Special topics in studio art. Possible course offerings will be portfolio development, the management of an art gallery, book and paper arts, or other specialized areas of interest in the studio arts. Variable hours. Repeatable three times as topics change. Two to six studio hours per week. Limited Transfer – See advisor for more information.

AUTOMOTIVE TECHNOLOGY (AMT)

AMT 100 — Automotive Orientation (3)

Prerequisite: None

This course prepares students for a career in the automotive industry. Items covered will include an introduction to potential careers, certification, resume building, continuing education, how to access service information, shop safety, and general shop equipment. Three hours lecture/discussion per week.

AMT 105 — Automotive Technology Seminar (.5-3)

Prerequisite: None

Special studies course designed to meet student and community needs. Available upon request in specific situations which do not comply with regular course offerings but do merit college credit and provide for occupational needs. Credit will be awarded on a contact hour basis. Repeatable three times as topics change.

AMT 116 — Basic Automotive Electrical (3)

Prerequisite: None

Theory and operation of basic electrical systems found on the automobile. Includes coverage of basic electrical theory, ohms law, starting/charging systems, lighting, and other basic electrical systems. Course content includes usage of related test equipment and meters. Two hours lecture/discussion and two hours lab a week.

AMT 125 — Automotive Braking Systems (3)

Prerequisite: None

An in-depth study of automobile brake systems. Includes description, theory, operation, diagnosis, and repair of brake systems. Students are trained in all aspects of brake service, including necessary rebuilding and machine work procedures. Two hours lecture/discussion and three hours lab a week.

AMT 127 — Engine Management I (3)

Prerequisite: AMT 116

This class is a study of engine fuel and ignition systems. Operation and testing of modern fuel injection systems includes fuel pumps, fuel injectors and associated management systems will be covered. Operation and testing of automotive ignition systems includes spark plugs, distributors, DIS and coil over plug systems will be covered. Two hours lecture/discussion and three hours lab a week.

AMT 129 — Auto Heating/Air Conditioning (3)

Prerequisite: AMT 116

An in-depth study of the automobile air conditioning system. Includes system description, theory, servicing, diagnosis, and repair of heating/air conditioning systems. A/C operation, recharging, leak detection, and diagnosis of system malfunction will be studied, as well as reading of schematics, use of circuit testing equipment circuit analysis and diagnosis. Two hours lecture/discussion and two hours lab a week.

AMT 131 — Automotive Steering/Suspension (3)

Prerequisite: None

Study of the construction, operation, service, and repair procedures of front and rear suspension on passenger cars and light trucks. Lab experiences include servicing of ball joints, springs, shocks, and other suspension parts, along with steering gears and linkages, and wheel balance. Special equipment usage and procedures applied to suspension service are also covered. Two hours lecture/discussion and three hours lab a week.

AMT 133 — Automotive Engines I (3)

Prerequisite: None

Design, theory, operation, service and basic rebuilding of automobile engine systems. Two hours lecture/discussion and two hours lab a week.

AMT 135 — Manual Trans & Drivelines (3)

Prerequisite: None

Designed to provide a thorough understanding of manual transmissions, manual transaxles, universal joints, constant velocity joints, and clutch assemblies. Emphasizes lab work involving theory, operation and service procedures used during diagnosis, repair, and rebuilding of these driveline systems. Use of special tools and measuring procedures are covered. Two hours lecture/discussion and three hours lab a week.

AMT 205 — Advanced Chassis Systems (3)

Prerequisite: AMT 125, AMT 131

The in-depth study of electronically controlled chassis systems such as steering, suspension and also ABS. Steering and suspension diagnosis as well as hands on alignment procedures covered. Two hours lecture/discussion and two hours lab a week.

AMT 217 — Advanced Drivelines & 4X4 (3)

Prerequisite: AMT 135

Inspection, construction, operation, and diagnosis of, final drive, transfer case, locking hub assembly, driveline electrical components and controls. Emphasizes lab work involving theory, operation and service procedures used during diagnosis, repair, and rebuilding of these driveline systems. Use of special tools and measuring procedures are covered. Two hours lecture/discussion and two hours lab a week.

AMT 219 — Hybrid & Electric Vehicle Tech (3)

Prerequisite: AMT 223, AMT 233

A study of hybrid electric vehicles (HEV) and electric vehicles (EV). Topics covered include high voltage propulsion, high voltage safety, differences in HEV and EV systems. Proper general service procedures as well as high voltage battery and propulsion system diagnostics will be addressed. Two hours lecture/discussion, and three hours lab a week.

AMT 223 — Engine Management II (3)**Prerequisite:** AMT 127

This course is a study of computerized engine management. Topics covered include: computer controls of engine systems, diagnostic tools and techniques, history and ramifications of government involvement in the automotive industry, emissions systems and emissions testing. Two hours lecture/discussion and two hours lab a week.

AMT 225 — Automatic Transmissions I (3)**Prerequisite:** None

Theory and operation of automatic transmissions/transaxles. Includes theory of hydraulics, in-depth service, overhaul procedures, and diagnosis. Two hours lecture/discussion and three hours lab a week.

AMT 227 — Automotive Engines II (3)**Prerequisite:** AMT 133

Complete engine rebuilding service and procedures are used during this predominately lab oriented course. Students are expected to use previously learned skills from AMT 133 Automotive Engines I to completely rebuild an engine. Major emphasis is placed on correct rebuilding procedures including inspection, measuring, and buildup of the short block assembly. Complete cylinder head rebuilding and machine work are also performed. Two hours lecture/discussion and three hours lab a week.

AMT 229 — Automotive Service & Repair (4)**Prerequisite:** Eighteen (18) AMT credit hours with a grade point average (GPA) of 2.0 or higher

Students apply skills previously learned and study new problems during internship training. Simulated auto technology shop exposes students to management and business experiences and practical application of diagnosis and testing competencies. Two hours lecture/discussion and four hours lab a week.

AMT 231 — Engine Management III (3)**Prerequisite:** AMT 223

An advanced class that gives students information and experience applying knowledge already obtained with structured diagnostic techniques. Diagnosing engine performance and drivability problems will be accomplished through the use of 5-gas analyzers, computer oscilloscopes, hand-held scanners and PC based tools. Module programming will also be covered. Two hours lecture/discussion and two hours lab a week.

AMT 233 — Automotive Body Electronics (3)**Prerequisite:** AMT 116

This course provides a comprehensive understanding of vehicle electrical systems. These systems include windshield wipers, power windows and locks, gauges, air bags, radio frequency, anti-theft and multiplexing. Emphasis will be placed on mastering the use of wiring diagrams. Two hours lecture/discussion and two hours lab a week.

AMT 235 — Automotive Transmission II (3)**Prerequisite:** AMT 225

Inspection, construction, operation, and diagnosis of automatic transmissions, transaxle, and driveline electrical components and controls. Includes fundamental theory, operation, construction, inspection, and diagnosis of switches, sensors, solenoids, motors, and control devices. Includes theory of hydraulics, in-depth service, overhaul procedures, and diagnosis. Two hours lecture/discussion and two hours lab a week.

BIOLOGY (BIO)

Successful completion of the laboratory section of a science course depends on the knowledge gained from the lecture section. A student must be co-enrolled or have completed the lecture section of a science course to remain enrolled in the associated laboratory section.

If for any reason a student is withdrawn or withdraws from the lecture section of a course during the semester, the student will be automatically withdrawn from the co-enrolled laboratory section, no matter what the student's grade may be in the laboratory section up to that point.

Students will not be allowed to add back the laboratory section of the course without the lecture section.

BIO 101 — Environmental Biology (3)**Prerequisite:** None

An introductory course of study of the basic principles and dynamics of ecosystems. The effects of human resource use are highlighted. This course includes an investigation of pollution, population, and natural resource issues. Completion of an environmental project is required. Three hours lecture/discussion a week. **IAI: L1 905**

BIO 102 — Environmental Biology Laboratory (1)**Prerequisite:** BIO 101 or concurrent enrollment

A laboratory class designed to accompany BIO 101. Basic ecological principles as well as resource management will be studied through field trips, field studies, laboratory analysis, and student projects. Two hours lab per week.

IAI: L1 905L**BIO 103 — General Biology (3)****Prerequisite:** Appropriate placement test scores, or ENG 089 AND (MAT 066 or MAT 068 or MAT 096) with grades of "C" or higher.

An introductory course of study of biological science. This course includes an investigation of the basic principles of the study of life including: molecular biology, cell structure and function, genetics, evolution, and ecology. Not recommended for students intending to major in biology. Three hours lecture/discussion a week. **IAI: L1 900**

BIO 105 — General Biology Laboratory (1)**Prerequisite:** BIO 103 or concurrent enrollment

Optional laboratory to accompany BIO 103. Two hours lab a week. **IAI: L1 900L**

BIO 109 — Human Biology (3)**Prerequisite:** None

An introductory course of study of the organization and functioning of the human body and the role of humans in the natural community. Current topics relating to human health are incorporated. Three hours lecture/discussion a week. **IAI: L1 904**

BIO 110 — Human Biology Laboratory (1)**Prerequisite:** BIO 109 or concurrent enrollment

Laboratory experience to accompany BIO 109, Human Biology. Laboratory will include microscope use, study of human cells and tissues, dissection and study of organs, tissues and systems of the vertebrate body for comparison to human systems, and other exercises to enhance the study of the biology of humans. Two hours lab a week. **IAI: L1 904L**

BIO 201 — Biology Principles I (4)**Prerequisite:** CHE 210 or concurrent enrollment

This course is the first of a two-semester sequence intended for pre-professional students and those majoring in the Biological Sciences. This course explores biological function at the molecular and cellular level. Topics include basic chemistry and thermodynamics, the relationship between molecular and cellular form and function, basic metabolism and physiology, biological information flow, genetics, biotechnology, and the structure and evolution of genomes. Three hours of lecture/discussion and three hours of laboratory investigation per week. **IAI: L 1910L BIO 910**

BIO 202 — Biology Principles II (4)**Prerequisite:** BIO 201 with a grade of "C" or higher

This course is the second of a two-semester sequence intended for pre-professional students and those majoring in the Biological Sciences. This course explores biological function from the organismal to the ecosystem level. Topics include mechanisms of micro- and macro-evolution, organismal diversity, the relationship between organismal structure and function, animal behavior, and the ecology of populations, communities, and ecosystems. Three hours of lecture discussion and three hours of laboratory investigation per week. **IAI: L 1910L BIO910**

BIO 213 — Introductory Microbiology (4)**Prerequisite:** (BIO 103 and BIO 105) or BIO 201 with grades of "C" or higher.

This course will explore the fundamentals of microbiology with an emphasis on bacteriology and will include aspects of molecular biology, parasitology, virology, mycology, bacterial genetics, immunology, and pathogenic microbiology. The laboratory portion will reinforce material covered in lecture and provide hands-on experience working with microorganism and relevant clinical diagnostic tests. Three hours lecture/discussion and three hours lab a week. Limited Transfer – See advisor for more information.

BIO 258 — Anatomy and Physiology I (4)**Prerequisite:** (BIO 103 and BIO 105) or BIO 201 with minimum grades of "C".

This is the first semester of a two semester sequence in human Anatomy and Physiology. A body systems approach is used with emphasis on the contribution of each body system to the maintenance homeostasis and the relationship between form and function of body organs. This course covers basic chemistry, cell biology, histology and the skeletal, muscular and nervous systems. Three hours per week are allotted for hands on laboratory experience. The laboratory includes human cadaver study. Three hours lecture/three hours lab a week. Limited Transfer – See advisor for more information.

BIO 259 — Anatomy and Physiology II (4)**Prerequisite:** BIO 258 with minimum grade of "C".

This is the second semester of a two semester sequence in human Anatomy and Physiology. A body systems approach is used with emphasis on the contribution of each body system to the maintenance homeostasis and the relationship between form and function of body organs. This course covers endocrine, cardiovascular, lymphatic, digestive, respiratory, urinary, and reproductive systems. Three hours per week are allotted for hands on laboratory experience. The laboratory includes human cadaver study. Three hours lecture/three hours lab per week. Limited Transfer – See advisor for more information.

BUSINESS (BUS)

BUS 101 — Introduction to Business (3)**Prerequisite:** None

Survey of the business field for business and non-business majors interested in a broad knowledge of its organization and functions. Designed to give an understanding of the principles, policies, problems, and operations of business. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

BUS 106 — Business Seminar (.5-3)**Prerequisite:** None

Designed to meet special student and community needs in business areas. Developed upon request for the purpose of meeting the needs of specific situations. Credit determined on contact hour basis. Repeatable three times up to a maximum of twelve credit hours.

BUS 107 — Practical Business Principles (3)

Prerequisite: None

This course presents a survey of and introduction to a variety of aspects of business environments and their operating principles in the local and surrounding communities. The students will be exposed to a broad knowledge of diverse organizations, their function in the business community, and the specific role that fundamental business concepts play in an organization's success and growth. The course is designed to provide a first-hand understanding of the principles, policies, challenges and career opportunities present in the corporate structure from local business leaders. Three hours lecture/discussion per week. **Note: This course is typically offered as a Kishwaukee Education Consortium (KEC) course.**

BUS 120 — Business Mathematics (3)

Prerequisite: None

Review of fundamental mathematical processes for the business person and consumer. A study of discounts, commissions, depreciation, overhead, interest, federal income tax, loans, ratios, graphs, stocks, bonds, and simple statistical measures. Three hours lecture/discussion a week. (FA)

BUS 130 — Human Relations (3)

Prerequisite: None

Study of motives, attitudes, and characteristics of people relating to their performances in the world around us. Emphasis on life management. Three hours lecture/discussion a week.

BUS 150 — Legal/Social Environment of Business (3)

Prerequisite: None

A study of the legal and social environment of business, with emphases on business ethics and corporate social responsibility. Areas of concentration include ethics and morality, governmental regulation of business, securities law, consumer protection law, labor law, and employment law. Three hours lecture/discussion a week.

BUS 256 — Business Law (3)

Prerequisite: None

Introduction to the legal system as it affects business activity. Areas of concentration include formation and nature of contracts, the agency relationships, and the Uniform Commercial Code Law of Sales and Commercial Paper. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

CHEMISTRY (CHE)

Concurrent enrollment in or successful completion of the lecture component of a lecture/laboratory science course combination is required for continued enrollment in and completion of the associated laboratory section. Student withdrawal from the lecture component of the course for any reason will automatically result in the withdrawal from the laboratory section of the associated course, regardless of the grade earned in the laboratory section up to that point. Students will not be allowed to add back the laboratory section once automatically withdrawn.

CHE 110 — Basic Chemistry (3)

Prerequisite: Appropriate placement test scores, or MAT 086 or MAT 098 with a grade of "C" or higher. Designed for students with no previous background in chemistry.

This is a one-semester introductory general education course in basic chemistry for non-chemistry majors, occupational, nursing, and allied health students. Topics include measurement, matter, atomic structure, chemical bonding, nomenclature, stoichiometry, and chemical equations. Concepts discussed in this course lay a foundation for surveying the role of chemistry in foods, agriculture, plastics, drugs, and our environment. Students without a year of high school chemistry intending to enroll in CHE 210 should enroll in this course. Three hours lecture/discussion a week. **IAI: P1 902**

CHE 111 — Basic Chemistry Laboratory (1)

Prerequisite: CHE 110 with a grade of "C" or higher or concurrent enrollment in CHE 110.

A series of laboratory experiments designed to accompany CHE 110. Students without high school chemistry intending to take CHE 210 should enroll in this course. One three-hour lab a week. **IAI: P1 902L**

CHE 210 — General Chemistry I (5)

Prerequisite: CHE 110, CHE 111 and MAT 150 with grades of "C" or higher. (Completion of two semesters or a year of a high school chemistry with a grade of "C" or higher may meet prerequisite requirement of CHE 110 and CHE 111.)

Topics include the periodic table of the elements, atomic structure, basic concepts of quantum theory, bonding, stoichiometry of compounds and reactions, thermochemistry, the gaseous state, basic concepts of the liquid and solid states. Recommended for science, engineering, and pre-professional majors. Four hours lecture/discussion and three hours lab a week. **IAI: P1 902L, CHM 911**

CHE 211 — General Chemistry II (5)

Prerequisite: CHE 210 with a grade of "C" or higher

Topics include solutions, acids and bases, chemical equilibrium, acid-base equilibria, solubility equilibria, kinetics, thermodynamics, electrochemistry, coordination compounds, and descriptive topics in inorganic chemistry. Four hours lecture/discussion and three hours lab a week. **IAI: CHM 912**

CHE 270 — Organic Chemistry I (3)**Prerequisite:** CHE 211 with a grade of "C" or higher

Topics include structure, bonding and molecular properties; structural and stereoisomerism; nomenclature and reactivity of alkanes, cycloalkanes, alkenes, conjugated dienes and alkynes; and mass, UV, IR and NMR spectrometry. Three hours lecture/discussion a week. **IAI: CHM 913**

CHE 271 — Organic Chemistry II (3)**Prerequisite:** CHE 270 with a grade of "C" or higher

Topics include mass, UV, IR and NMR spectrometry; nucleophilic substitution and elimination reaction mechanisms of alkyl halides; organometallic compounds; aromatic and electrophilic aromatic substitution reactions of benzene; alcohols, ethers and phenols; aldehydes, ketones, carboxylic acids, carboxylic acid derivatives, amines and dicarbonyl compounds; carbohydrates, amino acids, proteins. Three hours lecture/discussion a week. **IAI: CHM 914**

CHE 272 — Organic Chemistry Laboratory I (2)**Prerequisite:** CHE 270 with a grade of "C" or higher or concurrent enrollment in CHE 270

A series of laboratory experiments to accompany CHE 270. Experiments are designed to learn the basis of organic techniques in the laboratory and will relate to the topics discussed in CHE 270. Five hours lab a week. **IAI: CHM 913**

CHE 273 — Organic Chemistry Laboratory II (2)**Prerequisite:** CHE 271 with a grade of "C" or higher or concurrent enrollment in CHE 271

A series of laboratory experiments to accompany CHE 271. Experiments are designed to learn the techniques of organic synthesis. Five hours lab a week. **IAI: CHM 914**

COMMUNICATION (COM)

COM 100 — Oral Communication (3)**Prerequisite:** Appropriate placement test scores, or ENG 089 or ENG 109 with a grade of "C" or higher, or ENG 099 or ENG 103 with a grade of "C" or higher

An introduction to the fundamentals of oral communication and the roles of speech, speaker and listener in the broad concept of communication. This course emphasizes the composition and presentation of various oral messages. Three hours lecture/discussion a week. **IAI: C2 900**

COM 108 — Communication in the Workplace (3)**Prerequisite:** None

This course is an introduction to communication strategies, behaviors, and expectations in the workplace. This course emphasizes diverse skill sets required across workplace environments and professional situations. Workplace skills emphasized in the course include self-monitoring, listening, conflict and conflict resolution, group work, interpersonal interactions, giving and receiving feedback, intercultural communication, customer service, evaluation and critical thinking. Three hours lecture/discussion a week.

COM 111 — Speech Team Practicum I (1)**Prerequisite:** None

An introduction to the fundamentals of researching, writing, and preparing a speech and/or the procedures for selecting, editing, and performing literary works for oral interpretation in forensic competition. Three hours of lab each week. Hours to be arranged. Limited Transfer – See advisor for more information.

COM 112 — Speech Team Practicum II (1)**Prerequisite:** COM 111

A continuation of COM 111. In addition to addressing the fundamentals of preparing pieces for forensic competition in any genre, this course requires completion of a project to benefit the forensics team. Projects may vary and are arranged with the instructor. Three hours of lab each week. Hours to be arranged. Limited Transfer – See advisor for more information.

COM 113 — Speech Team Practicum III (1)**Prerequisite:** COM 112

A continuation of COM 112. In addition to addressing the fundamentals of preparing pieces for forensic competition in any genre, this course requires supervised coaching of teammates' performances. Three hours of lab each week. Hours to be arranged. Limited Transfer – See advisor for more information.

COM 150 — Intro to Mass Communications (3)**Prerequisite:** None

An introductory course open to both journalism and non-journalism students. This course includes a brief history of different media, the roles of the mass media in society, the cultural influences of the mass media on society, changing technology and its impact on the media and on society as consumers of media, and the problems facing the media today, are explored. Three hours lecture/discussion a week. **IAI: MC 911**

COM 151 — Publications Productions I (1)**Prerequisite:** None

An introduction to newspaper design, both print and online. Students will work on the production of the Kishwaukee College newspaper, the *Kaleidoscope*, in various capacities: news writing, sports writing, feature writing, photography, advertising sales and design. Three hours lab a week. Limited Transfer – See advisor for more information.

COM 152 — Publications Productions II (1)**Prerequisite:** COM 151

A continuation of COM 151. Students will further develop skills related to the production of the Kishwaukee College newspaper, the *Kaleidoscope*. This course is designed to widen abilities and promote greater responsibilities in journalistic skill areas: news writing, sports writing, feature writing, photography, editing, advertising sales and design. Three hours lab a week. Limited Transfer – See advisor for more information.

COM 153 — Publications Productions III (1)

Prerequisite: COM 152

Advanced work on the production of the Kishwaukee College newspaper, the *Kaleidoscope*. This course is designed to prepare students for leadership roles in newspaper production and journalistic skill areas: news editing, photo editing, publication design, advertising management, staff management. May be repeated one time. Three hours lab a week. Limited Transfer – See advisor for more information.

COM 200 — Advanced Public Speaking (3)

Prerequisite: COM 100 with a grade of “C” or higher

Preparation and presentation of a variety of types of speeches. This course emphasizes developing skills beyond the basic course. Assignments will address all phases of the preparation, presentation, and delivery aspects of public speaking. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

COM 201 — Small Group Communications (3)

Prerequisite: None

A study of group and leadership dynamics. Students study the dynamics of team development. Assignments include researching a problem, sharing information, arranging ideas, and assuming group leadership through a series of projects dealing with topical issues. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

COM 203 — Interpersonal Communication (3)

Prerequisite: None

A study of communication theory and its application to interpersonal relations. Relationship skills will be explored, analyzed, and practiced. This course covers the development and related dynamics of relationship development, maintenance, and termination. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

COM 204 — Argumentation and Debate (3)

Prerequisite: None

A study of the structure of argument and reasoning. This course aims to develop critical thinking, advocacy, and the use of evidence and refutation. Students practice skills in persuasive speaking and debate in class through individual and team projects. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

COM 220 — Newswriting (3)

Prerequisite: None

An introduction to the principles and practices of news writing. Emphasis is placed on news values, news gathering, news writing, interviewing, and grammar. Typing ability of 25 wpm is recommended. Two hours lecture/discussion and two hours lab a week. **IAI: MC 919**

COM 298 — Topics In Communication (1-3)

Prerequisite: None

A study of topics in communications. Topics may include organizational communication, persuasion, communication barriers, non-verbal communications, use of media in presentations, or business communication. One to three hours lecture/discussion a week. Repeatable three times as topics change. Limited Transfer – See advisor for more information.

COMPUTER-AIDED DESIGN TECHNOLOGY (CAD)

CAD 106 — CAD Seminar (.5-3)

Prerequisite: None

Special studies course designed to meet student and community needs. Available upon request in specific situations which do not comply with regular course offerings but do merit credit and provide for occupational needs. Credit determined on a contact hour basis. Repeatable three times up to a maximum of twelve credit hours.

CAD 131 — Print Reading for Construction Trades (3)

Prerequisite: None

Introduces students to the process of interpreting information in architectural construction drawings. Develops communication skills that allow for interpretation of graphical data in English. Students develop abilities in the use of 2-dimensional/3-dimensional visualization skills and mathematical calculation skills to decipher drawing data. Course includes practice in reading professionally prepared architectural construction drawings. Recommended for architectural or engineering degree seekers and students interested in construction. Three hours lecture/discussion a week.

CAD 141 — Technical Drafting CAD (4)

Prerequisite: None

In depth coverage of the graphic language of industry through the use of sketching and CAD software. Students will use 2D CAD software to create orthographic projections, sections, auxiliaries, revolutions, manufacturing processes, dimensioning, tolerancing thread representations, and pictorial projections. Using these concepts the students will be able to produce industry standard working drawings. Two hours lecture and four hour lab a week.

CAD 151 — Fundamentals of CAD/AutoCAD (3)

Prerequisite: None

Step by step instructions in the use of the basic operations of Autodesk's AutoCAD system. Designed to provide a basic understanding of two-dimensional computer-aided design procedures through hands on microcomputer experience. Basic concepts of drafting and design are introduced. Two hours lecture/discussion and two hours lab a week. May be repeated three times.

CAD 152 — Fundamentals of CAD/Inventor (3)

Prerequisite: None

Step by step instruction in the use and basic operations of Autodesk's Inventor 3D modeling software. Designed to provide a basic understanding of parametric modeling procedures through hands on experience. Two hours lecture/discussion and two hours lab a week.

CAD 153 — 2D Mechanical CAD (4)

Prerequisite: CAD 141, CAD 151

Application of concepts of computer-aided drafting to mechanical drafting. Applications include sectional drawings of machine parts, cams and gearing, threads and fasteners, precision dimensioning, and working drawings. Two hours lecture/discussion and four hours lab a week.

CAD 154 — 2D Architectural CAD (4)**Prerequisite:** CAD 131, CAD 141

Instruction in the production of architectural drawings on a computer-aided drafting system. Includes an overview of commonly used architectural design information. The major application project includes an entire set of architectural plans. Two hours lecture/discussion and four hours lab a week.

CAD 171 — Fundamentals of CAD-SolidWorks (3)**Prerequisite:** None

Step-by-step instruction in the use of the basic operations of the SolidWorks CAD system. Designed to provide a basic understanding of CAD procedures through hands-on microcomputer experience. Two hours lecture/discussion and two hours lab a week. May be repeated three times.

CAD 172 — Intermediate CAD-SolidWorks (3)**Prerequisite:** CAD 171 or CAD 152

A continuation of CAD171. Step by step instruction in the more advanced capabilities of Dassault Systèmes' SolidWorks computer-aided design software. Students will learn creation of complex models using SolidWorks advanced tools for creation of parts, surfaces, simulations, sheet metal, top-down assemblies and core and cavity molds. Two hours lecture/discussion and two hours lab a week.

CAD 251 — Modeling Rendering & Animation (3)**Prerequisite:** CAD 152 or CAD 171

Covers computer-aided design (CAD) software's ability to create wireframe, surface, and solid models. Models may then be shaded, rendered, and animated. Students will learn output methods to color hard copy and magnetic copy of animation to the Internet. Two hours lecture/discussion and two hours lab a week.

CAD 253 — 3D Mechanical CAD (4)**Prerequisite:** CAD 153 or concurrent enrollment

A continuation of CAD 153. Instruction in mechanical design principles. Students work through actual mechanical design problems and learn the interrelationships between design and industrial manufacturing. Two hours lecture/discussion and four hours lab a week.

CAD 254 — 3D Architectural CAD/Revit (4)**Prerequisite:** CAD 154 or concurrent enrollment

Instruction in residential and light commercial design principles. Students work through actual architectural design problems and learn the interrelationship between design and the construction trades. Two hours lecture/discussion and four hours lab a week.

CAD 270 — Drafting and Design Internship (.5-3)**Prerequisite:** Instructor consent.

Internship training for drafting and design students in local area industries, government offices, or architectural/construction firms. Students must work two hundred twenty-five (225) supervised hours of employment. Hours to be arranged.

COMPUTER INFORMATION SYSTEMS (CIS)

CIS 101 — Introduction to Computers (3)**Prerequisite:** None

This course surveys computer technology and its current and future use in business, industry, and the home. Discussion topics include hardware and software, networking and the Internet. Students will use personal computers for an introduction to word processing, spreadsheets, database, and presentation software. Three hours lecture/discussion a week.

CIS 106 — Computer Information Systems Seminar (.5-3)**Prerequisite:** None

A special studies course designed to meet student and community needs. Available upon request in specific situations which do not comply with regular course offerings, but do merit college credit and provide for occupational needs. Credit determined on a contact hour basis. Repeatable three times.

CIS 111 — Intro to Programming: Python (3)**Prerequisite:** None

An introduction to programming designed to introduce common programming concepts to prepare for traditional programming courses. The topics to be covered include: structured programming concepts, pseudocode, Boolean logic, file processing, interactive input and output, and an introduction to object-oriented programming concepts. Students will be expected to solve some problems using a programming language. Three hours lecture/discussion a week.

CIS 118 — Web Site Development (3)**Prerequisite:** None

An introductory course in the fundamentals of web site design and development using HTML. Students will work with a hypothetical client to create a functional, effective, and visually appealing web site. Topics include web site planning, HTML, the user experience, design principles, multimedia elements, and publishing. This class does not use an HTML editor. Three hours lecture/discussion a week.

CIS 119 — JavaScript (3)**Prerequisite:** None

This course covers the use of client-side (web browser) JavaScript. Basic elements of the language such as syntax, variables, functions, selection, repetition, and arrays will be covered. Among the uses explored will be the control of document appearance and content, interaction with the user, validation of form data, navigation and modification of the DOM, and the use of cookies and web storage. Three hours lecture/discussion a week.

CIS 123 — Management Information Systems (3)**Prerequisite:** None

This course introduces topics involving the use of information systems for business purposes. Topics include the use of word processing, spreadsheet, database management, and presentation software to solve problems. Communication software, responsible use of the Internet, creating a basic web site, and online collaboration and safety will also be covered. Three hours lecture/discussion a week. **IAI: BUS 902**

CIS 140 — Networking Fundamentals (4)**Prerequisite:** None

This course is an introduction to Local Area Networks (LANs). Topics covered include: basic networking concepts, hardware and software components, protocols, standards, network topologies, transmission media, virtualization, wireless technologies, Security and Network Administration. Students will gain the technical skills to begin a career in installing, configuring and troubleshooting computer networks. Students will also be introduced to the fundamentals of network planning and design. Primary focus of the class is the training necessary to complete the Net+ certification exam. Four hours lecture/discussion/guided lab per week.

CIS 150 — C++ Programming I (3)**Prerequisite:** Appropriate placement test scores or MAT 086 or MAT 098 with a grade of "C" or higher

The first course in the C++ language sequence. It emphasizes a disciplined approach to problem solving and algorithm development. Topics will include: input, output, sequence, selection, repetition, functions, arrays, data abstraction, pointers, text manipulation, records, and files. Program design, style, documentation, and testing will be practiced. Programming assignments will be completed outside of class. Three hours lecture/discussion a week.

IAI: CS 911**CIS 160 — Java Programming I (3)****Prerequisite:** Appropriate placement test scores or MAT 086 or MAT 098 with a grade of "C" or higher

This is the first course in the Java language sequence. It emphasizes a disciplined approach to problem solving and algorithm development. Input and output will be done using the command line, a graphical user interface, and files. Topics include selection, repetition, methods, arrays, text manipulation, data abstraction, and object oriented programming. Program design, style, documentation, and testing will be practiced. Three hours lecture/discussion a week. **IAI: CS 911**

CIS 170 — Introduction to UNIX (3)**Prerequisite:** None

This course covers the fundamentals of UNIX-like operating systems and administration of a multi-user Linux server. The course covers basic system, file system, text editing commands, and shell scripting. Other topics include Linux installation, user/group management, simple networking and configuration, and a general overview of UNIX security issues. (Previous programming experience recommended). Three hours lecture/discussion a week.

CIS 182 — Windows Server Fundamentals I (3)**Prerequisite:** None

The first class in a series of classes to prepare students for Microsoft Server certification. Through lecture and hands-on lab work students cover materials required to pass the first test in the Microsoft Server series of exams. Class will be structured based upon the current released version of Windows Server. Three hours lecture/discussion a week.

CIS 190 — Google IT Support (6)**Prerequisite:** None

This course teaches the skills necessary to work in an entry level IT support role. Google's online IT Support Professional curriculum is used. All course material is online. Open lab and instructor support are scheduled on campus and by email during the week. This course covers a wide range of topics including how computers work, the duties of IT support staff, installing/configuring/updating software, setting up user accounts and permissions, authentication and authorization techniques, setting up computer and account policies, working with multiple operating systems, networking devices and protocols, security evaluation and best practices, disaster recovery, remote connections, evaluating cloud-based alternatives, and troubleshooting techniques. Four hours lecture/discussion a week and four hours lab per week.

CIS 206 — CIS Advanced Topics Seminar (1-4)**Prerequisite:** Dependent on topic

An advanced special studies course designed to allow advanced topics and new technologies to be offered based on demand. Available upon request in specific situations which do not comply with regular course offerings, but do merit college credit and provide for occupational needs. Credit determined on a contact hour basis. Repeatable three times.

CIS 236 — CIS Project (3)**Prerequisite:** Instructor consent

This course provides an individualized experience working on an information technology project related to a student's particular field of interest. The student will apply skills acquired in prior courses completed.

CIS 250 — C++ Programming II (3)**Prerequisite:** CIS 150

The second course in the C++ language. Abstract data types will be used in the design and implementation of solutions to large-scale problems. Topics include: classes, inheritance, polymorphism, and encapsulation: files and pointers, scope, blocks and dynamic memory; recursion; data structures including stacks, lists, queues, trees; graphs; text processing; and, searching and sorting algorithms. Programming assignments will be completed outside of class. Three hours lecture/discussion a week. **IAI: CS 912**

CIS 260 — Java Programming II (3)**Prerequisite:** CIS 160

This is the second course in the Java language sequence. Topics include object-oriented programming, recursion, files and streams, exceptions, string handling, the graphical user interface, searching and sorting algorithms, algorithm complexity, and data structures. Data structures covered will include lists, stacks, queues, trees, and graphs. Three hours lecture/discussion a week. **IAI: CS 912**

CIS 265 — Server-side Programming (3)**Prerequisite:** None

This course covers programming applications for the Internet. The programming language used may vary by course section. Topics will include an in-depth study of the specific language being used, dynamic creation of web pages, session management, file access, database interaction, and security. Basic database design and SQL will also be covered and used to create applications. Completion of one programming course or previous programming experience is expected. Repeatable three times as the programming language used changes. Three hours lecture/discussion a week.

CIS 282 — Windows Server II Networking (3)**Prerequisite:** CIS 182

The second course in a series to prepare students for Microsoft Server certification. Through lecture and hands-on lab work students cover materials required to pass the second test in the Microsoft Server series of exams. Class will be structured based upon the current released version of Windows Server. Three hours lecture/discussion/guided lab a week.

CIS 283 — Network Security+ (3)**Prerequisite:** CIS 282 or concurrent enrollment

Fundamentals of network security principles and implementation. Variety of security topologies will be discussed as well as technologies and concepts used for providing secure communications channels, secure internetworking devices, and network medium. The daily tasks involved in managing and troubleshooting security technologies will also be covered. Hands-on assignments will reinforce the concepts covered. Successful completion of this course prepares students to take the current CompTIA Security+ certification exam. Three hours lecture/discussion/guided lab a week.

CIS 285 — Cybersecurity (3) [pending approval]**Prerequisite:** CIS 283

This course covers essential skills needed to detect and prevent cybersecurity issues facing organizations through analysis of techniques used to breach network security and application of methods to protect system integrity. These include vulnerability assessment, penetration testing, and defense against threats to network devices, servers, and software. Three hours lecture/discussion a week.

CIS 296 — CIS Internship (3)**Prerequisite:** Instructor consent.

This course provides actual work experience in the information technology field. The student will be expected to utilize class and lab competencies in a practical work environment. A minimum of 225 hours are required for completion of course.

COUNSELING & STUDENT DEVELOPMENT (CSD)

CSD 100 — The College Experience (2)**Prerequisite:** None

The purpose of this course is to assist students in making a successful transition into the college experience. Students will be exposed to key academic terms, policies, and resources that foster student engagement and promote academic success. Topics include: exposure to college culture and expectations, setting goals, career and college planning, time management, study strategies, utilizing campus resources, diversity, self-reflection, and motivation. Two hours lecture/discussion a week. Limited Transfer – See advisor for more information.

CSD 101 — Career Planning (2)**Prerequisite:** None

Designed to assist students in the selection of careers which fit each person's interests, values, skills, and personal goals; and to assist in learning techniques necessary for finding employment in today's market. Topics include self-awareness, decision making, occupational awareness, and job search strategies. Two hours lecture/discussion a week. Limited Transfer – See advisor for more information.

CRIMINAL JUSTICE (CRJ)

CRJ 101 — Introduction to Criminal Justice (3)

Prerequisite: None

A survey and analysis of the criminal justice system, including an historical and philosophical overview of its development, with special emphasis on the system's primary components and the relationship among these components in the administration of criminal justice in America. Three hours lecture/discussion a week. **IAI: CRJ 901**

CRJ 106 — Criminal Justice Seminar (.5-3)

Prerequisite: None

Special studies course designed to meet career education needs of students, employers, and various community agencies. Available upon request for specified situations. Credit determined on a contact hour basis. Repeatable three times up to a maximum of twelve credit hours.

CRJ 107 — Criminal Law I (3)

Prerequisite: None

Examination and analysis of the structure and function of substantive criminal law and the principles of criminal law, including the acts, mental state, and attendant circumstances that are necessary elements of crime. Three hours lecture/discussion a week.

CRJ 109 — Traffic Law Enforcement (3)

Prerequisite: None

Traffic law enforcement, regulation, and control; fundamentals of traffic accident investigation; Illinois Vehicle Code. Three hours lecture/discussion a week.

CRJ 110 — Traffic Accident Investigation (3)

Prerequisite: None

Designed to provide an understanding of traffic problems, the police role, and why accidents must be investigated. Students accurately identify and describe accidents and record data necessary for planning an effective accident prevention program. Three hours lecture/discussion a week.

CRJ 119 — Criminal Justice Administration (3)

Prerequisite: None

Development of integral knowledge of supervision and its relationship to managing personnel. Methodology of supervision practiced on a solid foundation of knowledge with mastery of a wide variety of management skills. Three hours lecture/discussion a week.

CRJ 151 — Narcotics and Drug Enforcement (3)

Prerequisite: None

Basic course in narcotic and drug enforcement. Examines overt and covert enforcement by police. Covers drug identification, controlled substance act, cannabis control act, major case law, interdiction programs, and ethics in narcotic law enforcement. Three hours lecture/discussion a week.

CRJ 152 — Community Oriented Policing (3)

Prerequisite: None

A study of the relationships between police and the community served. Emphasis on cultural, ethnic, and varying economic and political strengths and weaknesses. Three hours lecture/discussion a week.

CRJ 160 — Field Report Writing (3)

Prerequisite: ENG 103 or ENG 109

Completion of forms, report writing, note taking, and accurate recording of statements and confessions are practiced. Weekly writing is critiqued for clarity, accuracy, and description details. Oral reports are also included in this course. Three hours lecture/discussion a week.

CRJ 170 — Crisis/Conflict Mediation (3)

Prerequisite: None

Contemporary communication theories and practices in Criminal Justice; develops a working knowledge of communications between officers and incarcerated and arrested individuals, using various practices of communication skills which will include interpersonal communication skills and verbal judo. Three hours lecture/discussion a week.

CRJ 201 — Criminal Investigation (3)

Prerequisite: None

This course acquaints the student with the principles, procedures, and techniques fundamental to the investigation of a crime. An introduction to the coordination of activities, the complex responsibilities of the investigator, the role of the criminal justice system, and case preparation. Three hours lecture/discussion a week.

CRJ 207 — Criminal Law II (3)

Prerequisite: CRJ 107

Study of the criminal code of the State of Illinois. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

CRJ 209 — Juvenile Delinquency/Juvenile Justice (3)

Prerequisite: None

History and philosophies of society's reaction to juvenile behavior and problems. Interaction among the police, judiciary, and corrections are examined within the context of cultural influences. Theoretical perspectives of causation and control are examined. Three hours lecture/discussion a week. **IAI: CRJ 914**

CRJ 211 — Introduction to Corrections (3)

Prerequisite: None

An overview and analysis of the American correctional system; history, evolution, and philosophy of punishment and treatment; operation and administration in institutional and non-institutional settings; and issues in correctional law. Three hours lecture/discussion a week. **IAI: CRJ 911**

CRJ 215 — Gangs and Security Threat Groups (3)

Prerequisite: None

This course is an introduction to gangs and security threat groups for Criminal Justice students and practitioners. The course will explore the history, structure, and activities of these groups in the community and the correctional system. Students will discover methods used to identify, control, and prosecute members of these groups. Three hours lecture/discussion a week.

CRJ 221 — Constitutional Law for Police (3)

Prerequisite: None

Intensive study and analysis of the Constitution of the United States and court decisions which interpret the Constitution. Emphasis on court decisions which determine the admissibility of evidence in criminal cases and which affect police procedures. A consideration of the criminal procedure process with emphasis on the role of law enforcement. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

CRJ 230 — Ethics for Criminal Justice (3)

Prerequisite: None

This course will examine the criminal justice system through an ethics perspective. Topics will include: a discussion of terminology; development of moral and ethical behavior, issues of justice, laws, punishment, and social control; corruption and “codes”; and, ethics for practitioners within the criminal justice system. Class discussions of moral dilemmas are essential to the application of theory. Three hours lecture/discussion a week.

CRJ 250 — Criminalistics I (3)

Prerequisite: None

Basic procedures for processing, investigating, and preserving evidence at a crime scene. Dissemination of function related data to the proper police agencies with basic testimony procedures. Three hours lecture/discussion.

CRJ 251 — Criminalistics II (3)

Prerequisite: CRJ 250

Advanced applications of procedures for the investigation; processing and preservation of evidence at a crime scene are presented. A comprehensive realm of forensics and the technology of the modern crime laboratory to the non-scientist. Dissemination of function related data to the proper police agencies, prosecutor and course is identified. Two hours lecture/discussion and two hours lab a week.

CRJ 288 — CRJ Internship Orientation (1)

Prerequisite: None

Designed primarily for occupational students in Criminal Justice. Prepares students for the first internship course, and includes information on placement, interviews and the internship manual. One hour lecture/discussion a week.

CRJ 290 — CRJ Internship (3)

Prerequisite: CRJ 288

On-the-job training in a law enforcement related job to test the abilities of the student to work in the field. Requires 225 hours of supervised employment experience and approval from the class coordinator. Course may be repeated one time.

DIESEL POWER TECHNOLOGY (DPT)

DPT 101 — Diesel Power Technology Careers (1)

Prerequisite: None

Study of diesel power equipment technology employment opportunities in various occupations. Students gather occupational information, develop educational goals, prepare for the internship, and improve employability. One hour lecture/discussion per week.

DPT 105 — Diesel Power Tech Seminar (.5-3)

Prerequisite: None

Special course on topics relevant to the diesel power industry designed to meet specific community and student needs. Credit determined on a contact hour basis. Repeatable three times.

DPT 154 — Truck Brakes and Suspension (4)

Prerequisite: None

In-depth study of brake systems used on commercial trucks. Includes shell hubs and bearings, general hydraulic brake service, single and dual cylinders, single and dual piston drum brakes, single and double wedge air brakes, cam-type air brakes, single and tandem vacuum brake boosters, and parking brakes. Two hours lecture/discussion and four hours lab a week.

DPT 172 — Basic Engine Overhaul (4)

Prerequisite: None

Principles of operation and repair of two-cycle, four-cycle, gas and diesel engines. Students experience the safe use of equipment and tools such as head master machine, valve guide knurling, pin hone machine, and sleeve pullers as they apply to machinery and equipment overhauls. Student disassembles and reassembles lab engine. Two hours lecture/discussion and four hours lab a week.

DPT 173 — Mobile Systems Electronics I (3)

Prerequisite: None

Principles involved in the application of electrical energy to power equipment and power units. Includes information on repair, operation and care of storage batteries, charging circuits, starting circuits, and ignition circuits. Two hours lecture/discussion and two hours lab a week.

DPT 175 — Introduction to Tool Safety and Usage (2)

Prerequisite: None

A study of tools and shop equipment commonly used by diesel technicians in the repair industry. Over 35 tools and pieces of equipment will be covered including: hand tools, air tools, precision measuring tools, lifting equipment, and engine rebuilding tools. Emphasis will be placed on safe usage to minimize personal injury and physical damage. One hour lecture/discussion and two hours lab a week.

DPT 176 — Basic Transmissions and Final Drives (3)**Prerequisite:** None

A study of the power train and its working principles. Instruction includes trouble shooting, repairing and maintaining clutches, mechanical transmissions, hydraulic assist transmissions, hydrostatic drives, torque converters, and final drives. Two hours lecture/discussion and two hours lab a week.

DPT 177 — Introduction to Diesels (3)**Prerequisite:** None

A detailed study of diesel operating principles and how diesel engines differ from other types of internal combustion engines. Includes trouble shooting, maintenance and testing of fuel pumps, fuel filters, and nozzles. Emphasizes importance of fuel filtration, selection, and care in handling. Two hours lecture/discussion and two hours lab a week.

DPT 178 — Basic Hydraulics (4)**Prerequisite:** None

Introduction to the principles of hydraulics and application of hydraulic machinery. Includes diagnosing, testing, repairing and maintaining hydraulic pumps, valves, cylinders, motors, and accumulators. Two hours lecture/discussion and four hours lab a week.

DPT 197 — Diesel Power Tech Intern (3)**Prerequisite:** None

On the job training in the agricultural, commercial or industrial equipment business. Students use competencies and skills developed in the classroom and shop to perform maintenance and repair procedures on machines. Requires 320 hours of supervised employment experience.

DPT 199 — Small Engine Maintenance and Repair (3)**Prerequisite:** None

Introduction to the theory, operation, maintenance, and repair of all common two- and four-cycle engines. Students learn engine overhaul procedures and the use of overhaul equipment and tools, hydrostatic transmission, transaxle and differential repair. Two hours lecture/discussion and two hours lab a week.

DPT 272 — Advanced Engine Overhaul (4)**Prerequisite:** DPT 172

Overhaul of diesel and gasoline engines in a simulated equipment service shop. An engine is assigned to a student to trouble shoot, test, and repair the system and return it to service, keeping records on parts and time used in completing the job. Includes transmissions, clutches, P.T.O., electrical systems, cooling systems, and accessory equipment. Two hours lecture/discussion and four hours lab a week.

DPT 273 — Mobile Systems Electronics II (3)**Prerequisite:** DPT 173

Designed for power equipment majors to increase competence in electrical problem solving. In-depth diagnosis of electrical system circuitry problems such as generators, alternators, and starters; diagnosis of electrical system problems and other electrical systems. Two hours lecture/discussion and two hours lab a week.

DPT 274 — Vehicle Air Conditioning (3)**Prerequisite:** None

Basic theory of air-conditioning systems, valves, electrical controls, testing, and charging systems used on agricultural, trucking, and industrial equipment. Use of a demonstration system includes discharging, charging, adding oil, pump down, and testing. Testing and trouble-shooting for all types of equipment. Two hours lecture/discussion and two hours lab a week.

DPT 277 — Combine Repair (3)**Prerequisite:** None

Includes material on combine operation, assembly and field adjustment methods. Emphasis on maintenance and repair with extensive hands-on shop training. Two hours lecture/discussion and two hours lab a week.

DPT 279 — Advanced Diesels (3)**Prerequisite:** DPT 177

Study of the operation of diesel pumps and nozzles. Emphasis on trouble-shooting, repairing, maintaining and testing of injection pumps, both distribution and in-line. Testing and programming electronic engines using lap top computers, includes Caterpillar, Cummins & Detroit engines. Two hours lecture/discussion and two hours lab a week.

DPT 291 — Advanced Trans & Hydraulics (4)**Prerequisite:** None

Detailed, in depth study of diagnosis, testing, service and overhaul procedures for vehicle powertrains and hydraulic systems. Powertrain components may include manual, automated, hydrostatic, torque amplifiers, torque converters, differentials and final drives. Hydraulic components may include pumps, actuators, valves, conductors, and interpretation of corresponding hydraulic and electrical schematics. Two hours lecture/discussion five hours lab a week.

EARLY CHILDHOOD EDUCATION (ECE)

ECE 106 — Early Childhood Education Seminar (.5-3)

Prerequisite: None

A special studies course designed to meet student and community needs. Available upon request in specific situations, which are not included in regular course offerings but do merit college credit and provide for occupational needs. Credit is determined on a contact hour basis. Repeatable three times as topics change.

ECE 110 — Foundations of Early Child Ed (3)

Prerequisite: ENG 103 or ENG 109

Survey of history and philosophies of early childhood education. Modern theories of child care and education examined and compared in light of their historical development. Three hours lecture/discussion a week.

ECE 111 — The Developing Child (3)

Prerequisite: Appropriate placement test scores, or ENG 089 or ENG 109 with a grade of "C" or higher, or ENG 099 or ENG 103 with a grade of "C" or higher

Covers growth and development of the child from birth to eight. Emphasis on awareness and understanding of the child in relation to the following development areas: social, emotional, physical, cognitive, and language. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ECE 112 — Guiding Young Children (3)

Prerequisite: None

Introduction to early childhood education through observation and discussion. An overview of goals, techniques, and curriculum. Two hours lecture/discussion and two hours lab a week. **Note: Students must comply with D.C.F.S. regulations which include a background check, fingerprinting, a physical exam, and references.**

ECE 161 — Family-Community Relationships (3)

Prerequisite: None

Understanding values and strengths of parents and the community and their influence on children. Finding and using community resources for children. Three hours lecture/discussion a week.

ECE 210 — The School-Age Child (3)

Prerequisite: None

This course deals with the physical growth patterns, nutritional requirements, emotional, social, and cognitive skills of children 5-12 years old. Focuses on appropriate learning activities that promote the growth and development of school-age children while emphasizing positive guidance and classroom management techniques. Prepares individuals for caring for the school-age child in child care settings and administration of these programs. Working cooperatively with families and schools is stressed. Three hours lecture/discussion a week.

ECE 211 — Facility Organization and Supervision (3)

Prerequisite: None

Introduction to administration of child care facilities. Topics include program planning and evaluation, licensing regulations, funding, budgeting and recordkeeping, curriculum planning and supervision, and personnel management. Three hours lecture/discussion a week.

ECE 212 — Administration of Day Care Homes (3)

Prerequisite: None

Designed to acquaint the day care home provider with child care skills. Includes the business and administrative aspects of establishing and maintaining a quality day care home. Three hours lecture/discussion a week.

ECE 220 — Fostering Creative Expression in Young Children (3)

Prerequisite: None

Meaning of art and music in the child's overall development. Emphasis on the importance of these areas within the curriculum and the methods of fostering these abilities in children to aid their overall development. Three hours lecture/discussion a week.

ECE 221 — Language of the Young Child (3)

Prerequisite: None

Deals with structure and function of children's language, the language development process, and its interrelationship with and dependence on other growth processes. Includes study of methods and materials to encourage children's language development. Three hours lecture/discussion a week.

ECE 222 — Child Nutrition and Health (3)

Prerequisite: None

Basic principles of nutrition, food selection, and preparation as related to the health and well-being of the young child. Three hours lecture/discussion a week.

ECE 223 — Science/Mathematics in Early Childhood Education (3)

Prerequisite: MAT 055 or MAT 095 with a grade of "C" or higher or higher level mathematics course

Designed to develop the skills necessary to teach basic scientific and mathematical concepts to the preschool child. Emphasis on discovery through the child's natural curiosity. Three hours lecture/discussion a week.

ECE 225 — Techniques & Curriculum Plans (4)

Prerequisite: ECE 111, ECE 112 with grades of "C" or higher

A continuation of ECE 112 with limited participation. Three hours lecture/discussion and two hours lab a week.

ECE 231 — Infant/Toddler Development (3)

Prerequisite: None

Examines the theories and current research related to infant and toddler development including parent/caregiver relationships. Emphasis on developing inclusive infant/toddler programs including the selection, presentation, and use of materials and experiences consistent with current theory and research. Three hours lecture/discussion a week.

ECE 272 — Play and Motor Development (3)**Prerequisite:** ECE 111 with a grade of "C" or higher

Emphasis is placed on the importance of play and movement in the development of children within an appropriate environment. Identification and examination of types of play, recognition of appropriate materials for play, strategies for communicating the importance of play with parents and staff, and the role of the teacher in facilitating play and movement in indoor and outdoor environments. Three hours of lecture/discussion a week.

ECE 280 — Early Childhood Education Practicum I (4)**Prerequisite:** ECE 110, ECE 221, ECE 223, ECE 225 with grades of "C" or higher

Supervised practice designed to assist the child care student in moving from studying about children to working effectively with children. Study of specific and positive guidance and training techniques to aid in creating a learning atmosphere. One hour lecture/discussion a week and fifteen hours a week Practicum in a preschool or child care center.

ECE 281 — Early Childhood Education Practicum II (4)**Prerequisite:** ECE 161, ECE 222, ECE 280 with grades of "C" or higher (Instructor consent will satisfy prerequisite).

Participation in the actual work of a child development setting. Supervised practice designed to be the final step in moving from studying about children to functioning effectively with and for children. One hour lecture/discussion a week and fifteen hours a week practicum experience.

ECONOMICS (ECO)

ECO 100 — Consumer Economics (3)**Prerequisite:** None

A study of the economic concepts relative to the consumption of goods and the effective use of services, money and property. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ECO 160 — Introduction to Economics (3)**Prerequisite:** None

A study of basic forces that underlie the structure and functions of the American economy. This course surveys basic concepts, language, nature, scope, and historical trends in economics. It is not intended for students majoring in business or other areas which require an in-depth exposure to macroeconomics and/or microeconomics. Three hours lecture/discussion a week. **IAI: S3 900**

ECO 260 — Principles of Macroeconomics (3)**Prerequisite:** None

A study of the roles of business, government and households in the American economy. Other discussions include national income accounting, economic fluctuations and growth, governmental fiscal and monetary policy and basic supply-demand analysis. Three hours lecture/discussion a week. **IAI: S3 901**

ECO 261 — Principles of Microeconomics (3)**Prerequisite:** None

A study of microeconomics and the price system in the American economy. Covers product and resource pricing, monopolies and oligopolies, the farm problem, labor unions and collective bargaining, income inequality and poverty, and international economics. Three hours lecture/discussion a week. **IAI: S3 902**

EDUCATION (EDU)

EDU 107 — Introduction to Special Education (3)**Prerequisite:** None

A survey course that presents the historical, philosophical and legal foundations of special education, as well as an overview of the characteristics of individuals with disabilities, the programs that serve them under the Individuals with Disabilities Education Act, and the diversity of the populations of individuals with disabilities. Three hours lecture/discussion per week. Limited Transfer – See advisor for more information.

EDU 201 — Introduction to Education (3)**Prerequisite:** None

A study of social, historical, and philosophical foundations that give perspective to current issues, policies, and ongoing changes in the field of education, including cultural diversity. Educational organization and structure, finance, and curriculum are discussed. Includes a minimum of 15 field observation hours. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

Note: A district volunteer background check and TB test are required.

EDU 282 — Clinical Experiences in Education (1)**Prerequisite:** EDU 201 with a grade of "C" or higher

This course is a pre-student teaching clinical for elementary and middle school levels. The student will become acquainted with teaching methods, materials and curriculum that are appropriate for these grades. The clinical includes classroom observations of teachers and students as well as supervised teaching experiences. Classroom observation and participatory teaching experiences must total a minimum of 50 clock hours in the approved clinical setting. Three hours lab a week. Repeatable two times up to a maximum of three credit hours. Limited Transfer – See advisor for more information. **Note: A criminal background check through the Regional Office of Education or school district is required.**

EDU 285 — Intro to Technology in EDU (3)**Prerequisite:** None

Introduces educators to the knowledge and skills required to demonstrate their proficiency in the current technology standards for the classroom. Fundamental operations and concepts of computer technologies to facilitate learning in today's P-12 classrooms. The course focuses on both knowledge and performance, and includes hands-on technology activities. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ELECTRONICS TECHNOLOGY (ELE)

ELE 102 — PC Maintenance and Repair (1)

Prerequisite: None

An introductory hands on course to easily repair, tune-up, fix up, ramp up and maintain a new model computer. Students who successfully complete this course will be able to minimize and reduce computer down times due to improper software installation, inadequate power sources, disk failure, insufficient memory, and improper hard drive maintenance. May be repeated three times as technology changes. One hour lecture/discussion a week.

ELE 103 — AC Fundamentals Lecture (2)

Prerequisite: ELE 104 and ELE 121

A study of Alternating Circuits (AC circuits) Lecture that focuses on Alternating Current, capacitive and inductance circuits, RLC steady state circuit analysis, resonance, and an introduction to filters. Students will apply Ohms Law and Power Law to an AC Circuit. Students will calculate various AC voltages, currents and power in various circuits such as series, parallel and combination. Students will also calculate AC waveforms such as peak and peak-to-peak as well as phase angles. Two hours lecture/discussion.

ELE 104 — DC Fundamentals Lecture (2)

Prerequisite: ELE 104 and ELE 121 or concurrent enrollment

The DC Fundamentals lecture course is a foundation course that introduces students to Ohms Law using Direct Current. Students will study various DC terminology, such as voltage, current and resistance, study the building blocks of DC theory, apply scientific and engineering notation and how to identify various DC symbols. Additionally, students will study and apply ohms Law, power law and how they relate to three primary circuits: Series, parallel and combination. Students will calculate voltage, current and resistance in any of the various circuits. Finally, students will apply Kirchhoff Voltage Law, and Kirchhoff Current Law to various DC circuits. Two hours lecture/discussion.

ELE 106 — Electricity Seminar (.5-3)

Prerequisite: None

Special course to meet specific needs of industry, groups, or individuals. Credit determined on a contact hour basis. Repeatable three times up to a maximum of twelve credit hours.

ELE 107 — Electronics Seminar (.5-3)

Prerequisite: None

Special course to meet specific needs of industry, groups, or individuals. Credit determined on a contact hour basis. Repeatable three times up to a maximum of twelve credit hours.

ELE 110 — Solid State Circuits (3)

Prerequisite: ELE 104 and ELE 121 or concurrent enrollment in ELE 104 and ELE 121

In the Solid State Circuits course the student will learn how diodes and rectifiers circuits operate and their use in power supply systems. Additionally, students will study transistor use in high and low voltage switching applications. The students will learn thyristors (SRC's, DIACS) and their applications in AC circuits. Finally, the students will study various sensor technologies, including proximity sensors, Light Emitting Diodes, solid state relays, the 555-timer circuits and other solid state technology. In conclusion of the class, students will learn to solder using ROHS compliance and build a working power supply. Two hours lecture, two hours lab a week.

ELE 113 — Electrical Wiring & Safety (2)

Prerequisite: None

This course is designed to give students an introduction into National Electric Code (NEC), and how NEC Code pertains to any industrial, commercial or residential environment. Topics include how to apply Lock-out Tag-out policies to safely de-energize an electrical system, safely work in a service panel, size a wire to a load, calculate box fill, install lighting and branch circuits, arc fault protection and GFI Protection, and troubleshoot an electrical system using various test instruments. One hour lecture/discussion and two hours of lab a week.

ELE 114 — Robotic Principles (1)

Prerequisite: None

Students will be introduced to the basics of robotic systems. Robotics systems have evolved from the IRobot Roomba vacuum to Fanuc Industrial Robots in industry to the Mars Rover. Students will learn the history of robotics, robotic terminology, and robotic system parts such as axes, power supply, controller and end of arm tooling, robotic system safety, uses of robotic systems and other applications. One hour lecture/discussion a week.

ELE 121 — DC Fundamentals Lab (1)

Prerequisite: ELE 104 or concurrent enrollment

A laboratory class designed to accompany ELE 104. Students will apply what they learned in the DC lecture to a lab setting. Students will learn to read a simple schematic and then design and build series, parallel, and combination circuits, as well as how to use a digital multimeter to measure total resistance, voltage drops, and current drops in any of the three primary circuits. Students will build and measure current and voltage dividers circuits. Students will also learn to integrate other components, such as a fuse and potentiometers into a circuit and take various measurements. Two hours lab a week.

ELE 123 — AC Fundamentals Lab (1)**Prerequisite:** ELE 103 or concurrent enrollment

A laboratory class designed to accompany ELE 103. Students will focus on Alternating Current, capacitive and inductance circuits, RLC steady state circuit analysis, resonance, and an introduction to filters. Students will build various AC Circuits and apply what they learned from the lecture into the lab. Students will measure voltages and currents using various test instruments such as function generator, digital multimeter, and oscilloscope. Students will learn to operate an oscilloscope to measure phase angle of an RL, RC and RLC circuit as well as measure peak, peak to peak and frequency. Two hours lab a week.

ELE 130 — Introduction to PLC Systems (3)**Prerequisite:** None

An introductory course in the use of wiring, ladder diagrams, and programmable controllers. The course will cover the hardware wiring and software programming of PLC's by desktop computers with ladder diagrams. Students will use computer software packages and relay-type instructions to program and test a programmable controller test panel. May be repeated three times as technology changes. Two hours lecture/discussion and two hours lab a week.

ELE 142 — PC Repair and Configuration (3)**Prerequisite:** None

This course will teach basic PC repair and help prepare students for the Comp-TIA A+ Essentials certification exam. It will teach the skills necessary to install, configure, upgrade, troubleshoot and repair both desktop and laptop computers and manage printers. It will include topics on professionalism, communication with users, safety and preventative maintenance. Two hours lecture/discussion and two hours lab a week. Co-offered as CIS-142. ***Credit may not be received if prior credit has been earned in CIS-142 or equivalent.***

ELE 206 — Amplifier/Operational Amplifier Circuits (3)**Prerequisite:** (ELE 104 and ELE 121) or ELE 110

This course emphasizes the design and failure analysis of low and high power amplifiers and voltage regulators that are constructed with single and multistage transistors. The principles, operation, and characteristics of operational amplifiers are studied with a focus on DC and AC signal processing. Two hours lecture/discussion and two hours lab a week.

ELE 210 — Advanced PLC Systems (3)**Prerequisite:** ELE 130

This course will focus on PLC safety systems, speed control of conveyor, safety, motion control, part placement, HMI (display), data acquisition and vision. The student will be required to setup each of the three systems to work hand-in hand with each other, simulating an industrial automation operation. Additionally, the course will cover the hardware wiring, software programming and troubleshooting of a PLC system. Finally, students will learn to program the PLC using structured text in replacement of the ladder logic programming. Two hours lecture/discussion and two hours lab a week.

ELE 211 — Industrial Motor Controls (3)**Prerequisite:** None

This is a course on motors, electrical systems, and smart machines. Students will learn the characteristics and uses of DC, single-phase, three-phase motors and power systems that are governed by the National Electric Code. These characteristics will be applied to the study of automatic or smart control systems in heating, air conditioning, and cleaning systems. Two hours lecture/discussion and two hours lab a week.

ELE 212 — Digital Circuits (3)**Prerequisite:** None

Students will study the fundamentals of digital electronics starting with binary, hexadecimal and octal numbering systems. Students will then focus their studies on the various logic gates such as AND, OR, NOT, NAND, NOR, XOR, XNOR. Students will also study Boolean expressions, Karnaugh mapping, Digital to Analog Converters (D/A) and Analog to Digital Converters (A/D converters), binary and hexadecimal arithmetic, integrated circuits (IC's), flip-flops and counters. Finally, students will design and build various digital circuits using both Multisim software and breadboarding their digital schematic circuit. May be repeated three times as technology changes. Two hours lecture/discussion and two hours lab a week.

ELE 214 — Industrial Robotics (3)**Prerequisite:** None

Students will learn to operate, setup and program a Fanuc Robot to perform various tasks. Students will learn how to work safely around an industrial robot, apply power to the controller, robotic safety integration, operate a teach pendant, program the Fanuc Robotic to perform a task(s), setup various I/O, create macros, create frames, copy and edit programs, maintain and troubleshoot robot errors, install end of arm tooling and other industrial robotic functions and applications. Two hours lecture/discussion and two hours lab a week.

ELE 215 — Electronics Internship (.5-3)**Prerequisite:** Instructor consent.

Internship training in industry on a part-time basis. Students will work at jobs relating to their field of interest, while completing their course work. Typical jobs are engineering technician, industrial electrician, computer repair, or quality-control technician. Requires a minimum of two hundred twenty-five (225) hours employment experience.

ELE 230 — Computer Devices (3)**Prerequisite:** ELE 104 and ELE 121

A course about how computers and microprocessors work and how they are constructed. Topics include: computer construction of the PC from mother boards, hard drives, cases, video, sound, and memory modules. A+ topics will be studies in textbooks, labs, and in A+ practice tests. Microprocessor topics include: processors, programming, memory types and operation, interfacing, and computer arithmetic. Two hours lecture/discussion and two hours lab a week. Repeatable three times as technology changes.

EMERGENCY MEDICAL SERVICES (EMS)

Admission to the Emergency Medical Services programs are selective, based upon pre-admission test scores, academic achievement, professional compatibility and clinical site capacity. Further information is located on the Kishwaukee College EMS website. Please note admission criteria and program requirements are subject to change based on accreditation, legislative, and clinical site mandates.

EMS 104 — First Responder (2)

Prerequisite: None

Intended for individuals at the scene of a medical or traumatic emergency before arrival of trained ambulance personnel. Focuses on assessing patients' conditions, developing knowledge and skills in performing emergency lifesaving procedures, and providing safe, immediate, and effective pre-hospital care. Two hours lecture/discussion a week.

EMS 105 — EMT Ambulance Transition (1)

Prerequisite: Program Coordinator Consent

Designed to update the knowledge and improve the skills in symptom recognition and in all emergency care procedures and techniques considered to be within the responsibilities of an EMT providing emergency medical care. Repeatable three times. One hour lecture/discussion and one-half hour lab a week.

EMS 107 — Basic Emergency Medical Technician (7)

Prerequisite: Appropriate placement test score or ENG 103 with a grade of "C" or higher

Basic course designed to cover the principles and techniques of emergency medical care presently considered within the scope and responsibility of an EMT-Basic. Emphasis on the development of student knowledge and skill in recognizing symptoms of illness and injuries, and proper procedures of basic emergency care. Six hours lecture/discussion and three hours lab a week. **Contact EMS Program Coordinator for more information.**

EMS 210 — Paramedic Module I (11)

Prerequisite: Concurrent enrollment in EMS 220. Program Coordinator Consent

This course is the first in a series of three modules designed to develop the training, expertise, and assessment skills that are required of the Paramedic. EMS 210 includes a focus on the foundations that will be built throughout the rest of the program. Some medical emergencies will be addressed. Emphasis is on integrating prehospital care through emergency patient care into the continuum of total patient care, with emphasis on a team concept. Nine hours lecture/discussion per week, 4 hours lab per week.

Note: Student must have a current unrestricted state issued EMT/AEMT/EMT Intermediate license and current AHA BLS Provider card.

EMS 211 — Paramedic Module II (12)

Prerequisite: EMS 210, EMS 220 with grades of "C" or higher. Concurrent enrollment in EMS 221

This course is the second in a series of three modules designed to develop the training, expertise, and assessment skills that are required of the Paramedic. EMS 211 continues with medical emergencies and includes trauma emergencies. National certifications included in this semester are Advanced Cardiac Life Support and Prehospital Trauma Life Support. Emphasis is on integrating prehospital care through emergency patient care into the continuum of total patient care, with emphasis on a team concept. Ten hours lecture/discussion per week and 4 hours lab per week.

Note: Student must have a current unrestricted state issued EMT/AEMT/EMT Intermediate license and current AHA BLS Provider card.

EMS 212 — Paramedic Module III (6)

Prerequisite: EMS 211, EMS 221 with grades of "C" or higher. Concurrent enrollment in EMS 222.

This course is the third in a series of three modules designed to develop the training, expertise, and assessment skills that are required of the Paramedic. EMS 212 completes the medical diseases, reviews and clarifies the pathophysiology that has been taught throughout the course, covers 12 lead monitoring and covers Operations of EMS at an awareness level. Emphasis is on integrating prehospital care through emergency patient care into the continuum of total patient care, with emphasis on a team concept. Five hours lecture/discussion per week and 2 hours lab per week. **Note: Student must have a current unrestricted state issued EMT/AEMT/EMT Intermediate license and current AHA BLS Provider card.**

EMS 220 — Paramedic Module I Clinical (4)

Prerequisite: Concurrent enrollment in EMS 210. Program Coordinator Consent

The objective of this course is to gain the practical experience needed for the material covered in EMS 210 and to begin to complete a portion of the clinical/field competencies requirement. This course allows students to begin using the skills learned in the classroom that allows for an ordered progression from formative actions, to the final summative team leadership role they will display at the end of the program. During this course, students will work with their preceptors on applying the principles taught in Paramedic Module I, including documentation, IV skills, medication administration and will begin to assist the paramedic with treatment of medical emergencies. Requires 62 clinical hours and 75 field hours.

Note: Student must have a current unrestricted state issued EMT/AEMT/EMT Intermediate license and current AHA BLS Provider card.

EMS 221 — Paramedic Module II Clinical (5)

Prerequisite: EMS 210, EMS 220 with grades of "C" or higher.
 Concurrent enrollment in EMS 211

The objective of this course is to gain the practical experience needed for the material covered in EMS 211 and to continue to work toward completion of the clinical/field competencies requirement. During this course, students will work with their preceptors on applying the principles taught in Paramedic Module II. The students will begin to function as a team lead in some medical scenarios and will begin assisting the paramedic with treatment of trauma emergencies.

Requires 74 clinical hours and 112 field hours.

Note: Student must have a current unrestricted state issued EMT/AEMT/EMT Intermediate license and current AHA BLS Provider card.

EMS 222 — Paramedic Module III Clinical (5)

Prerequisite: EMS 211, EMS 221 with grades of "C" or higher.
 Concurrent enrollment in EMS 212.

This course is designed for the students to continue using the skills learned in the classroom that allows for an ordered progression from formative actions, to the final summative team leadership role they will display at the end of the program. The objective of this course is to gain the practical experience needed for the material covered in EMS 212 and to continue to work toward completion of the clinical/field competencies requirement. During this final clinical Module, the student will be expected to apply the principles learned in all of the Modules to assess, treat, transport and complete documentation as an entry-level paramedic. Requires 44 clinical hours and 125 field hours

Note: Student must have a current unrestricted state issued EMT/AEMT/EMT Intermediate license and current AHA BLS Provider card.

ENGINEERING (EGR)

EGR 101 — Introduction to Engineering (1)

Prerequisite: None

This course is an introduction to engineering careers and the professional requirements of various engineering specialties. The course will include topics on careers in mechanical, electrical, civil, and industrial engineering. The course will also include topics on the design process and project engineering, as well as an introduction to engineering ethics, finance, and law. One hour lecture/discussion a week.

Limited Transfer – See advisor for more information.

EGR 177 — Engineering Design Graphics (3)

Prerequisite: MAT 229 or concurrent enrollment

Introduction to engineering design and graphics, including design problems, sketching, dimensioning, tolerancing, multi-view orthographic representations, auxiliary views, section views, and working drawings. Computer-Aided Design (CAD) software is utilized in this course. Two hours lecture/discussion and two hours lab per week. Limited Transfer – See advisor for more information.

EGR 250 — Thermodynamics (3)

Corequisite: EGR 270, MAT 231

An introduction to the principles of thermal energy conversion; heat, work and the first law of thermodynamics; properties of pure substances; energy analysis of control volumes, steady state and steady flow processes; the second law of thermodynamics, entropy, and exergy; power and refrigeration cycles. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

EGR 270 — Statics (3)

Prerequisite: PHY 260 or PHY 263 with a grade of "C" or higher.

Study of resultants of force systems; algebraic and graphical conditions of equilibrium of force systems; analysis of forces acting on members of trusses, frames, etc.; forces due to friction and centroids. Three hours lecture/discussion a week.

IAI: EGR 942

EGR 272 — Dynamics (3)

Prerequisite: EGR 270 with a grade of "C" or higher.

A study of displacements, velocity, and acceleration of a particle; relation between forces acting on rigid bodies and the changes in motion produced; translation; rotation; plane motion; solutions using the principles of force, mass and acceleration; work and energy; impulse and momentum; and vibrations. Three hours lecture/discussion a week.

IAI: EGR 943

EGR 280 — Mechanics of Materials (3)

Prerequisite: EGR 270 with a grade of "C" or higher

Covers elastic and inelastic relationships between external forces (loads) acting on deformable bodies. Explores stresses and deformations produced, tension and compression members, members subjected to torsion and to bending, buckling (columns), combined stresses, repeated loads (fatigue), energy methods, impact and influence of properties of materials. Three hours lecture/discussion a week. **IAI: EGR 945**

EGR 290 — Circuit Analysis (3)

Prerequisite: MAT 231 and PHY 261 or PHY 273 with grades of "C" or higher.

Topics include concepts of electricity and magnetism; circuit variables (units, voltage, inductance, power and energy); circuit elements (R, L, C and operational amplifiers); simple resistive circuits; circuit analysis (node-voltage, mesh-current, equivalents and superposition); transient analysis; and sinusoidal steady state (analysis and power). Three hours lecture/discussion per week. **IAI: EGR 931**

EGR 291 — Circuit Analysis Lab (1)

Corequisite: EGR 290

Laboratory topics include concepts of electricity and magnetism; circuit variables (units, voltage, inductance, power and energy); circuit elements (R, L, C and operational amplifiers); simple resistive circuits; circuit analysis (node-voltage, mesh-current, equivalents and superposition); transient analysis; and sinusoidal steady state (analysis and power). Three hours laboratory per week. Limited Transfer – See advisor for more information.

ENGLISH (ENG)

NOTE: *The following courses are open to students demonstrating reading and writing competency according to the college placement procedure. Departmental standards determine placement in specific courses. Students can make arrangements to take the placement tests by contacting Student Services.*

ENG 089 — Reading & Writing Improvement (4)

Prerequisite: Appropriate writing placement test score and appropriate reading placement test score

Students will master literacy skills necessary for college-level coursework. They will engage in supported activities that develop vital reading and writing abilities, including pre-writing, writing, revising, and meaningful revision. Students will analyze content and rhetorical structures, build their vocabulary, and improve their writing mechanics with grammar, punctuation, and usage exercises. Course provides preparation for ENG 103 and ENG 109. Not transferable. Four hours lecture/discussion a week.

ENG 099 — Comp 1 Supplemental Instruct (2)

Prerequisite: Appropriate placement test score

A review of skills to aid in the successful completion of ENG 103. This course focuses on tools required for student success; writing as a recursive process; unity, organization, development, and coherence in written language; elements of the paragraph and the essay; and grammar, punctuation, and usage review. Not transferable. Two hours lecture/discussion a week.

ENG 103 — Composition I (3)

Prerequisite: Appropriate placement test scores or grade of "C" or higher in ENG 089 or ENG 109; concurrent enrollment in ENG 099 may be required

An introduction to college-level writing. This course develops awareness of the writing process; provides invention, organization and revision strategies; stresses a variety of uses for writing; and emphasizes critical skills in reading, thinking, and writing. Students receive an introduction to the research process in preparation for ENG 104. Three hours lecture/discussion a week. **IAI: C1 900**

ENG 104 — Composition II (3)

Prerequisite: ENG 103 with a grade of "C" or higher

A continuation of ENG 103. This course increases awareness of the writing process; provides invention, organization and revision strategies; stresses a variety of uses for writing; emphasizes critical skills in reading and writing; and develops reasoning and argumentation skills. Research writing amounting to 2,500 words minimum is a requirement in this course. Three hours lecture/discussion a week. **IAI: C1 901R**

ENG 109 — Introduction to Technical Report Writing (3)

Prerequisite: Appropriate placement test score or ENG 089 with grade of "C" or higher

An introduction of the concepts and practices of technical writing, primarily for students enrolled in career/technical programs. This course includes the basic techniques for organizing, writing, and revising a variety of documents. Students learn basic formats for informal and formal reports, including using document design principles. They also practice skills needed for oral presentations. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ENG 111 — College Study Skills (2)

Prerequisite: None

A course designed for students who want to develop or improve the study skills essential for success in course work. This course emphasizes time management, motivation, beliefs about learning, listening, note taking, test-taking and disciplinary reading strategies. Students will appraise their present study skills, improve them, and apply these skills in their courses. Two hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ENG 130 — Introduction to Literature (3)

Prerequisite: None

An introduction to fiction, poetry and drama. Students develop skills in interpreting, analyzing and appreciating works of literature by using elements such as theme, character, point of view, symbolism, imagery and tone. This course provides a foundation for further literary study. Three hours lecture/discussion a week. **IAI: H3 900**

ENG 199 — Creative Writing: Literary Non-Fiction (3)

Prerequisite: ENG 103 with a grade of "C" or higher

An introduction to the application of fictional and journalistic techniques to creative nonfiction (sometimes called "literary nonfiction" or "literary journalism" or "the essay") in its varied forms, including autobiographical, reflective, travel, and scientific writing. Students will write exercises and essays to try their hand at the craft of creative non-fiction. They will read works by established writers to examine specific categories and techniques of "the essay." Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ENG 205 — Introduction to Shakespeare (3)

Prerequisite: ENG 103 with a grade of "C" or higher

A study of selected comic, tragic, romantic and historical plays. This course examines Shakespeare's growth as a literary artist and the factors which contributed to that development. Students will evaluate Shakespeare's poetry and plays in terms of its significance for modern times. Three hours lecture/discussion a week. **IAI: H3 905**

ENG 206 — Introduction to Fiction (3)

Prerequisite: ENG 103 with a grade of "C" or higher

A study of distinctive qualities of fiction through the reading and discussion of representative American, British, and Continental fiction of several periods and types. Three hours lecture/discussion a week. **IAI: H3 901**

ENG 207 — Fundamentals of English Grammar (3)**Prerequisite:** ENG 103 with a grade of "C" or higher

An introduction to modern English prescriptive grammar. This course thoroughly familiarizes students with the rules of writing prescriptively correct and stylistically effective English as well as with the terminology of describing the grammatical structure of written English. Students will analyze the structure of their own writing and of professional essays and literature. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ENG 212 — American Literature: 1865 to Present (3)**Prerequisite:** ENG 103 with a grade of "C" or higher

A survey of American literature from the Civil War to the present. This course examines representative works of fiction, poetry, and drama and considers their intellectual, social, and political contexts. Three hours lecture/discussion a week. **IAI: H3 915**

ENG 215 — Children's Literature (3)**Prerequisite:** None

An introduction to various forms of children's literature. This course emphasizes investigation of both the motivations for reading and the appropriateness of materials for children of various ages and reading levels. Three hours lecture/discussion a week. **IAI: H3 918**

ENG 216 — Introduction to Poetry (3)**Prerequisite:** ENG 103 with a grade of "C" or higher

A study of traditional and nontraditional forms of poetry with emphasis on distinctive features such as image, metaphor, symbol, rhythm, and meter. Readings will range from easy, clear, non-controversial poems to ambiguous, subtle, and controversial poems, all selected to improve appreciation of the art and craft of poetry. Three hours lecture/discussion a week. **IAI: H3 903**

ENG 217 — Introduction to Drama (3)**Prerequisite:** ENG 103 with a grade of "C" or higher

A survey of various types of drama from various periods and approaches to determine literary meaning, form, and value. Students will read and discuss representative selections from such modes as tragedy, comedy, melodrama, romance, satire, and social commentary, as well as absurdist drama. The selections will include authors such as Sophocles, Ibsen, Miller, Chekhov, and Shakespeare. Three hours lecture/discussion a week. **IAI: H3 902**

ENG 281 — Crime and Punishment (3)**Prerequisite:** ENG 103 with a grade of "C" or higher

A study of literary works with focus on crime and punishment as a theme. The works selected portray this theme in plots which include murder, and also within characters struggling with good and evil motivations. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ENG 282 — Science Fiction and Fantasy (3)**Prerequisite:** ENG 103 with a grade of "C" or higher

A study of science fiction and fantasy in their cultural and technological contexts from the late 19th Century to the present. Students read works by such authors as Verne, Wells, Asimov, Clarke, Simak, Tolkien, LeGuin, Pohl, Heinlein, Miller, and others. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ENG 283 — Images of Women (3)**Prerequisite:** ENG 103 with a grade of "C" or higher

An analysis of the ways women have been portrayed in various literary works and in various times and cultures (with emphasis on the 19th and 20th centuries). This course considers roles, characterization, and images of women in their historical, psychological, sociological, and cultural contexts. Three hours lecture/discussion a week. **IAI: H3 911D**

ENG 286 — Literature and Film (3)**Prerequisite:** ENG 103 with a grade of "C" or higher

A study of formal, thematic, and/or historical relationships between literary and cinematic forms, including examinations of adaptations and influences that demonstrate the strengths of each artistic medium. Comparative readings and film viewings are required. Three hours lecture/discussion a week. **IAI: HF 908**

ENG 291 — Creative Writing: Poetry (3)**Prerequisite:** None

A study of the structure and elements of poetry and the writing process. Students will compose and revise fully developed poems and demonstrate understanding of the critical terminology of the poet. The student will read works by established writers and respond to each other's poetry. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ENG 294 — Irish Literature (3)**Prerequisite:** ENG 103 with a grade of "C" or higher

A study of the influence of language, history, politics, and identity on the emergence of Irish Literature in the 20th and 21st centuries. This course examines the impact of contemporary political developments, the position of women, the representation of Irish peasantry, and the importance of religious outlooks and divisions in the literature of this nation. Three hours lecture/discussion per week. Limited Transfer – See advisor for more information.

Note: This course is typically offered as a Study Abroad course.

ENG 298 — Topics in Literature (3)**Prerequisite:** ENG 103 with a grade of "C" or higher

A study of literary topics in novels, short stories, poetry, and drama. Topics may change from semester to semester. Three hours lecture/discussion a week. Repeatable three times as topics change. Limited Transfer – See advisor for more information.

ENG 299 — Creative Writing: Fiction (3)**Prerequisite:** ENG 103 with a grade of "C" or higher.

A study of the structure and elements of fiction and the writing process. Students will produce fully developed works of fiction and demonstrate understanding of the critical terminology of the creative writer. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

ENGLISH AS A SECOND LANGUAGE (ESL)

English as a Second Language courses are not applicable toward Kishwaukee degree or certificate program requirements. For more information, see Baccalaureate/Transfer Programs.

ESTHETICS (EST)

EST 100 — Introduction to Esthetics (1)**Prerequisite:** None

This course serves as an introduction to the basic principles of esthetics. Students will learn the history of esthetics and career options available to Licensed Estheticians. Professionalism, proper communication, infection control, draping and the physical components of the esthetics environment will be discussed. General theory as well as practical application will be included. One-half hour lecture/discussion and one hour lab a week.

EST 110 — Esthetics Procedures I (4)**Prerequisite:** EST 100, HLT 122, OS 216, PE 162 with grades of "C" or higher.

This course serves the initial training in esthetics. Students will learn theory and practice the application of esthetics technology. Topics include chemistry, electricity, assessment and data collection, skin analysis, facial treatments, non-therapeutic massage, hydrotherapy and cryotherapy. Three hours lecture/discussion and two hours lab per week.

EST 111 — Esthetics Clinical (3)**Prerequisite:** EST 100, HLT 122, OS 216, PE 162 with grades of "C" or higher.

In this student clinic, individuals will have the opportunity to apply the principles, techniques and procedures practiced in professional esthetics. Under the supervision of the clinic supervisor, students will be expected to demonstrate proper client/therapist communication skills, adequate sanitary precautions, perform techniques that are within the scope of training and practice of commonly recognized esthetics disciplines, demonstrate safe and effective use of equipment, and properly document the session for the client's record. Students will be expected to treat two or more clients consecutively. Eight hours of lab per week.

EST 120 — Esthetics Procedures II (4)**Prerequisite:** TPM 112 or BIO 112, EST 110, EST 111 with grades of "C" or higher.

This course serves as advanced training in esthetics. Students will learn theory and will practice application of advanced esthetics technology. Topics include facial treatments with the aid of machines, hair removal, advanced topics and treatments, professional makeup techniques and product knowledge. Three hours lecture/discussion and two hours lab per week.

EST 121 — Advanced Esthetics Clinical (3)**Prerequisite:** TPM 112 or BIO 112, EST 110 and EST 111 with grades of "C" or higher

In this student clinic, individuals will have the opportunity to apply the principles, techniques and procedures practiced in advanced professional esthetics. Under the supervision of the clinic supervisor, students will be expected to demonstrate proper client/therapist communication skills, adequate sanitary precautions, perform techniques that are within the scope of training and practice of commonly recognized esthetics disciplines, demonstrate safe and effective use of equipment, and properly document the session for the client's record. Students will be expected to treat two or more clients consecutively. Eight hours of lab per week.

EST 130 — Esthetics Licensure Seminar (1)**Prerequisite:** Concurrent enrollment in EST 120, EST 121, TPM 109, TPM 124

In this course, students will discuss the Illinois Barber, Cosmetology, Esthetics and Nail Technology Act, rules management and OSHA standards relating to chemical use. As a class, students will complete the paperwork and send in the fees for the examination authorized by the State of Illinois to determine fitness to receive a license as an Esthetician. One hour lecture/discussion

FRENCH (FRN)

FRN 101 — Elementary French I (3)**Prerequisite:** Appropriate placement test score, or ENG 089 or ENG 109 with a grade of "C" or higher or ENG 099 or ENG 103 with a grade of "C" or higher.

An introduction to the fundamentals of French. This course helps students develop the four basic skills: listening, speaking, reading, and writing. Students learn to use high frequency vocabulary and basic verb tenses. Students are also introduced to the culture of various French-speaking regions. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

FRN 102 — Elementary French II (3)

Prerequisite: FRN 101 or proficiency exam

A continuation of FRN 101. This course further develops the basic language skills: listening, speaking, reading, and writing. Students enlarge their vocabulary and expand their knowledge of Francophone culture while becoming able to communicate in a variety of tenses. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

FRN 201 — Intermediate French I (3)

Prerequisite: FRN 102 or proficiency exam

A continuation of FRN 102. Students further develop their listening, speaking, reading, and writing skills through the study of advanced topics in grammar in conjunction with theories related to nutrition. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

FRN 202 — Intermediate French II (3)

Prerequisite: FRN 201

A continuation of FRN 201. Students further develop reading, writing, listening and conversational skills through reading and discussion in French of short works by a variety of authors from French-speaking countries supplemented with grammar review. Three hours lecture/discussion a week **IAI: H1 900**

GEOGRAPHY (GEO)

GEO 202 — World Regional Geography (3)

Prerequisite: None

A systemic or regional introduction to the basic concepts of human geography using special analysis/ awareness with both traditional and digital map analysis. This course examines the causes and consequences of the uneven distribution of human activity, covering such themes as population, culture, economic activity, development, and urban patterns. Three hours lecture/ discussion a week. **IAI: S4 900N**

GERMAN (GER)

GER 101 — Elementary German I (3)

Prerequisite: Appropriate placement test score, or ENG 089 or ENG 109 with a grade of “C” or higher or ENG 099 or ENG 103 with a grade of “C” or higher.

An introduction to the fundamentals of German. This course helps students develop the four basic skills: listening, speaking, reading, and writing. They also learn to use high frequency vocabulary and basic verb tenses. Students are also introduced to the culture of various German-speaking regions. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

Note: This course is typically offered as a Study Abroad course.

GER 102 — Elementary German II (3)

Prerequisite: GER 101 or proficiency exam

A continuation of GER 101. This course further develops the basic language skills: listening, speaking, reading, and writing. Students enlarge their vocabulary and expand their knowledge of Germanic culture while becoming able to communicate in a variety of tenses. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information. **Note: This course is typically offered as a Study Abroad course.**

GER 201 — Intermediate German I (3)

Prerequisite: GER 102 or proficiency exam

A continuation of GER 102. Students further develop their listening, speaking, reading, and writing skills through the study of advanced topics in grammar in conjunction with composition and reading activities. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information. **Note: This course is typically offered as a Study Abroad course.**

GER 202 — Intermediate German II (3)

Prerequisite: GER 201

A continuation of GER 201. Students further develop reading, writing, listening, and conversational skills through reading and discussion in German of short works by a variety of authors from German-speaking countries supplemented with grammar review. Three hours lecture/discussion a week. **Note: This course is typically offered as a Study Abroad course. IAI: H1 900**

HEALTH (HLT)

HLT 100 — Exploring Health Careers (3)

Prerequisite: None

This course is designed for students interested in a future in health care. This course offers the student an in-depth exploration of health care careers and employment expectations. The purpose of this course is to assist students pursuing education in health professions the opportunity to make career development decisions. Through use of theory and clinical or academic shadowing experiences within the community, the student will receive an overview of the health care system and the multiple professional opportunities available. The student will also learn the education required for various health care professions and employment projections and salaries. Common health care safety practices are discussed and the student must meet the immunization and drug testing requirements to participate in clinical observation experiences. Academic or clinical shadowing in a specific health care field is required. Two hours lecture/discussion and two hours clinical/lab per week.

HLT 122 — Introduction to Nutrition (1)

Prerequisite: None

Study of nutrients, their functions, sources, requirements, and use by the body. Also includes special nutritional needs during the life span, nutrition assessment, and aspects of dietary counseling appropriate to healthcare. One hour lecture/discussion a week. Limited Transfer – See advisor for more information.

HLT 201 — Human Nutrition (3)

Prerequisite: CHE 110 and [BIO 103 or BIO 109] (Completion of two semesters of high school chemistry with a grade of “C” or higher will meet the prerequisite requirement for CHE 110)

The focus of the course is on the role of nutrition in human biological systems; the properties of nutrients; interaction with other environmental and genetic factors; current claims and theories related to nutrition. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

HLT 202 — Women’s Health Issues (3)

Prerequisite: None

Women’s Health Issues focuses on the female reproductive anatomy and physiology as well as the various political, economic, cultural, and social issues impacting women and women’s health. Targeted areas related to women’s health will include self-esteem, empowerment, physical and mental health, disease prevention, and other prominent women’s health issues as they relate to life-cycle stages. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

HLT 206 — Contemporary Health Concepts (3)

Prerequisite: None

This course offers contemporary health concepts to use today and tomorrow as guidelines for self-directed responsible living. Emphasis is placed on relating health concepts for the individual’s well being in personal, community, and leadership roles. Students will be exposed to the complex link between behavior and health, the social and cultural factors involved in health promotion and the prominent health issues as they relate to life-cycle stages. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

HLT 210 — Drug Use and Abuse (3)

Prerequisite: None

Comprehensive study of legal and illegal drug use and abuse including psychological, sociological, and pharmacological aspects. Emphasis will be on psychoactive drugs and non-drug alternatives that modify mood and behavior. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

HEALTH INFORMATION TECHNOLOGY (HIT)

HIT 115 — Introduction to Medical Coding (2)

Prerequisite: None

A course in medical coding basics. The course focuses on key aspects of the medical coding process, including knowledge of HIPAA-mandated medical code sets; the application of HIPAA-compliant guidelines for the correct use of these medical code sets; the understanding of correct procedures for code assignment; and the ability to access Internet and other resources to keep current in the medical coding field. Two hours lecture/discussion a week.

HIT 216 — Medical Terminology I (3)

Prerequisite: None

The study of the basic structure of medical terminology including the spelling, definition, and pronunciation of medical terms. Coverage will include basic anatomical terms, system pathology, and common abbreviations. Three hours lecture/discussion a week.

HIT 217 — Medical Transcription I (3)

Prerequisite: OS 124 and OS 216

Designed to develop speed and accuracy in medical keyboarding, in addition to skill in using machine transcription equipment, with an expansion in the use of medical terminology. Emphasizes transcribing medical reports and correspondence. Three hours lecture/discussion a week.

HIT 218 — Medical Office Procedures (3)

Prerequisite: OS 216

Prepares students to work in the medical office using current billing software. Topics include adding/editing patient information, adding charges, applying payments, preparing business reports. Three hours lecture/discussion a week.

HIT 219 — Medical Terminology II (4)

Prerequisite: OS 216

This course is a continuation of the study of medical terminology using a medical specialties approach to medical records. The course will cover anatomical names of the human body, medical specialty terminology, pathological conditions, surgical and therapeutic procedures, diagnostic procedures, pharmacology, and abbreviations. Four hours lecture/discussion a week.

HIT 220 — Health Insurance Billing (2)

Prerequisite: OS 216

This class will introduce information concerning major health insurance programs and federal health care legislation required for insurance billing. Also included will be direction to complete general claim forms for reimbursement. Two hours lecture/discussion a week.

HIT 221 — Medical Coding I (3)**Prerequisite:** OS 115 and OS 216

This introductory course is designed to provide the background and skill needed for beginning ICD-9-CM coding. Practical coding skills and competency questions are addressed throughout the course. Three hours lecture/discussion a week.

HIT 222 — Medical Coding II (3)**Prerequisite:** OS 221

This course will introduce the student to basic CPT-4 and some HCPCS coding systems and the clinical applications of those systems. Procedures for various clinical settings requiring CPT code assignment after review of diagnostic statements will be included. Instructions in the assignment of appropriate modifiers depending on health care environment (e.g., physician's office, hospital outpatient department, etc.) as well as professional fee reimbursements. Three hours lecture/discussion a week.

HIT 223 — Pharmacology and Lab Medicine (3)**Prerequisite:** OS 216

A study of the principles and language of pharmacology and laboratory medicine including drugs and drug classes, diagnostic tests, indications, techniques, expressions of values, and significance of findings. Three hours lecture/discussion a week.

HISTORY (HIS)

HIS 144 — Western Civilization to 1715 (3)**Prerequisite:** None

A study of the development of Western Civilization from the classical period through the Reformation era. This will include specific study of Greece and Rome, the development of the Christian church in Europe, the Middle Ages, and the Renaissance, culminating in an analysis of the political, economic, social, and cultural changes during the Early Modern period in Europe. Three hours lecture/discussion a week. **IAI: H2 901**

HIS 145 — Western Civilization since 1715 (3)**Prerequisite:** None

A study of the development of Western Civilization from the Enlightenment era to the present. This will include specific study of absolutism in the 18th century, the Industrial Revolution, French Revolution, the development of European nationalism and liberalism, and the rise of Europe as a global power, culminating in an analysis of the two world wars and the Cold War era. Three hours lecture/discussion a week.

IAI: H2 902**HIS 172 — World History to 1500 (3)****Prerequisite:** None

A study of world history from the origins of complex societies to the Age of Exploration. Students will study the emergence of major civilizations in the ancient world, and the development of classical civilizations in Europe, the Middle East, Africa, and Asia. Discussion will focus on comparative analysis of the social, political, cultural, and economic attributes of various cultures. Three hours lecture/discussion a week. **IAI: H2 906**

HIS 173 — World History Since 1500 (3)**Prerequisite:** None

A study of world history from the Age of Exploration to the modern day. Students will study the emergence of major civilizations in the Middle East, Africa, Asia, Europe, and the Americas and the interconnections that developed between these societies. Discussion will focus on comparative analysis of social, political, cultural, and economic attributes of various civilizations. Three hours lecture/discussion a week.

IAI: H2 906 (pending IAI approval)**HIS 200 — African American History (3)****Prerequisite:** None

This course will follow the introduction and evolution of African-Americans in the United States, from the early settlements and colonies, and through the American Revolution; the establishment of the Constitution and a new nation, institutionalized slavery, and forward to a national Civil War, ending with Reconstruction; the Twentieth Century and World Wars, a Civil Rights Movement, and continued protests for equality; finally, the Twenty-First Century, the first African-American President, and a new push for civil liberties & constitutional protections. Attention will be paid to the social, economic, cultural, gendered, political, and constitutional implications throughout United States history on African-Americans. Three hours lecture/discussion a week.

IAI: S2 923D**HIS 220 — United States History to 1877 (3)****Prerequisite:** None

A study of the social, economic, cultural, political, and constitutional development of the United States. This will include a study of America's European origins, Native American prehistory, a brief survey of the early Colonial period, the Revolutionary War and Constitutional period, Jeffersonian Democracy, the War of 1812, the Age of Jackson, slavery, the War with Mexico, and the Civil War and Reconstruction. In-depth discussions will revolve around the social, cultural, economic, and gender issues as well as various interpretations of United States history relevant to the covered time periods. Three hours lecture/discussion a week. **IAI: H2 904**

HIS 222 — United States History Since 1877 (3)

Prerequisite: None

A study of the social, economic, cultural, political, and constitutional development of the United States. This course includes a brief analysis of American history from the Reconstruction period, the Great Depression, the New Deal, World War II, the Cold War, the 1950's, the 1960's, the Feminist Movement, Watergate, the last two decades of the 20th Century and into the 21st Century. In-depth discussions will revolve around the social, cultural, economic, and gender issues, as well as various interpretations of American history relevant to the covered time periods. Three hours lecture/discussion a week. **IAI: H2 905**

HIS 249 — History of Africa (3)

Prerequisite: None

The study of African history and culture from the origins of human society to the present. This course surveys the development of major civilizations in Africa, with special emphasis on Africa's role in major themes in world history and Africa's interconnections with other parts of the world. Three hours lecture/discussion a week. **IAI: H2 903N**

HIS 295 — British History to 1650 (3)

Prerequisite: None

A study of British History from pre-historic Britain through the 17th Century. Students will study Roman, Norman, and Saxon Britain; the Hundred Years War; various rulers from Henry II to William and Mary; Elizabethan England; Protestant and Catholic conflict; and ending with the Glorious Revolution. In-depth discussions will revolve around social, political, cultural, economic, and gender issues relevant to this time period. Three hours lecture/discussion per week. Limited Transfer – See advisor for more information.

Note: This course is typically offered as a Study Abroad course.

HIS 296 — British History from 1650 to Present (3)

Prerequisite: None

A study of British History from 1650 to present. Students will study the rule of William and Mary to Elizabeth II, the Industrial Revolution, the American Revolution, Victorian England, the World Wars, and socialist Britain. In-depth discussions will revolve around social, political, cultural, economic, and gender issues relevant to the time period. Three hours lecture/discussion per week. Limited Transfer – See advisor for more information. **Note: This course is typically offered as a Study Abroad course.**

HIS 297 — British Culture and Society (3)

Prerequisite: None

A study of contemporary political, cultural, and social life in Britain. The political focus will be the Monarchy and Parliament, the economy, the judiciary, and the political parties, as well as the electoral systems. The cultural focus will include the media, art and architecture, leisure and humor, and popular rock culture. The societal section will investigate the idea of "class," the educational system, trade unions, and religion, as well as the geographical diversity and land use. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information. **Note: This course is typically offered as a Study Abroad course.**

HIS 299 — Topics in History (3)

Prerequisite: None

A study of special topics in history. When offered, topics might include Ancient, Medieval, Asian history, World War I, World War II, Vietnam War, Women's history, the Civil Rights Movement, the 1960's, Labor history in the United States, current events, or other topics of particular interest. No topic will be offered more than twice in three years. Repeatable three times for different special topics. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

HORTICULTURE (HOR)

HOR 101 — Introduction to Horticulture Related Occupations (1)

Prerequisite: None

Study of horticulture-related employment opportunities in various occupations. Guest speakers from various horticulture professions are used to examine career areas. Designed to gather job information and develop educational and occupational goals. One hour lecture/discussion a week.

HOR 103 — Horticulture Science (3)

Prerequisite: None

Fundamentals of physical and biological science related to horticulture. Terminology and concepts in chemistry, genetics, and entomology used in subsequent horticulture courses. Two hours lecture/discussion and two hours lab a week. Limited Transfer – See advisor for more information.

HOR 105 — Botany For Horticulture (3)

Prerequisite: None

Detailed study of plant anatomy emphasizing the interrelationships between plant structures and their functions. Additional topics include photosynthesis, respiration, taxonomy, and compounds that plants manufacture. Two hours lecture/discussion and two hours lab a week.

HOR 106 — Orientation to Horticulture Internship (1)

Prerequisite: None

Designed primarily for occupational students in ornamental horticulture. Prepares students for the internship course, and includes information on resume preparation, placement, interviews, and the internship manual. One hour lecture/discussion a week.

HOR 112 — Greenhouse Management (3)

Prerequisite: None

Detailed introduction to greenhouse equipment, maintenance, installation, design, and cultural practices. Discuss fertilizer injectors, pesticide spraying equipment, photoperiod control systems, heating systems, cooling systems, crop fertilization, watering practices, and environmental control systems. Practical experience in growing greenhouse crops. Two hours lecture/discussion and two hours lab a week.

HOR 122 — Trees/Arboriculture (3)**Prerequisite:** None

Identification, care, and use of native and introduced trees. Various arboriculture techniques such as pruning, staking, and applying trunk protection will be demonstrated in labs. Two hours lecture/discussion and two hours lab a week.

HOR 126 — Nursery Management (3)**Prerequisite:** None

A continuation of HOR 122 including identification of trees in winter condition. Emphasis on recognizing the major tree disease, insect, and cultural problems along with their landscape contribution. Includes layout of nursery facilities and plantings, with personnel and business management principles involved. Two hours lecture/discussion and two hours lab a week.

HOR 127 — Propagation Techniques (1)**Prerequisite:** None

To learn, study, and application of those practices of plant propagation that apply during the fall. The course will involve the collection of seed, taking hardwood cuttings, air layering of tropical stock plants, and the development of primary cultures of tissues materials. Will include the grafting, cutting, seeding, layering, and culturing of tissue. Students will practice the various propagation methods in the lab and greenhouse. Two hours lab a week.

HOR 128 — Plant Propagation (3)**Prerequisite:** None

Techniques in the commercial production of woody plant material and the problems involved in starting a business. Topics include propagation structures, media, disease control, and types of propagation such as budding, grafting, cutting, seeding and layering, and tissue culturing. Students practice the various propagation methods in the lab and greenhouse. Two hours lecture/discussion and two hours lab a week.

HOR 141 — Beginning Floral Arrangements (3)**Prerequisite:** None

The principles of design, with flowers and foliages providing the medium, are discussed at length with emphasis on how these principles of design influence everyday life. The history of floral art development and how this development is interrelated to all other art forms is discussed. The material presented in this course will help develop a sensitivity for design and its uses as a positive environmental element. Two hours lecture/discussion and two hours lab a week. **IAI: AG 912**

HOR 142 — Advanced Floral Arrangements (3)**Prerequisite:** HOR 141

Designed to provide advanced and creative opportunities to use fresh and dried floral material. New concepts and styles in floral design will be discussed such as formal linear, vegetative, parallel, and Pavé. Two hours lecture/discussion and two hours lab a week.

HOR 146 — Sustainable Perennials (3)**Prerequisite:** None

This class focuses upon the identification and use of sustainable perennials to create aesthetically pleasing landscapes that improve and conserve the environment. Emphasis will be given to selecting the correct plant(s) for specific site conditions. Perennial garden design, history and disease problems will also be discussed. Two hours lecture/discussion and two hours lab a week.

HOR 158 — Special Events I (2)**Prerequisite:** None

This course is designed to help participants develop skills in theme development, design of appropriate decorations for specific environments/locations, and the implementation of completed project plans. During this class students will implement two special theme event projects and create props using a variety of horticultural materials. The participants will use project management strategies such as logistics, personnel management, pricing and coordination. One hour lecture/discussion and two hours lab a week.

HOR 166 — Landscape Design (3)**Prerequisite:** None

This courses covers basic graphic presentation, site measurements, and placement of ornamental horticulture plants in the landscape. Concepts of balance, form, harmony, and focal points as they relate to commercial and home landscape design. Students will learn procedures for installing paving and segmental retaining walls during class labs. Two hours lecture/discussion and two hours lab a week.

HOR 168 — Sustainable Prairie Management (3)**Prerequisite:** None

This course covers the fundamentals of prairie origins, prairie plant diversity and identification, landscaping with prairie, and prairie maintenance. Challenges the students to reevaluate the function of landscape using natives. Students will investigate ground water and surface water runoff best management practices. Students will learn about habitat enhancements, conservation and designing layers for wildlife in the landscape. Two hours lecture/discussion and two hours lab a week.

HOR 186 — Sustainable Gardening I (1)**Prerequisite:** None

This class is designed for students interested in sustainable fruit and vegetable production for the homeowner or small farm owner. It is a hands-on course to apply those practices used to design, develop and grow fruit and vegetables for harvest and sale to the public. The course will involve the propagation, growing and care of horticultural crops for human consumption. The care and maintenance of honey and mason bees will be discussed and demonstrated along with the maintaining of nesting boxes for the colleges Audubon certification. Half hour lecture/discussion and one hour lab a week.

HOR 187 — Sustainable Gardening II (1)**Prerequisite:** None

This class is a continuation of Sustainable Gardening I and is designed for students interested in sustainable fruit and vegetable production for the homeowner or small farm owner. It is a hands-on course to apply those practices used to care for and grow fruit and vegetables for harvest and sale to the public. The course focus will be the use of proper cultural practices like IPM, disease and insect control, fertilization and weed control to produce and harvest horticultural crops for human consumption. The care and maintenance of nesting boxes and bee hives will be discussed and demonstrated. Half hour lecture/discussion and one hour lab a week.

HOR 188 — Sustainable Gardening III (1)**Prerequisite:** None

This class is a continuation of Sustainable Gardening II and is designed for students interested in sustainable fruit and vegetable production for the homeowner or small farm owner. It is a hands-on course to apply those practices used to care for and grow fruit and vegetables for harvest, sale or personal use. The course focus will be the use of proper cultural practices to harvest crops and preparing the garden for overwintering and the use of high tunnel gardening. Disease, insect, and weed control will be performed to produce and harvest high quality horticultural crops for human consumption. The management and care of nesting boxes and bee hives will be demonstrated. Half hour lecture/discussion and one hour lab a week.

HOR 196 — Horticulture Internship (4)**Prerequisite:** Instructor consent.

An introduction to ornamental horticulture supervised occupational/employment experience. Utilizes classroom and lab competencies in practical occupational training. Requires a minimum of 300 hours on the job.

HOR 201 — Horticulture Seminar (.5-3)**Prerequisite:** None

Special studies course designed to meet student and community needs. Available upon request in specific situations which do not comply with regular course offerings, but do merit college credit and provide for occupational needs. Credit determined on a contact hour basis. Repeatable three times up to twelve credit hours.

HOR 220 — Cannabis Biology & Production (4)**Prerequisite:** HOR 103, HOR 105 and HOR 128

Fundamentals of cannabis biology and production involving the study of historical, social, political, legal, and environmental contexts surrounding cannabis and hemp production. Emphasis on basic principles of cannabis biology, including propagation, cultivation, harvest, cutting, and drying. Overview of industrial and technological innovations and business applications. Three hours lecture/discussion and two hours lab a week.

HOR 231 — Ornamental Shrubs Identification and Culture (3)**Prerequisite:** None

Emphasis on identification, culture, landscape values, insects, and diseases of ornamental shrubs. Two hours lecture/discussion and two hours lab a week.

HOR 235 — Flower Store Management (3)**Prerequisite:** None

Instruction to provide students with techniques of flower store management and associated responsibilities including basic floral accounting, retail flower shop floor plans and layout, pricing, advertising, customer relations, and salesmanship. Basic information on the buying and selling of a flower shop will be included. Three hours lecture/discussion per week.

HOR 243 — Interior Plantscaping (3)**Prerequisite:** None

This class will emphasize the identification, culture, diseases, and insect pests of the plants commonly used in homes and commercial interiors for decoration. Students will gain practical experience in the greenhouse culture and maintenance of interior plants as well as introduction to the design of interior plantscape spaces. Two hours lecture/discussion and two hours lab a week.

HOR 247 — Special Events II (2)**Prerequisite:** None

This course is designed to acquaint students, through hands-on practical experience, with the concepts of selling floral merchandise during the spring season, methods of advertising and promotion, basic floral accounting procedures and purchasing floral products. The participants will use project management strategies as demonstrated in the floral industry, such as logistics personnel management, pricing and coordination of events. One hour lecture/discussion and two hours lab per week.

HOR 249 — Wedding & Sympathy Design (3)**Prerequisite:** HOR 141

Instruction to provide students with styles of arranging floral designs with emphasis on wedding and sympathy work. Students will create appropriate decorations for ceremony designs, personal flowers for all participants in the wedding, and reception designs. Students will also create appropriate designs for memorial services, visitations, and funerals. Two hours lecture/discussion and two hours lab a week.

HOR 251 — Landscape Construction (3)**Prerequisite:** None

Provide students with the necessary knowledge to construct and design hardscape surfaces and walls, irrigation and lighting systems, and water features. Cost estimating and maintenance techniques will also be discussed. Two hours lecture and two hours lab per week.

HOR 256 — Turf and Lawn Management (3)**Prerequisite:** None

Management and care of common turf grasses and their related problems including spray equipment calibration, fertilizers, seed selection, weeds, insects and diseases as they relate to golf courses, parks, sod production, and home and commercial grounds. Two hours lecture/discussion and two hours lab a week.

HOR 257 — Sports Turf Management (2)**Prerequisite:** HOR 256

An advanced study of turf management. Designed to provide students with skills dealing with construction and maintenance of sports turf playing fields including golf, baseball, football, and soccer. Includes mathematics used in turf maintenance, turf selection, establishment procedures, ongoing maintenance, and cultural practices to develop and maintain a quality play surface. One hour lecture/discussion and two hours lab a week.

HOR 266 — Advanced Landscape Design (3)**Prerequisite:** HOR 166

An advanced course for students planning careers in the landscape industry. Topics and class projects go beyond the basic landscaping design principles, including commercial and residential plan development, site drainage, vehicle accommodation, and construction estimating. Two hours lecture/discussion and two hours lab a week.

HOR 267 — Digital Landscape Design (3)**Prerequisite:** None

This course provides step-by-step instruction for students to learn the skills of digital landscape design representation and how to apply them to the design process. Hands-on computer experiences will allow students to prepare base plans, plant lists, and also landscape details. Students will develop an understanding of digital presentation methods and how they can be applied within the field of Landscape Design. Two hours lecture/discussion and two hours of lab a week.

HOR 269 — Field Studies Floral Symposium (1)**Prerequisite:** HOR 142 and instructor consent

This course will focus on the study of competition pieces for the AIFD National Symposium. During this course students will work on the proper mechanics for construction of these specialty designs. One-half hour lecture/discussion and one hour lab a week.

HOR 273 — NCLC Field Studies (1)**Prerequisite:** None

This horticulture studies course is designed to allow students to complete nationally in events that are designed and led by the green industry. Students will compete in the National Collegiate Landscape Competition in events that are designed to evaluate their skill level in plant identification, small engine maintenance and industry equipment driving/handling. Students will also attend a Career Fair which provides students an opportunity to meet with prospective employers in the green industry and discuss employment opportunities.

HOR 274 — U.S. Field Studies (1)**Prerequisite:** None

This field studies course is designed to acquaint the student with the many and varied career opportunities available in the horticulture industry. Each day of the field studies, the student will visit several horticultural businesses and or public garden or institutions to experience first-hand the day-to-day work practices and or management strategies used for industry success. Instruction will be give at each stop by the business owner/manager with regards to the specific operation and management of that business.

HOR 279 — Bedding Plant Production & Sales (4)**Prerequisite:** HOR 112

Study of commercial production of bedding plants. Covers propagation, watering, fertilization, containers, growing media, scheduling, temperature control, insect and disease control, height control, marketing, landscape selection and use. Study limited to those species grown commercially in this area. Two hours lecture/discussion and four hours lab a week.

HOR 290 — International Field Studies (3)**Prerequisite:** None

This horticultural studies course is designed to acquaint the students with many and varied career opportunities abroad in the horticultural industry. Each day of the class the student will visit horticultural businesses and/or public gardens or institutions to experience first-hand the day-to-day work practices and/or management strategies used for industry success. Instruction will be given at each stop by the business owner/manager as to the specific operations and management of that business. The country visited will be part of the cultural experience observed with the citizens in the region where the student will be staying. The trip will include all facets of the horticultural industry as students absorb the countryside and customs.

HOSPITALITY & CULINARY (HOS)

(Pending Approval)

HOS 100 — Kitchen Techniques (1)

Prerequisite: HOS 113

Introduction to the basic foundation skills necessary in commercial cooking including but not limited to the following areas: knife skills, flavorings, herbs and spices, mise en place, egg cookery, dairy, stocks, basic cooking techniques, recipe conversions and measurements, equipment identification and use. Two hours lab a week.

HOS 103 — Intro to Hospitality (3)

Prerequisite: None

This course will introduce you to the broad world of Hospitality and Tourism and provide information on the many different career opportunities throughout the industry. This course will include the following Hospitality areas: Overview, Lodging and Cruising, Restaurants, Beverage, Managed Services, Club Management, Assemblies and Event Management. Three hours lecture/discussion a week.

HOS 106 — Hospitality Seminar (.5-3)

Prerequisite: None

Special course to meet specific needs of industry, groups or individuals/ Available upon request in specific situations which do not comply with regular course offerings but do merit college credit and provide for occupational needs. Credit determined on a contact hour basis. Repeatable three times as topics change up to a maximum of twelve credits hours.

HOS 108 — Cooking Fundamentals (4)

Prerequisite: HOS 100

Introduction to the basic foundation skills necessary in commercial cooking including but not limited to the following areas: sauces, soups, vegetables, fruits, starches, sandwiches, salads, meats and poultry, basic cooking techniques, recipe conversions and measurements, equipment identification and use. One hour lecture/discussion, six hours lab a week.

HOS 109 — Baking Fundamentals (4)

Prerequisite: None

Theory and technique of introductory baking skills needed in the culinary/baking field. Included will be basic concepts, units of measure, tools and ingredients. Discussions/demonstrations to include quick breads, beginning yeast breads, choux paste, pies, baked custards and tarts. One hour lecture/discussion, six hours lab a week.

HOS 111 — Cake Baking & Designing (4)

Prerequisite: HOS 109

Theory and technique of introductory baking skills needed in the culinary/baking field for cakes and tortes. Included will be basic concepts, units of measure, tools, and ingredients. Discussions/demonstrations to include cakes, fillings, icings, and decorating detail techniques. One hour lecture, six hours lab per week.

HOS 113 — ServSafe Manager Certification (1)

Prerequisite: None

National Restaurant Association Educational Foundation ServSafe Certification course for all foodservice employees and managers. Focuses on concepts of food safety, foodborne microorganisms & allergens, personal hygiene, purchasing, receiving and storing food products, food preparation, cooking and service, facilities cleaning, sanitation, and pest management. One hour lecture/discussion a week.

HOS 196 — Hospitality/Food Service Intrn (4)

Prerequisite: HOS 103 and HOS 108 with a grade point average of 2.0 or higher

This course provides actual work experience in the culinary & hospitality industry. The student will be expected to utilize class and lab competencies in a practical work environment. A minimum of 320 hours are required for completion of course.

HOS 214 — Food and Beverage Service (3)

Prerequisite: HOS 103

Principles of food and beverage operations. Application of established standards, techniques, and practices of food and beverage management including styles of dining room services, menu design, purchasing, storing, and controlling restaurant supplies and equipment, legal issues on serving alcoholic beverages, food sanitation, revenue and cost control, restaurant facility design, customer service, and labor management. Three hours lecture/discussion a week.

HOS 220 — Catering (4)

Prerequisite: HOS 103 and HOS 108

Students will perform food production and service in a catering setting for 50 people using event information from an industry style BEO (Banquet Event Order) and standardized recipes. Students will expand on skills learned in previous courses, learn how to work with large quantities in recipe preparation, track food and labor costs, manage team members and time, practice proper sanitation, and exhibit professionalism. Each student will be a part of a management team that will create and demonstrate a management plan among their fellow students serving as employees. One hour lecture, six hours lab per week.

HUMANITIES (HUM)

HUM 119 — Humanities: Historical Survey (3)

Prerequisite: None

A chronological, interdisciplinary study of themes that include literature, visual and performing arts, and philosophy through periods from prehistory to contemporary. Three hours lecture/discussion a week. **IAI: HF 900**

HUM 129 — Humanities: Topical Survey (3)

Prerequisite: None

A thematic, interdisciplinary study of literature, visual and performing arts, and philosophy from a variety of fields and periods, as well as extensions into other areas of the arts. Three hours lecture/discussion a week. **IAI: HF 901**

HUM 150 — Introduction to Film Appreciation (3)

Prerequisite: Appropriate placement test scores, or ENG 089 or ENG 109 with a grade of "C" or higher, or ENG 099 or ENG 103 with a grade of "C" or higher

An introduction to film as an art form, emphasizing a study of the aesthetic and production elements of the medium, including narrative genres, directorial style, cinematography, acting and editing. Three hours lecture/discussion a week. **IAI: F2 908**

HUM 213 — Leadership Through the Humanities (3)

Prerequisite: None

A course focusing on the development of leadership ability. The course provides a basic understanding of leadership and group dynamics theory and assists the participant in developing a personal philosophy of leadership, an awareness of the moral and ethical responsibilities of leadership, and an awareness of one's own ability and style of leadership. This course also provides the opportunity to develop essential leadership skills through study and observation of the application of these skills. Participants are encouraged to develop their leadership potential and to engage in productive leadership behavior. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

HUM 215 — Black Cinema (3)

Prerequisite: None

This course is designed to introduce students to Black cinema and filmmakers of the twentieth century. A historical overview will examine the treatment of Black themes, issues and characterizations by various filmmakers. These depictions will be examined within the changing socio-cultural context that produced them. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

HUM 217 — World Mythology (3)

Prerequisite: ENG 103 with a grade of "C" or higher

The nature of mythology through study of folklore and legendary narratives, themes, and archetypal figures/situations, symbolism, and figurative language. Mythology and folklore from a variety of places, such as Greece, China, Africa, Norway, the Middle East and the Americas will be discussed. Three hours lecture/discussion per week.

IAI: H9 901

HUM 219 — Introduction to Culture (3)

Prerequisite: None

This course serves as an exploration of the nature of mankind, within a given society, primarily as reflected in the disciplines of philosophy, religious studies, history, literature, art, music and architecture. Particular attention is paid to individual and communal identities, to questions of values, and to the struggle for personal fulfillment. Emphasis is on students' consideration and development of their own personal, moral, and ethical values. Attendance at outside events is required. Three hours lecture/discussion per week. Limited Transfer – See advisor for more information. **Note: This course is typically offered as a Study Abroad course.**

HUM 297 — Topics in Humanities (1-4)

Prerequisite: None

A seminar on a special topic or current issue in the humanities (literature, writing, speech, foreign languages, religion, philosophy, music, and art history). Repeatable three times. Limited Transfer – See advisor for more information.

INDEPENDENT STUDY (IS)

IS 200 — Independent Study (1-4)

Prerequisite: Dependent on topic

Provides an opportunity for specialized study not available in regular course offerings. IS 200 may be taken in addition to regular courses. Students submit a proposal for IS 200 to the appropriate dean for approval. A maximum of four credit hours may be earned. Limited Transfer – See advisor for more information.

JOURNALISM (JOU)

See **COMMUNICATION**

LINGUISTICS (LNG)

LNG 110 — Introduction to Language (3)

Prerequisite: ENG 103 or concurrent enrollment in ENG 103

An introduction to the nature of human language and its internal structure. This course helps students develop the analytical tools of descriptive linguistics and apply them to a wide variety of linguistic data in order to understand the basic principles underlying the organization and use of language as a biological and social phenomenon. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

MANUFACTURING TECH (MT)

MT 101 — Print Reading for Industry (2)

Prerequisite: None

Emphasis on analysis and interpretation of drawings applicable to the metal trades. Includes principles of multi-view projection, sections, dimensional characteristics, notes, and specifications. One hour lecture/discussion and two hours lab a week.

MT 102 — Metrology (2)

Prerequisite: None

Provides an introduction to controlling and improving quality in a manufacturing setting. Explores ways that manufacturers use data and analysis to improve quality. Students will have the opportunity to earn the Quality and Measurement Certification through the Manufacturing Skill Standards Council (MSSC). One hour lecture/discussion and two hours lab a week.

MT 104 — Intro to Manufacturing & Safety (3)

Prerequisite: None

An introduction to the manufacturing world and manufacturing specializations such as mechatronics, precision machining and welding. Provides specific instruction to facilitate safe work practices in industrial environments. Covers fire safety, pressurized gases, electrical hazards, OSHA policy and safe machine usage. Two hours lecture/discussion and two hours lab a week.

MT 108 Intro to Mfg Maintenance (2)

Prerequisite: None

Provides a basic understanding of tools and equipment used in manufacturing, as well as knowledge of how to improve productivity through predictive and preventive maintenance. Students will have the opportunity to earn Maintenance Awareness Certification through Manufacturing Skill Standards Council (MSSC). One hour lecture/discussion and two hours lab a week.

MT 153 — Machine Shop Math (4)

Prerequisite: Appropriate placement test score or MAT 055 with a grade of "C" or higher.

Designed to meet the needs of the technical student majoring in manufacturing and related technology programs. Topics include powers and roots, ratios and proportions, practical measurements, formulas, gear trains & computations, geometric constructions, graphs, applied geometry, and trigonometry, as each applies to the design, manufacturing, and fabrication of goods. Emphasizes practical problem solving. Four hours lecture/discussion a week.

MT 205 — Metallurgy (3)

Prerequisite: None

Evaluation of industrial materials including ferrous and non-ferrous metals and non-metallic materials. Selection of materials for product development, taking into account the cost factors, ease of processing, strength, and aesthetic considerations. Three hours lecture/discussion a week.

MT 215 — Manufacturing Processes I (2)

Prerequisite: None

Covers the setup and operation of basic machine tools such as the engine lathe, milling machine, drill press and surface grinder, and allow practice of precision measuring techniques. Students will have the opportunity to earn the Manufacturing Processes Production Certification through the Manufacturing Skill Standards Council (MSSC). One hour lecture/discussion and two hours lab a week.

MT 216 — Fabrication Practices (2)

Prerequisite: MT 215

This course is a supplement to other manufacturing technology courses. This class will enable students to obtain closely supervised hands-on machine tool experience. Operations will include the use of basic machine tools such as the engine lathe, vertical milling machine, drill press, and surface grinder. Students will also be introduced to sheet metal fabrication. Operations will include the use of press brake, shear, ironworker, and spot welder. One hour lecture/discussion and two hours lab a week.

MT 261 — Manufacturing Processes II (4)

Prerequisite: MT 215

A continuation of MT 215 with emphasis on advanced metal cutting processes, application of handbook data to solve machining problems, and applied math. Two hours lecture/discussion and four hours lab a week.

MT 264 — Fixture Design (4)

Prerequisite: CAD 141, MT 215

Emphasis on the function and design of fixtures for milling and turning operations. From selected layouts and part prints, students prepare detail drawings, specifying standard components where appropriate. Two hours lecture/discussion and four hours lab a week.

MT 283 — Manufacturing Tech Internship (3)**Prerequisite:** Instructor consent.

Internship training in manufacturing technology with practical occupational experience. Combines classroom with supervised employment and laboratory experience. Must be on the job 225 hours. Fifteen hours lab a week.

MT 290 — Introduction to Computer Numerical Control (4)**Prerequisite:** MT 215 or concurrent enrollment

Introduction to Computer Numerical Control including the setup, operation, specifications, format, tooling and troubleshooting of CNC machining processes. Instruction will include manual point to point programming and an introduction to Computer-Aided Manufacturing Software. Three hours lecture/discussion and two hours lab a week.

MT 294 — Advanced Computer Numerical Control (4)**Prerequisite:** MT 290

Focuses on advanced CNC programming and processes. Includes use of proper format and documentation for CNC machining and the use of advanced canned cycles used on most control systems in manufacturing. Programming instruction includes the use of CAM systems (SURFCAM) in conjunction with standard CAD part designs such as SolidWorks and AutoCAD. Set-up and implementation of programs on the CNC milling machine, lathe and wire EDM machine. Two hours lecture/discussion and four hours lab a week.

MT 296 — Computer-Aided Manufacturing (3)**Prerequisite:** MT 290

This course is designed to introduce the student to the computer assisted part programming as it applies to CNC (Computer Numerical Control). Students will be given instruction on various types of programming systems to include SolidWorks and SURFCAM. Instruction will include piece-part geometry definition, computer input of this geometry and post-processing this information into CNC code. This code will then be used to machine parts as per industry standards. Three hours lecture/discussion a week.

MARKETING AND MANAGEMENT (MM)

MM 149 — Introduction to Marketing (3)**Prerequisite:** None

Introduction to the principles of marketing and the operation of the marketing system; marketing concepts, market strategy, target marketing, measuring demand and interest, and developing a marketing concept based on consumer needs. Three hours lecture/discussion a week.

MM 162 — Introduction to Management (3)**Prerequisite:** None

Introduction to the principles of management including an analysis of management functions. A basic course to establish concepts of modern management and to provide background in the latest management practices. Three hours lecture/discussion a week.

MM 233 — Retail Management (3)**Prerequisite:** None

Analysis of retail operations applying managerial level decision-making in areas of buying, merchandising, customer services, credit sales, advertising and promotion, and social responsibilities. Three hours lecture/discussion a week. (FAO)

MM 234 — Advertising and Promotion (3)**Prerequisite:** None

Introduction to principles and practices of advertising and promotion. Emphasis on effectiveness of advertising and the relationship of promotion to the goals of business. Three hours lecture/discussion a week. (SPO)

MM 237 — Supervision (3)**Prerequisite:** None

Develops practical methods of leading, directing, and controlling subordinates. Emphasis on accomplishing company goals utilizing the efforts of other people. Three hours lecture/discussion a week. (FA)

MM 259 — Introduction to Finance (3)**Prerequisite:** None

An overview of major finance areas, including sources and utilization of funds, cost of capital, capital budgeting, money markets, and long term financing. Relationships of financing business enterprises to personal and company investment policies. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information. (SPE)

MM 264 — Human Resources Management (3)**Prerequisite:** None

Conceptual view of personnel management as a process that is a part of the overall objectives of the organization. A study of psychological, environmental, legal, and social forces as related to the role of department supervisors as well as the personnel department. Emphasis on providing information to those who may have responsibility for management of others. Three hours lecture/discussion a week. (SPE)

MM 266 — Principles of Sales (3)**Prerequisite:** None

Study of persuasion as it applies to successful communication of ideas. Stress on the philosophy of proper attitude, goal setting, planning, and working. Three hours lecture/discussion a week. (SPO)

MM 269 — Entrepreneurship (3)**Prerequisite:** None

A flexible program designed to provide skills and understanding needed for successful entry and operation of the small-scale retail, wholesale, service, construction or manufacturing business. Participants learn to plan, organize, staff, direct, and control operations of an owner/operator firm. Three hours lecture/discussion a week. (SPO)

MM 280 — Materials Management Processes (3)

Prerequisite: None

This is an introductory course encompassing those activities under the general umbrella of Materials Management. The major functional areas that will be included are Materials Management, Purchasing, Production and Control, Physical Distribution and Logistics. The student will be exposed to the acquisition, storage, and movement of raw materials, semi-finished goods, and finished goods used by a business or industry and the basics of materials management as an integral part of the overall management of an organization. At the end of the course the student should be able to define and discuss the basic principles and disciplines of the materials management field. Three hours lecture/discussion a week.

MM 299 — Internship Marketing or Management (4)

Prerequisite: Instructor consent.

Based on the career objectives of the student and the cooperation of a business organization approved by the college, a student applies classroom instructional background to actual job situations. Requires minimum of 300 hours in a supervised occupational setting in addition to meeting with the instructor.

MATHEMATICS (MAT)

NOTE: The following courses are open to students with appropriate preparation/prerequisites in mathematics. Students without documentation of prerequisites (high school and/or college/university official transcripts) who plan to take mathematics courses will be required to take the mathematics placement test by contacting the Student Services. Academic Advisors will interpret the mathematics placement test scores upon student request.

Students who are transferring to Kishwaukee College who have earned a grade of "D" in a prerequisite course must repeat that course and earn a grade of "C" or higher before enrolling in a higher course. The purpose of taking the mathematics placement test for these students is to help the student and the counselor decide if the student should take a lower level course before repeating the course in which the grade of "D" was earned.

Any student who receives a grade of "D", "F", or "W" in a mathematics class cannot advance to a higher level class even though placement test results may indicate a higher placement.

A high school transcript noting successful completion of a year of geometry must be on file for enrollment in 100/200 level mathematics classes.

MAT 065 — Elementary Algebra I (2)

Prerequisite: None

The first in a sequence of two courses in elementary algebra. Topics include operations with signed numbers and fractions, linear equations and inequalities, graphing points and lines in two dimensions, and applications. Not transferable. Two hours lecture/discussion a week.

MAT 066 — Elementary Algebra II (2)

Prerequisite: MAT 065 with a grade of "C" or higher

The second in a sequence of two courses in elementary algebra. Topics include slope and equations of lines, introduction to functions, polynomials and operations on polynomials, factoring, and applications. Not transferable. Two hours lecture/discussion a week.

MAT 068 — Mathematical Literacy (4)

Prerequisite: None

An introductory course with emphasis on real-world connections to mathematics and the problem-solving process. Topics include numeracy, solving equations and systems, creating and interpreting graphs, properties and operations on polynomials, basic geometry, and basic probability. Not transferable. Four hours lecture/discussion a week.

MAT 075 — Elementary Geometry (4)

Prerequisite: Appropriate placement test scores, OR MAT 066 or MAT 068 or MAT 096 with a grade of "C" or higher

An introductory geometry course that will cover the normal topics of the high school geometry course. Topics will include undefined terms, axioms, postulates, theorems, congruence, similarity, ratio, proportion, angles, parallel lines, triangles, other polygons, locus, circles, area, perimeter, and volume. Topics from solid geometry as well as the writing of inductive, deductive, and indirect proofs will also be included. Not transferable. Four hours lecture/discussion a week.

MAT 085 — Intermediate Algebra I (2)

Prerequisite: MAT 066 with a grade of "C" or higher

The first in a sequence of two courses in intermediate algebra. Topics include solving equations by factoring, rational expressions, systems of two and three equations, and absolute value equations and inequalities. Not transferable. Two hours lecture/discussion a week.

MAT 086 — Intermediate Algebra II (2)

Prerequisite: MAT 085 with a grade of "C" or higher

The second in a sequence of two courses in intermediate algebra. Topics include radicals and complex numbers, quadratic equations and functions, algebra of functions, inverse functions, and exponential and logarithmic functions. Not transferable. Two hours lecture/discussion a week.

MAT 096 — Elementary Algebra (4)

Prerequisite: None

An introductory course in algebra. Topics include operations with signed numbers and fractions, graphing and solving linear equations and inequalities, slopes, introduction to functions, operations on polynomials, factoring, and applications. Not transferable. Four hours lecture/discussion a week. **Note: This course is for NIU KCMA students.**

MAT 098 — Intermediate Algebra (4)

Prerequisite: Appropriate placement test scores, or MAT 066 or MAT 068 or MAT 096 with a grade of “C” or higher

An introductory course in algebra. Topics include: solving equations by factoring, systems of two and three variables, the algebra of functions, inverse functions, complex numbers, and expressions, equations and functions that are rational, radical, quadratic, absolute value, exponential and logarithmic in nature. Not transferable. Four hours lecture/discussion a week.

MAT 101 — Topics in Mathematics (3)

Prerequisite: Appropriate placement test scores, or MAT 066 or MAT 068 or MAT 096 with a grade of “C” or higher.

Intended for the student who wishes to study applications of mathematics and whose program does not require mathematics beyond intermediate algebra. Topics covered include applications of statistics, logical argument, estimation and reasonableness of answers, geometry in problem solving, and techniques in problem solving. Three hours lecture/discussion a week. **IAI: M1 901**

MAT 150 — College Algebra (4)

Prerequisite: MAT 075 and MAT 086 or MAT 098 with grades of “C” or higher. (One year of high school geometry with a passing grade will satisfy the MAT 075 prerequisite requirement.)

Study of linear and quadratic functions, inequalities, binomial theorem, matrices and determinants, logarithmic and exponential functions, complex numbers, conic sections, sequences, series and topics in the theory of equations. Four hours lecture/discussion a week. Limited Transfer – See advisor for more information.

MAT 155 — Trigonometry (3)

Prerequisite: MAT 075 and MAT 150 with grades of “C” or higher or appropriate placement test scores. (One year of high school geometry with a passing grade will satisfy the MAT 075 prerequisite.)

Study of the trigonometric functions and their graphs, inverses, equations, properties, and identities. Further topics include radian measure, complex numbers, vectors, and applications. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

MAT 201 — Mathematics for Elementary Teachers I (3)

Prerequisite: MAT 075 and MAT 086 or MAT 098 with grades of “C” or higher. (One year of high school geometry with a passing grade will satisfy the MAT 075 prerequisite requirement.)

A course designed for the prospective elementary teacher. Emphasis on problem solving, structure, meanings, relationships, and types of thinking in mathematics. Topics include development of the whole number, integer, and rational systems, sets, logic, functions, and the use of manipulatives. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

MAT 202 — Mathematics for Elementary Teachers II (3)

Prerequisite: MAT 201 with a grade of “C” or higher

A continuation of MAT 201. Emphasis on problem solving. Topics include probability and statistics; geometry, including Euclidean, non-Euclidean, and coordinate; measurement, and real numbers. Three hours lecture/discussion a week.

IAI: M1 903

MAT 208 — Introductory Statistics (4)

Prerequisite: Appropriate placement test score or MAT 066 or MAT 068 or MAT 096 with a grade of “C” or higher

Focuses on mathematical reasoning and the solving of real-life problems, rather than on routine skills and appreciation. Includes descriptive methods, basic probability theory, probability distributions, statistical inference, correlation and regression, and F-test and analysis of variance. Four hours lecture/discussion a week. **IAI: M1 902**

MAT 210 — Finite Mathematics (3)

Prerequisite: MAT 150 with a grade of “C” or higher.

An introduction for non-mathematics majors to some useful mathematical concepts and applications in management, economics, business, social science, and other areas. Topics include an in-depth study of linear equations, linear programming, simplex method, matrix theory, an introduction to exponential and logarithmic functions, mathematics of finance, and an introduction to probability and statistics. Three hours lecture/discussion a week. **IAI: M1 906**

MAT 211 — Calculus for Business and Social Sciences (4)

Prerequisite: MAT 150 with a grade of “C” or higher.

An introduction for non-mathematics majors to some useful mathematical concepts and applications in management, economics, business, social science and other areas. Topics include functions and limits, differential calculus, integral calculus, and applications of calculus. Four hours lecture/discussion a week. **IAI: M1 900-B**

MAT 220 — Business Statistics (4)

Prerequisite: MAT 210, or MAT 211, or MAT 229 with a grade of “C” or higher.

Focuses on understanding the importance of applying statistical analysis to solve business problems. Includes descriptive methods, basic probability theory, probability distributions, statistical inference, correlation and regression, and f-test and analysis of variance. Four hours lecture/discussion a week. **IAI: M1 902, BUS 901**

MAT 229 — Calculus and Analytic Geometry I (5)

Prerequisite: MAT 155 with a grade of “C” or higher (Students who place into MAT 229 must have one year of high school Trigonometry with a passing grade)

First course in calculus and analytic geometry covering limits and their properties, definitions and techniques of differentiation and integration of algebraic and trigonometric functions, and applications. Five hour lecture/discussion a week. **IAI: M1 900-1, MTH 901**

MAT 230 — Calculus and Analytic Geometry II (5)**Prerequisite:** MAT 229 with a grade of "C" or higher

Second course in calculus and analytic geometry covering exponential, logarithmic, inverse trigonometric, hyperbolic functions; integration techniques; L'Hopital's rule; improper integrals; applications of integration; parametric equations; polar coordinates; conic sections; sequences and series; and Taylor series. Five hour lecture/discussion a week.

IAI: M1 900-2, MTH 902**MAT 231 — Calculus and Analytic Geometry III (5)****Prerequisite:** MAT 230 with a grade of "C" or higher

Third course in calculus and analytic geometry covering partial differentiation, multiple integrals, three dimensional space vectors, vector-valued functions, line integrals, surface integrals, Green's and Stokes' Theorems, parametric surfaces, and the divergence (Gauss) theorem. Five hour lecture/discussion a week. **IAI: M1 900-3, MTH 903**

MAT 240 — Linear Algebra (4)**Prerequisite:** MAT 231 with a grade of "C" or higher

A study of matrices, linear systems, vector spaces, and linear transformations. This course serves as a transition between the Calculus sequence and upper-level mathematics courses. Topics include: matrix algebra, transposition, inversion, determinants, solving linear systems, vector spaces, subspaces, linear dependence and independence, spanning sets, basis and dimension, inner product spaces, Gram-Schmidt process, linear transformations, inverses of linear transformations, representation of linear transformations as matrices, range, rank, kernel, nullity, eigenvalues, and eigenvectors. Applications and construction of mathematical proofs are emphasized. Four hours lecture/discussion a week. Limited Transfer – See advisor for more information.

MAT 260 — Differential Equations (3)**Prerequisite:** MAT 231 with a grade of "C" or higher

Includes first order and second order differential equations with applications, linear differential equations with constant coefficients and their applications, solution by Laplace transformation, solution by partial differential equations, boundary value problems, and Fourier series. Three hours lecture/discussion a week. **IAI: MTH 912**

MEDICAL ASSISTANT (MA)

MA 130 — Medical Assistant Skills I (4)**Prerequisite:** None

This course will begin by introducing the roles and responsibilities of a medical assistant as well as introduces the basic concept of medical assisting and its relation to other health fields. The purpose of medical records, charting in the patient record, and filing medical records. Additional topics in the course will emphasize on the professional and business communications from office protocol, greeting and receiving patients, explaining office policies, appointment scheduling, medical office equipment, mail services, and basic keyboarding. Students will learn to format and create a business letter, personal letter and chart notes as well as identify the different types of correspondence used in the medical office while displaying professionalism through written and verbal communications. Students will also be introduced to basic mathematics computations. Four hours lecture/discussion per week.

MA 133 — Electronic Health Records (3)**Prerequisite:** None

This course will allow the student to gain hands on experience of working in the medical office, by simulating real world administrative duties of the medical assistant. Students will be introduced to the electronic health record, as well as learn skills such as patient registration, scheduling, office management, insurance processing, patient care documentation and written orders. Three hours lecture/discussion per week.

MA 135 — Medical Assistant Skills II (2)**Prerequisite:** MA 130

This course will start by covering topics that include the medical and legal aspects in health care, the physician/patient/medical assistant relationship, the legal scope of medical assistants, professional and organizational ethics, and bioethical issues. This course will also provide practical application of insurance billing procedures, completion of claim forms, basic insurance terminology and various health plans including Medicare, Medicaid, HMOs and PPOs. Topics will include managed care, reimbursement and coding, and HIPAA compliance in the medical office. Additional topics covered within the course are banking procedures which includes accounts receivable and payable, payroll, checking writing and inventory. Two hours of lecture/discussion per week.

MA 140 — Medical Assistant Skills III (6-7 *)

Prerequisite: MA 135

This course introduces the skills necessary for assisting the physician with a complete history and physical examinations as well as learning how to obtain body measurements, vital signs, pulse oximetry and spirometry testing. Other topics include: Infection control and medical asepsis, autoclaving instruments, learning to assist with pediatric examinations, safety in the medical office, electrocardiography, specimen collection and processing, hematology testing, dermal punctures, and phlebotomy. Four hours lecture/discussion and six hours of lab experience per week.

* Certified phlebotomists may be eligible to register for 6 credit hours (3.5 lecture/discussion and 5 hours of lab experience per week.)

MA 230 — Medical Assistant Skills IV (4)

Prerequisite: MA 140

This course expands on the knowledge of the more complex procedures in the clinic setting such as introduction to administering, prescribing, dispensing medication, and administering immunization records. Additional topics include: emergencies in the medical office and community, first aid procedures, CPR, minor surgical procedures, rehabilitation, nutrition, exercise and guidelines for good health. Two hours lecture discussion per week and four hours lab experience per week.

MA 233 — Clinical MA Externship (2.5)

Prerequisite: MA 230 and concurrent enrollment in MA 237

This course requires the student, in the controlled environment of an approved externship site, to experience the hands on applications of administrative, clinical and professional procedures required. The experience allows the student to apply knowledge from the classroom and college medical laboratory environment to the ambulatory healthcare environment. Requires 200 clock hours of supervised practical experience.

MA 237 — Clinical MA Externship (1)

Prerequisite: MA 230 and concurrent enrollment in MA 233

This course will allow students to discuss what they have learned at the practicum site, as well as what qualities employers look for in employees, identify the goal of a resume and cover letter. Additional topics: appropriate professional attire and appearance for an interview, the do's and don'ts in preparing for an interview and applying for a job. Two hours of lecture/discussion per week.

MILITARY SCIENCE (MS)

MS 103 — Leadership & Personal Development (2)

Prerequisite: None

Introduces the Army Profession, Professional Competence, Adaptability, Teamwork, Lifelong Learning, and Comprehensive Fitness. Focus on developing basic knowledge and comprehension of Army leadership dimensions, attributes and core leader competencies while gaining an understanding of the Reserve Officer Training Corps Program, its purpose in the Army, and its advantages. One hour lecture/discussion and two hours lab a week. Limited Transfer – See advisor for more information. Limited Transfer – See advisor for more information. **Note: This course matches NIU's MILS 101 Introduction to the Army and Critical Thinking**

MS 104 — Foundations in Leadership (2)

Preferred: MS 103 (MILS 101) or prior military service or current military service with the Army National Guard or Army Reserve.

Introduction to the professional challenges and competencies needed for effective execution of the profession of arms and Army communication. Continuation of Army ethics and values that shape the army and the specific ways that these ethics are inculcated into Army culture. One hour lecture/discussion and two hours lab a week. Limited Transfer – See advisor for more information. **Note: This course matches NIU's MILS 102 Adaptive Leadership and Professional Competence.**

MS 203 — Innovative Tactical Leadership (2)

Preferred: MS 103(MILS 101) and MS 104 (MILS 102) or prior military service or current military service with the Army National Guard or Army Reserve.

Study of leadership, personnel management, critical thinking, Army problem solving, Troop Leading Procedures, Operations Orders process, and ethical decision-making. Cadets explore the dimensions of creative and innovative leadership strategies and styles by examining team dynamics and two historical leadership theories that form the basis of the Army leadership framework. One hour lecture/discussion and two hours lab a week. Limited Transfer – See advisor for more information. **Note: This course matches NIU's MILS 201 Leadership and Decision Making.**

MS 205 — Foundations of Tactical Leadership (2)

Preferred: MS 103 (MILS 101) and MS 104(MILS 102) or prior military service or current military service with the Army National Guard or Army Reserve.

Examines the challenges of leading teams in the complex operational environment. The course highlights dimensions of terrain analysis, patrolling, and operation orders. Further study of the theoretical basis of the Army Leadership Requirements Model explores the dynamics of adaptive leadership in the context of military operations. Cadets develop greater self-awareness as they assess their own leadership styles and practice communication and team building skills. One hour lecture/discussion and two hours lab a week. Limited Transfer – See advisor for more information. **Note: This course matches NIU's MILS 202 Army Doctrine and Team Development.**

MUSIC (MUS)

MUS 100 — Fundamentals of Music (3)

Prerequisite: None

An introduction to the basic elements of music: notation, rhythmic patterns, intervals, and chords. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

MUS 101 — Music Theory I (3)

Prerequisite: MUS 100

An introduction to theory curriculum designed for music majors or minors. This course covers applications of fundamental music rudiments such as meter, scales, keys, intervals and chords. These tools will be used for both composition and analysis. This course is recommended for music majors, or those who have a strong interest in music. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

MUS 102 — Music Theory II (3)

Prerequisite: MUS 101

A continuation of the four-semester theory curriculum designed for music majors or minors. Students will study modulation and complete the study of primary chordal function. Students will begin to apply their knowledge of tools and concepts to other types of music such as folk, pop, and jazz. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

MUS 130 — Survey of American Music (3)

Prerequisite: None

A study of the historical development and major cultural contributions of American music and composers. This course includes symphonic, jazz, and popular forms, within the context of the American culture from Colonial times to the present. Three hours lecture/discussion a week. **IAI: F1 904**

MUS 139 — Private Applied Music I (1)

Prerequisite: None

Private study in music performance. Instruction to develop musical skills for personal enrichment or continuing music studies at a baccalaureate granting institution. Lessons are offered in both instrumental and vocal instruction. Lessons include solo instruction, development of performance skills including public performance. Lesson times are arranged with the instructor at the beginning of the course. Does not meet the requirements for an Associate in Fine Arts Degree. Repeatable for a maximum of 4 credits. One half-hour lesson/discussion and one hour lab a week. Limited Transfer – See advisor for more information.

MUS 140 — Class Instruction - Guitar I (1)

Prerequisite: None

An introductory course for students, with or without knowledge of music. This course will help students acquire skills of playing guitar. One hour lecture/discussion a week. Limited Transfer – See advisor for more information.

MUS 142 — Class Instruction - Guitar II (1)

Prerequisite: MUS 140

A continuation of MUS 140. This course is designed for students who want to continue guitar soloing and who want to continue developing their music reading skills. One hour lecture/discussion a week. Limited Transfer – See advisor for more information.

MUS 180 — Private Piano I (1)

Prerequisite: None

Private instruction for those desiring to improve their piano skills. Lessons include development of solo performance skills and public performance skills. May be repeated three times. Does not meet the requirements for an Associate in Fine Arts Degree. One half-hour lesson/discussion and one hour lab a week. Limited Transfer – See advisor for more information.

MUS 181 — Private Guitar I (1)

Prerequisite: None

Private instruction for those desiring to improve their guitar skills. Lessons include development of solo and public performance skills. May be repeated three times. Does not meet the requirements for an Associate in Fine Arts Degree. One half-hour lesson/discussion and one hour lab a week. Limited Transfer – See advisor for more information.

MUS 183 — Private Voice I (1)

Prerequisite: None

Private instruction for those desiring to improve their vocal skills. Lessons include solo instruction and development of performance skills, including public performance. May be repeated three times. Does not meet the requirements for an Associate in Fine Arts Degree. One half-hour lesson/discussion and one hour lab a week. Limited Transfer – See advisor for more information.

MUS 209 — Music for the Elementary School (3)

Prerequisite: None

Music methods and instructional materials for the elementary grades through activities in singing, listening, creating, playing, and moving to music. A portion of the work will stress the understanding of music fundamentals and the acquisition of functional facility at the piano. Not intended for music majors. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

MUS 220 — Music Appreciation (3)**Prerequisite:** None

An introduction to representative music masterpieces through perceptive listening. This course emphasizes the elements of music, various musical forms and periods, and great composers and performers. This course broadens the non-music major's understanding and enjoyment of music. Three hours lecture/discussion a week. **IAI: F1 900**

MUS 222 — Exploring Non-Western World Culture Through Music (3)**Prerequisite:** None

An introduction to music in various non-Western parts of the world, with emphasis placed on the way music functions within each society. The basic elements of music (melody, harmony, rhythm, and form) will be covered through perceptive listening. Such music cultures as those of South Asia, East Asia, Southeast Asia, the Pacific, Africa, and the Americas will be examined. Three hours lecture/discussion a week. **IAI: F1 903N**

MUS 239 — Private Applied Music II (2)**Prerequisite:** MUS 139 or consent of instructor

Private study in music performance. Instruction to develop musical skills for personal enrichment or continuing music studies at a baccalaureate granting institution. Lessons are offered in both instrumental and vocal instruction. Lessons include solo instruction, development of performance skills including public performance. Lesson times are arranged with the instructor at the beginning of the course. Does not meet the requirements for an Associate in Fine Arts Degree. Repeatable for a maximum of 4 credits. One hour lesson/discussion and two hours lab a week. Limited Transfer – See advisor for more information.

MUS 250 — Class Instruction: Voice I (1)**Prerequisite:** None

An introduction to voice designed for students who want to learn voice or who have studied before and want to continue. One hour lecture/discussion a week. Limited Transfer – See advisor for more information.

MUS 260 — Class Instruction: Voice II (1)**Prerequisite:** MUS 250

A continuation of the study of voice designed for students who want to learn voice or who have studied before and want to continue. One hour lecture/discussion a week. Limited Transfer – See advisor for more information.

MUS 270 — Class Instruction: Piano I (1)**Prerequisite:** None

A study of the fundamentals of reading and playing basic piano literature, harmonizing, improvising and sight-reading. Designed for students who have little or no previous piano study or music reading. One hour lecture/discussion a week. Limited Transfer – See advisor for more information.

MUS 280 — Class Instruction: Piano II (1)**Prerequisite:** MUS 270

A continuation of MUS 270. Content includes increased focus on keyboard technique, use of pedal, ensemble and solo performance. One hour lecture/discussion a week. Limited Transfer – See advisor for more information.

MUS 281 — Private Guitar II (2)**Prerequisite:** None

Private instruction for those desiring to develop or improve their guitar skills. Lessons include solo instruction and development of performance skills, including public performance. May be repeated three times. Does not meet the requirements for a Fine Arts Degree. One hour lesson/discussion and two hours lab a week. Limited Transfer – See advisor for more information.

MUS 287 — Private Piano II (2)**Prerequisite:** None

Private instruction for those desiring to improve their piano skills. Lessons include solo instruction and development of performance skills, including public performance. May be repeated three times. Does not meet the requirements for a Fine Arts Degree. One hour lesson/discussion and two hours lab a week. Limited Transfer – See advisor for more information.

MUS 288 — Private Voice II (2)**Prerequisite:** None

Private instruction for those desiring to improve their vocal skills. Lessons include solo instruction and development of performance skills, including public performance. May be repeated three times. Does not meet the requirements for a Fine Arts Degree. One hour lesson/discussion and two hours lab a week. Limited Transfer – See advisor for more information.

NURSING (NUR)

Formal acceptance to the nursing program and permission of the Nursing Department are required for registration in all nursing courses needed for A.A.S. degree completion. Course sections and sequence will be assigned by the faculty.

****Denotes courses not required for A.A.S. Degree in nursing.**

NUR 100 — Basic Nurse Assistant Training (7)**

Prerequisite: Appropriate placement test score or ENG 089 with a grade of "C" or higher

Designed for students interested in working in long-term care facilities, home health agencies, and hospitals. This course includes 135 hours of instruction, 95 hours of theory and laboratory, and 40 hours clinical experience. Approved by the Illinois Department of Public Health. Five hours lecture/discussion and four hours lab a week.

Note: Contact Basic Nurse Assistant (BNA) Coordinator for information.

NUR 106 — Nursing Seminar (.5-5)**

Prerequisite: None

Special studies course designed to meet student and community needs. Available upon request in specific situations which do not comply with regular course offerings, but do merit college credit and provide for occupational needs. Credit will be determined on a contact hour basis.

NUR 108 — Certified Nursing Assistant Recertification (.5)**

Prerequisite: Program Coordinator Consent

Must have a TB skin test, MMR verification, fingerprint background check and completed an IDPH approved BNA program. Designed for students interested in working in nursing homes, other long-term health care facilities, or hospital settings and who must validate selected performance skills due to a 24-30 month lapse in CNA employment. Through this six-hour testing program, students will be reevaluated in clinical settings with hands-on-skills. May be repeated once. Graded as Pass/Fail.

NUR 117 — Fundamentals of Nursing (6-7*)

Prerequisite: BIO 103 & BIO 105 with grades of "B" or higher or completion of BIO 258 & BIO 259 with grades of "C" or higher, COM 100, ENG 103, & PSY 102 with grades of "C" or higher.

Designed to develop nursing and communication skills to enable the student to administer care to adult clients within the scope of the beginning nurse. Introduces fundamental concepts of nursing, including the nursing process and the promotion of wellness and health maintenance through patient education. Concurrent clinical and laboratory experience designed to give the student the opportunity to utilize the nursing process and develop fundamental level expertise in nursing skills. Four and a half hours lecture/discussion, two hours lab class and six hours clinical experience a week. **Note: *CNA's may be eligible to register for 6 credit hours. See the Nursing Coordinator.**

NUR 123 — Orientation to Pharmacology (1)

Prerequisite: Concurrent enrollment in NUR 117

Focuses on the information required to safely dispense drugs and monitor the effects of drug therapy. Emphasis will be on dosage calculations and principles of pharmacology including pharmacokinetics, pharmacodynamics, and the nursing process related to medication administration. Nursing implications will be discussed for broad classifications of medications. One hour lecture/discussion a week.

NUR 168 — Adult Health Nursing I (4-5*)

Prerequisite: BIO 258, NUR 117, NUR 123, with grades of "C" or higher

Introduces the pathophysiology of commonly experienced chronic diseases and acute conditions found in the adult and geriatric populations. Alterations in oxygenation including ventilation, perfusion, and transport will be addressed. Cancer nursing will be incorporated in the chronic disease discussion. The Nursing Process model will serve as a vehicle for the assessment and nursing management of adults experiencing interference with their physical and emotional needs. Concurrent clinical experiences on medical and surgical units provide the opportunities to apply the nursing process and incorporate patient/caregiver education. Opportunities to increase expertise with nursing skills learned in the lab setting in NUR 117 and in this course will be available. Three and one-half hours of lecture/discussion and five hours of clinical/lab experience a week are required.

Note: *LPN's may be eligible to register for 4 credit hours. See the Nursing Coordinator.

NUR 169 — Adult Health Nursing II (4-5*)

Prerequisite: BIO 258, NUR 168 with grades of "C" or higher

Utilizes concepts introduced in Nursing 168. The student will apply critical thinking to make connections as this course focuses on the pathophysiology of select chronic diseases and acute conditions found in the adult and geriatric populations. Alterations in regulatory processes, the gastrointestinal tract and its varied functions, movement and coordination, and neuro-sensory processes will be addressed. Concurrent clinical experiences on medical and surgical units provide opportunities to analyze the nursing process and identify trends in assessment findings while managing the patient and incorporating relevant patient/caregiver education. Opportunities to perform learned skills at an increasing level will be available. Three and one-half hours lecture/discussion and five hours clinical/lab experience a week are required. **Note: *LPN's may be eligible to register for 4 credit hours. See the Nursing Coordinator.**

NUR 196 — Nursing Internship (2-3)**

Prerequisite: NUR 169 with a grade of "C" or higher (Current R.N. license will satisfy prerequisite.)

A work/study course that is designed to assist the student in developing expertise giving comprehensive nursing care to adult clients. Emphasizes the nursing process, I.V. therapy, and other technical skills. Students will be expected to practice leadership skills and demonstrate professionalism. The course consists of 32-40 hours clinical experience per week at an area hospital. Clinical hours: 96-144 including post conference.

NUR 226 — Maternal Child Health Nursing (4-5*)

Prerequisite: BIO 259, NUR 169, PSY 280 with grades of "C" or higher

Focuses on a family centered approach to pregnancy, birth, and adaptation to extra-uterine life for contemporary childbearing families. Facilitates the application of: select mental health concepts, communication, collaboration, caring, and critical thinking/clinical reasoning necessary for safe care of childbearing families that is developmentally and culturally appropriate. Differentiates applicable patient education focusing on the family unit. Application of knowledge and skills occurs in the nursing skills laboratory and in a variety of maternal health areas. Three hours lecture/discussion and five hours clinical/lab experience a week.

Note: *LPN's may be eligible to register for 4.0 credit hours. See the Nursing Coordinator.

NUR 227 — Pediatric Health Nursing (4-5*)

Prerequisite: BIO 259, NUR 169, PSY 280 with grades of "C" or higher

Focuses on children throughout the health and wellness continuum with emphasis placed on maintaining the dignity of the child and promotion of healthy growth and development. Integrates the concept of family-centered nursing through care of the child and family. Examination of pediatric clients with acute and chronic health alterations will guide students in the integration of the nursing process. Patient education will remain an expectation for the patient and the family to promote family-centered care. Application of knowledge and skills occurs in the nursing skills laboratory and in a variety of pediatric health areas. Three hours lecture/discussion and five hours clinical/lab experience a week. **Note:** *LPN's may be eligible to register for 4.0 credit hours. See the Nursing Coordinator.

NUR 239 — Adult Health Nursing III (5)

Prerequisite: BIO 213, NUR 226, NUR 227 with grades of "C" or higher

Continued emphasis on building the student's current adult health theory and clinical knowledge base. This capstone course emphasizes nursing care of adults with acute, complex health problems. Alterations in pathophysiological processes that contribute to acute and chronic illnesses are investigated at a comprehensive level. Synthesis of data and use of evidenced-based research will guide the development of the nursing care plan. Use of technology will be emphasized. Concurrent clinical/lab experience is designed to augment leadership skills, communication, caring, advocacy, assessment, and decision making. Three hours lecture/discussion and six hours clinical/lab experience a week.

NUR 249 — Mental Health Nursing (5)

Prerequisite: BIO 213, NUR 226, NUR 227, with grades of "C" or higher

Focuses on the role of the nurse in maintaining or restoring whole-person health and wellness throughout the life span. Content will include theory and practice of mental health and common health/wellness concerns in the community. This capstone course promotes holistic nursing care focused on psychosocial, spiritual and cultural components. Course content will include nursing care appropriate for traditional inpatient settings, as well as adaptations appropriate to community settings. Concurrent clinical experiences will include hospital, clinic, home health, and other community based settings. Three (3) hours lecture/discussion and five and a half (5.5) hours clinical experience a week.

NUR 262 — Professional Nursing (1)

Prerequisite: BIO 213, NUR 226, NUR 227 with grades of "C" or higher

Seminar in legal and professional responsibilities of the Registered Nurse. Prepares the graduate nurse for entry into nursing practice. This capstone course emphasizes the leadership role and function of the registered nurse, including accountability, delegation, nursing organizations, healthcare economics and the legal and ethical aspects of the nursing process. The course will focus on past, present and future social and economic events and their impact on nursing. One hour lecture/discussion a week.

OFFICE SYSTEMS (OS)

OS 101 — Beginning Keyboarding (3)

Prerequisite: None

Designed to enable students to develop speed and accuracy in keyboarding. Word processing software will be used to develop and format memos, letters, reports, and newsletters. Two hours lecture/discussion and two hours lab a week.

OS 106 — Office Systems Seminar (.5-3)

Prerequisite: None

Designed to meet special student and community needs in business areas. Developed upon request for the purpose of meeting the needs of specific situations. Credit determined on contact hour basis. May be repeated three times.

OS 107 — Employment Strategies (3)

Prerequisite: None

This course is designed to aid students in developing the skills and materials necessary to obtain employment and to develop characteristics associated with job success. Students will have the opportunity to develop job search documents including resumes, cover letters and thank you letters. Job search techniques and interviewing will also be addressed. Two hours lecture/discussion per week.

OS 108 — Introduction to Software Applications (3)**Prerequisite:** None

A course introducing several current business software applications. The course will be project-based using word processing, spreadsheet, database, and presentation software applications. The course will include internet browser use, operating software, application integration, and file management. Two hours lecture/discussion and two hours lab per week.

OS 122 — Reference Manual/Proofreading (3)**Prerequisite:** None

Training in the use of a reference manual appropriate for office workers and writers. Students build editing skills for business and personal use. Course covers English grammar, style, usage, and techniques for typing business documents. Some formatting of letters, memos, and reports will be incorporated. The course is also designed to present the students with basic rules of spelling and techniques for improving spelling, and to equip the student with a high level of skill in proofreading. Three hours lecture/discussion a week.

OS 125 — Word Processing/Word (3)**Prerequisite:** None

Introduction to the capabilities of the Microsoft Word software application. Topics include creating, enhancing, and sharing documents, working with tables, templates, adding navigational tools, table of contents/index/bibliography, and securing documents. Students will have the opportunity to learn word processing for professional employment purposes, as an information worker or for personal use. Document/file management will also be included. Two hours lecture/discussion and two hours lab a week.

OS 127 — Advanced Word Processing/Word (3)**Prerequisite:** OS 125

This course includes advanced word processing applications. Major topics include using the advanced features of Microsoft Word, such as data charts, merge, styles, text columns, outlines, table of contents/indexes, sort and select, and creating fill-in forms. Two hours lecture/discussion and two hour labs a week.

OS 133 — Spreadsheets/Excel (3)**Prerequisite:** None

A course in the concepts and fundamental operation of a spreadsheet. Topics include data entry techniques, formulas, functions, linking, charts, table formatting, data analysis, sharing data, and pivot tables. Two hours lecture/discussion and two hours lab a week.

Credit may not be received if prior credit earned in CIS 133.

OS 135 — Database/Access (3)**Prerequisite:** None

A course in microcomputer database management. Topics include database design, report generation, interactive queries, and screen formatting. Two hours lecture/discussion and two hours lab a week.

OS 136 — Presentation Graphics/PowerPoint (3)**Prerequisite:** None

Create "slide shows" used to enhance presentations at meetings, in classes, and at trade shows. This course serves as an introduction to multimedia capabilities. Students will incorporate graphics, scanned images, short videos, and sound into their presentations. Software to be used: PowerPoint which is part of Microsoft Office. Students will follow detailed instructions as they learn how to use the software. Students will create a "slide show" of their choice, which could be used in another course. One and one-half hours lecture/discussion a week.

OS 138 — QuickBooks (3)**Prerequisite:** None

This course is designed to give students practice in using the features of QuickBooks software. Students will be setting up customers, invoicing vendors, and payroll files and will be able to see how these files are connected through linked data. Two hours lecture/discussion and two hours lab per week.

OS 156 — Desktop Publishing/Publisher (3)**Prerequisite:** None

A course in desktop publishing using MS Publisher. Students will use a wide range of Publisher's desktop publishing capabilities including flyers, business forms, newsletters, and letterheads. Students analyze and make choices based on their knowledge of the software and design principles as they carry out assigned projects. Two hours lecture/discussion and two hours lab a week. Repeatable three times as software changes.

OS 233 — Advanced Spreadsheets/Excel (3)**Prerequisite:** OS 133

Students will expand upon the skills learned in OS 133 Spreadsheets/Excel. Students will learn how to use spreadsheets to organize, present, evaluate data, and use complex formulas and functions. Students will learn about PivotTables, PivotCharts, Macros, use data analysis, solver and scenario features, as well as sharing workbooks, and connecting to external data. Upon completion of this course, students should have learned the skills required to pass the Microsoft Office Specialist (MOS) Excel Expert certificate exam. One-half hour lecture/discussion and one hour lab a week.

OS 246 — Business Communications (3)**Prerequisite:** None

Principles of business communications and analysis of various communication situations with emphasis on appropriate organizing techniques and tone. Requires correct use of the English language. Three hours lecture/discussion a week.

OS 252 — Office Procedures (3)

Prerequisite: OS 125, (CIS 133 or OS 133), (CIS 135 or OS 135) and OS 136, or concurrent enrollment in OS 125, (CIS 133 or OS 133), (CIS 135 or OS 135) and OS 136

Capstone course designed to prepare students to perform a wide range of secretarial/administrative duties and responsibilities required in any type of office. Equips students with a knowledge of procedures, basic attitudes and skills to develop competence in decision-making processes.

Two hours lecture/discussion and two hours lab a week.

OS 253 — Records Management (3)

Prerequisite: None

An introduction to various records systems used in business including database management and development of filing and indexing skills. Includes alphabetic, subject, numeric, and geographic filing systems; identification, storage, and retrieval methods; record control and retention; equipment and supplies; and evaluation of systems and personnel.

Three hours lecture/discussion a week.

OS 270 — Directed Office Experience (3)

Prerequisite: Instructor consent

Internship training in an office situation which is compatible with the student's educational objective. Requires a minimum of 225 hours of experience in an office setting.

PHILOSOPHY (PHL)

PHL 101 — Introduction to Philosophy (3)

Prerequisite: None

An introduction to the key questions and influential figures of philosophy including Socrates, Plato, and Aristotle. The course highlights great philosophical thinkers and discusses their views on questions about reality, knowledge, religion, politics, and ethics. Three hours lecture/discussion a week. **IAI: H4 900**

PHL 103 — Introduction to Logic (3)

Prerequisite: None

An introduction to the analysis of arguments. What constitutes a good argument? What constitutes a bad argument? This course will introduce and apply rules of reasoning and expose common errors in arguments. In the process, students will see logic at work through the examination of arguments taken from everyday discourse, including political speeches, letters to the editor, and news articles. Three hours lecture/discussion a week.

IAI: H4 906

PHL 198 — World Religions (3)

Prerequisite: None

An introductory survey of selected teachings, practices, and institutions of major Eastern and Western Religions. This course includes historical accounts of the origin of these religions, as well as their rituals, worldviews, and the various sects/factions associated with each religion. Three hours lecture/discussion a week. **IAI: H5 904N**

PHL 200 — Ethics (3)

Prerequisite: None

A study of philosophical theories and principles related to the question, "How should one live?" This course looks closely at the arguments for moral relativism, the relationship between religion and morality, selfishness and altruism, duty, and virtue. Students will also encounter various contemporary moral issues, such as euthanasia, the treatment of non-human animals, and poverty as they attempt to apply moral theories to particular moral situations. Three hours lecture/discussion a week. **IAI: H4 904**

PHL 298 — Topics of Philosophy (3)

Prerequisite: None

A study of specific topics in philosophy. Topics might include applied ethics (business/medical ethics), the environment, political philosophy, the writings of a specific philosopher or group of philosophers, or other topics of particular interest. Repeatable three times for different special topics. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

PHYSICAL EDUCATION (PE)

PE 101 — Golf (1)

Prerequisite: None

Fundamentals of golf, including practice on course. One-half hour lecture/discussion and one hour lab a week. May be repeated one time. Limited Transfer – See advisor for more information.

PE 109 — Volleyball (1)

Prerequisite: None

Fundamentals of volleyball in individual and team play. One-half hour lecture/discussion and one hour lab a week. May be repeated one time. Limited Transfer – See advisor for more information.

PE 122 — Badminton (1)

Prerequisite: None

Fundamentals in skills and strategy of both singles and doubles play in badminton. One-half hour lecture/discussion and one hour lab a week. May be repeated one time. Limited Transfer – See advisor for more information.

PE 137 — Physical Fitness Challenge I (.5-1)

Prerequisite: None

Continues to develop the student's fitness level in cardiovascular endurance, strength, and muscular endurance. Weight machines utilized as another method of gaining both strength and endurance. One to two hours lab a week. Limited Transfer – See advisor for more information.

Concurrent enrollment not allowed in PE 140 or PE 141.

PE 138 — Physical Fitness Challenge II (.5-1)**Prerequisite:** None

Focuses on a continuation of fitness skills, assessment tests, and presenting new knowledge concerning fitness of the body during exercise. Includes free weights, interval training, light/heavy workouts, and injuries related to exercising. Repeatable three times. One to two hours lab a week. May be repeated three times. Limited Transfer – See advisor for more information. **Concurrent enrollment not allowed in PE 140 or PE 141.**

PE 140 — Fitness Training I (1)**Prerequisite:** None

Provides a personal fitness program utilizing cardiovascular and resistance exercise equipment. Individualized exercise programs will be developed based on the results of physiological assessments. Participation in the Fitness Center provides the student with the opportunity to increase cardiovascular efficiency, improve muscle tone, and decrease body fat. Two hours open lab a week. Limited Transfer – See advisor for more information. **Concurrent enrollment not allowed in PE 137 or PE 138.**

PE 141 — Fitness Training II (1)**Prerequisite:** PE 140

A continuation of PE 140. The class is designed for those students who wish to continue to benefit from the participation in a regular exercise program. Physiological tests may be re-administered and individual exercise programs will be reviewed and updated. Two hours open lab a week. May be repeated three times. Limited Transfer – See advisor for more information. **Concurrent enrollment not allowed in PE 137 or PE 138.**

PE 162 — First Aid and Emergency Response (3)**Prerequisite:** None

Prepares the student for administering basic first aid; and adult, child, and infant cardiopulmonary resuscitation (CPR). Incorporates personal safety and accident prevention information as part of first aid. Upon successful completion of the course, the student will receive American Red Cross (ARC) certification in Responding to Emergencies and Community CPR. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

PE 190 — Topics in Physical Education (.5-3)**Prerequisite:** None

Designed to meet student and community needs in Physical Education. Developed upon request for the purpose of meeting the needs of specific situations. Credit is determined on a contact hour basis. Repeatable three times up to a maximum of twelve credit hours. Limited Transfer – See advisor for more information.

PE 200 — Introduction to Physical Education (2)**Prerequisite:** None

Introduction to physical education and its place in the total field of education; philosophy, aims, objectives, and principles of physical education. Two hours lecture/discussion a week. Limited Transfer – See advisor for more information.

PE 214 — Basketball Officiating (1)**Prerequisite:** None

Prepares the student to officiate in basketball by exposure through lecture and participation to basketball rules and their interpretation. One hour lecture/discussion a week. Limited Transfer – See advisor for more information.

PE 220 — Theory and Practice of Basketball (2)**Prerequisite:** None

Individual skills and team techniques, rules, and strategy of basketball. Laboratory participation and preparation of notebook required. Two hours lecture/discussion and one hour lab a week. Limited Transfer – See advisor for more information.

PE 250 — Physical Education for Children (3)**Prerequisite:** None

Physical education activities for elementary school children. Designed to meet state certification requirements for elementary education, special education, and physical education majors. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

PHYSICAL SCIENCE (PHS)

Concurrent enrollment in or successful completion of the lecture component of a lecture/laboratory science course combination is required for continued enrollment in and completion of the associated laboratory section. Student withdrawal from the lecture component of the course for any reason will automatically result in the withdrawal from the laboratory section of the associated course, regardless of the grade earned in the laboratory section up to that point. Students will not be allowed to add back the laboratory section once automatically withdrawn.

PHS 118 — Physical Science Lab (1)**Prerequisite:** PHS 119 or concurrent enrollment

An introductory laboratory course of study in the physical sciences. Laboratory investigations are guided investigations of topics coordinated with the lecture course, Introduction to Physical Science. Two hours of laboratory experiences a week are required for one credit hour credit. **IAI: P9 900L**

PHS 119 — Introduction to Physical Science (3)**Prerequisite:** Appropriate placement test scores, OR MAT 066 or MAT 068 or MAT 096 with a grade of "C" or higher

Emphasizes the fundamental principles of chemistry, physics, geology, meteorology, and astronomy and the philosophical importance of scientific discoveries. Three hours lecture/discussion a week. **IAI: P9 900**

PHS 120 — Introduction to Physical Geology (3)**Prerequisite:** None

Introduction to geologic principles from a physical perspective. Includes topics such as the formation of rocks and minerals, internal and external processes modifying the earth's surface and phenomena, and the evolutionary history of the earth, including its life forms, oceans, and atmosphere. Three hours lecture/discussion a week. **IAI: P1 907**

PHS 130 — Introduction to Astronomy (3)**Prerequisite:** Appropriate placement test scores, OR MAT 066 or MAT 068 or MAT 096 with a grade of "C" or higherIntroduction to Astronomy is a broad survey of modern astronomy examining astronomical phenomena and concepts, including the solar system, stars and galaxies, planetary motions, atoms and radiation, and the origin and evolution of the universe. Three hours lecture/discussion a week. **IAI: P1 906****PHS 298 — Topics in Science (1-4)****Prerequisite:** None

Special studies course designed to meet students needs in physical sciences. One to four hours lecture/discussion per week. Repeatable three times as topics change. Limited Transfer – See advisor for more information.

PHYSICS (PHY)

Concurrent enrollment in or successful completion of the lecture component of a lecture/laboratory science course combination is required for continued enrollment in and completion of the associated laboratory section. Student withdrawal from the lecture component of the course for any reason will automatically result in the withdrawal from the laboratory section of the associated course, regardless of the grade earned in the laboratory section up to that point. Students will not be allowed to add back the laboratory section once automatically withdrawn.

PHY 150 — Introductory Physics (3)**Prerequisite:** Appropriate placement test scores, OR MAT 066 or MAT 068 or MAT 096 with a grade of "C" or higherIntroduction to the concepts and principles of physics including mechanics, heat, sound, light, electricity, magnetism, and modern physics. Three hours lecture/discussion a week. **IAI: P1 900****PHY 151 — Introductory Physics Laboratory (1)****Prerequisite:** PHY 150 or concurrent enrollmentLaboratory to accompany PHY 150. Two hours lab a week. **IAI: P1 900L****PHY 250 — General Physics I (4)****Prerequisite:** MAT 155 with a grade of "C" or higherStudy of mechanics and heat. Three hours lecture/discussion and three hours lab a week. **IAI: P1 900L****PHY 251 — General Physics II (4)****Prerequisite:** PHY 250 with a grade of "C" or higher

Study of sound, light, magnetism, electricity, and applications of modern physics. Three hours lecture/discussion and three hours lab a week.

PHY 263 — Fundamentals of Physics I (4)**Prerequisite:** MAT 229 with a grade of "C" or higher, or concurrent enrollmentA first course in mechanics using calculus. Topics include kinematics; Newton's laws; work and energy/conservation of linear momentum; angular momentum; rotational dynamics; harmonic motion; fluid statics and motion; gravitation; mechanical waves; and sound. Three hours lecture/discussion and three hours lab a week. **IAI: P2 900L; PHY 911****PHY 273 — Fundamentals of Physics II (4)****Prerequisite:** PHY 260 or PHY 263, MAT 229 with a grade of "C" or higherA first course in electricity and magnetism using calculus. Topics include charge; electric field and potential; resistance, capacitance, and inductance; DC and AC circuits; magnetic field; laws of Gauss, Ampere, and Faraday; and Maxwell's equations; and electromagnetic waves. Three hours lecture/discussion and three hours lab a week. **IAI: PHY 912****PHY 283 — Fundamentals of Physics III (3)****Prerequisite:** PHY 273 with a grade of "C" or higherA first course in quantum physics using calculus. Topics include quantization; the atom; solid state physics and conduction; nuclear physics; elementary particle physics; geometric and physical optics; and relativity. **IAI: PHY 914**

POLITICAL SCIENCE (PLS)

PLS 140 — Introduction to American Government and Politics (3)**Prerequisite:** NoneAn introduction to political culture, the Constitution, civil liberties, political parties and interest groups, and public policy decision-making. Three hours lecture/discussion a week. **IAI: S5 900****PLS 210 — International Relations (3)****Prerequisite:** NoneAn introduction to the study of the relations among the world's political systems. Special emphasis will be given to such topics as the state system, nationalism, ideology, foreign policy, decision-making processes, diplomacy, trade, war, international law, and international organizations. Three hours lecture/discussion a week. **IAI: S5 904****PLS 240 — State and Local Government (3)****Prerequisite:** NoneAn introduction to the organization and powers of state and local governments in the United States. Emphasis is on the Constitution, the problems of revision, voting and campaigning, the role of state and local interest groups, and the state judiciary and judicial regions. Three hours lecture/discussion a week. **IAI: S5 902**

PSYCHOLOGY (PSY)

PSY 102 — Introduction to Psychology (3)

Prerequisite: None

A survey of the study of human and animal behavior with emphasis on the scientific nature of contemporary psychological investigation. Topics may include the biology of behavior, sensation and perception, learning, memory, cognition, motivation, emotion, life-span development of behavior, personality, abnormal behavior and its therapies, social behavior and individual differences. Three hours lecture/discussion a week. **IAI: S6 900**

PSY 210 — Educational Psychology (3)

Prerequisite: PSY 102

A study of learners and learning processes with emphasis on problems of special interest to teachers and others concerned with the management of the learning environment. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

PSY 216 — Abnormal Psychology (3)

Prerequisite: PSY 102

The integration of theory and empirical research as it relates to research methods, definition, assessment, categorization of behavior, biological, psychosocial, sociocultural origins of abnormal behavior, treatment and prevention. Three hours lecture/discussion a week. **IAI: PSY 905**

PSY 225 — Psychology of Childhood and Adolescence (3)

Prerequisite: PSY 102

Introduction to theory and research on the biological, physical, social and cognitive development of the human child from conception to adolescence. Topics may include genetic factors, prenatal development, sensory and perceptual changes, motor system development, language acquisition, social learning, cultural influences and aspects of abnormal development. Three hours lecture/discussion a week. **IAI: S6 903**

PSY 256 - Theories of Personality (3)

Prerequisite: PSY 102

An exploration of personality theory, with emphasis on research methods, personality assessment, the psychoanalytical and neopsychoanalytical approaches, the trait approach, the humanistic approach, the cognitive approach, and the behavioral/social learning approach. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

PSY 280 — Life-Span Human Development (3)

Prerequisite: PSY 102

A study of the neurobiological, physical, cognitive, social and emotional development of humans from conception through childhood, adolescence, adulthood and old age. Emphasizes normal developmental states and patterns of adjustment to differing life-time demands. The theories and principles of human development are examined in light of contemporary research. Three hours lecture/discussion a week. **IAI: S6 902**

PSY 286 — Social Psychology (3)

Prerequisite: PSY 102

Social psychology is a systematic introduction of theory and research on the ways social factors influence individual and group behavior. It is a field that examines attitudes, social perception, and the establishment of norms, conformity, leadership, group dynamics and research methods, emphasizing their effects on the individual. Thus social psychology is the integration of theory and empirical research as they relate to: research methods, attitude formation and change, social cognition, interpersonal relations, group processes, and social influence. Three hours lecture/discussion a week. **IAI: S8 900 PSY 908**

RADIOLOGIC TECHNOLOGY (RA)

Formal acceptance to the Radiologic Technology program and permission of the Radiologic Technology faculty are required for registration in all Radiologic Technology courses needed for A.A.S. degree completion. Course sections and sequence will be assigned by the faculty.

RA 100 — Radiographic Imaging I (2)

Prerequisite: Program Coordinator Consent

Corequisite: RA 104

Provides an introduction to the principles of image receptors, radiographic quality, image processing and image handling. Introduces terminology related to diagnostic imaging to facilitate the ability to communicate effectively within the medical imaging environment. Two hours lecture/discussion a week.

RA 101 — Patient Care Techniques (2)

Prerequisite: Program Coordinator Consent

Provides the students with the opportunity to develop an understanding of procedures appropriate for interpersonal relationships along with ethical responsibilities, effective communications, and empathy for the patient. Discussion of medicolegal considerations will assist the student in understanding legal responsibilities. Proper techniques for asepsis, safely transporting patients, drug administration, medical emergencies, special patient care, infection control, and emergency radiography will also be included. Two hours lecture/discussion a week.

RA 102 — Radiographic Positions and Procedures I (5)

Prerequisite: Program Coordinator Consent

A study of the basic principles of radiographic anatomy and positioning of the various routine and supplemental views of the chest, abdomen, and upper and lower extremities. Emphasis is placed on practical positioning skills, anatomy, and image evaluation. This course is supplemented with practical application in the energized exposure lab and clinical facility. Four hours lecture/discussion and two hours lab a week.

RA 104 — Clinical Practicum I (3)**Corequisite:** RA 100

A course in the practical application of radiographic principles and procedures. Students are assigned two days per week to a clinical education site to observe and perform radiographic procedures under the supervision of a clinical instructor and staff radiographers. Students will be expected to demonstrate competency in image processing procedures, equipment manipulation, and basic radiography of the chest and abdomen. Includes a four-week orientation prior to assignment to clinical education site that prepares the students for safe and effective clinical performance.

RA 105 — Medical Terminology for Radiography (1)**Prerequisite:** Program Coordinator Consent

An introduction to the language of medicine necessary for effective communication in the clinical environment. A word-building system will be introduced and abbreviations and symbols will be discussed. Focus will be on the understanding of radiographic orders and interpretation of patient histories and diagnostic reports. One hour lecture/discussion a week.

RA 106 — Radiologic Technology Seminar (.5-3)**Prerequisite:** None

Designed to meet special student, graduate, and community needs in radiologic technology, this seminar, workshop or course will be developed upon request to meet specific needs not included in the radiology program. Credit will be determined on a contact hour basis.

RA 111 — Radiographic Imaging II (3)**Prerequisite:** Program Coordinator Consent

An in-depth study of radiographic image quality and the factors that influence and assure the production of quality images. Included is a discussion of the principles of image development, beam limiting and beam absorbing devices, automatic exposure control and digital imaging. Focus of the course is on the influence of these factors on the formation of the radiographic image. Three hours lecture/discussion a week.

RA 112 — Radiographic Positions and Procedures II (5)**Prerequisite:** Program Coordinator Consent

A study of radiographic anatomy and positioning of the gastrointestinal, biliary and urinary systems, skull, sinuses, facial bones and vertebral column. The course includes a discussion of the influence of trauma on the production of radiographs of the vertebral column and skull. Emphasis is placed on practical positioning skills, anatomy, and image evaluation. This course is supplemented with practical application in the energized exposure lab and clinical facility. Four hours lecture/discussion a week and two hours lab a week.

RA 114 — Clinical Practicum II (3)**Prerequisite:** Program Coordinator Consent

A course in the practical application of radiographic principles and procedures. Students are assigned two days per week to a clinical education site to observe and perform radiographic procedures under the supervision of a clinical instructor and staff radiographers.

RA 122 — Radiographic Positions and Procedures III (1.5)**Prerequisite:** BIO 258, BIO 259

An 8-week course in advanced radiography of the skeletal system, skull and facial bones. The course also includes study of the technical principles of mammography, pediatric radiography, and portable, surgical and trauma. This course is supplemented with practical application in the energized exposure lab and clinical facility. One hour lecture and one hour lab a week.

RA 124 — Clinical Practicum III (2)**Prerequisite:** Program Coordinator Consent

A course in the practical application of radiographic principles and procedures. Students are assigned 24-32 hours per week to a clinical education site to observe and perform radiographic procedures under the supervision of a clinical instructor and staff radiographers.

RA 204 — Advanced Clinical Practicum I (5)**Prerequisite:** Program Coordinator Consent

A course in the practical application of radiographic principles and procedures. Students are assigned three days per week to a clinical education site to observe and perform radiographic procedures under the supervision of a clinical instructor and staff radiographers.

RA 205 — Radiographic Image Evaluation (2)**Prerequisite:** RA 111 with a grade of "C" or higher.

The evaluation of all aspects of the radiographic image to include the assessment of radiographic contrast and density, recorded detail and anatomical positioning. Image assessment criteria for determining the diagnostic acceptability of routine diagnostic examinations will be discussed. Activities will focus on student presentations of the analysis of selected cases. Will also address improvement alternatives focused on positioning and technique selections. Two hours lecture/discussion a week.

RA 220 — Radiation Physics (3)**Prerequisite:** Program Coordinator Consent

Designed to give the student radiographer basic knowledge of the principles of physics necessary for understanding X-ray production, equipment, and auxiliary devices. Special emphasis is given to the X-ray circuit and tube, generation of X-ray photons, and the characteristics of the X-ray beam. Three hours lecture/discussion a week.

RA 221 — Radiation Biology (2)**Prerequisite:** Program Coordinator Consent

A study of the biologic effects of radiation on the human body. Topics include interaction of radiation and matter, radiosensitivity, cellular and systemic response to radiation, early and late effects of radiation, radiation protection regulations, and protection practices for radiation workers. Two hours lecture/discussion a week.

RA 222 — Advanced Radiology Procedures (3)**Prerequisite:** Program Coordinator Consent

An introduction to advanced radiographic procedures using contrast media, sectional imaging, and quality assurance procedures. Includes a comparison of the principles of special imaging to routine diagnostic procedures and an analysis of the anatomy of the areas being studied. Three hours lecture/discussion a week.

RA 224 — Advanced Clinical Practicum II (5)**Prerequisite:** Program Coordinator Consent

A course in the practical application of radiographic principles and procedures. Students assigned three days per week to a clinical education site to observe and perform radiographic procedures under the supervision of a clinical instructor and staff radiographers. Students expected to become experienced in surgical, trauma, and other specialized examinations.

RA 225 — Radiographic Pathology (2)**Prerequisite:** Program Coordinator Consent

Introduces theories of disease causation and the pathologic disorders that compromise healthy systems. Etiology, pathophysiologic responses, clinical manifestations, radiographic appearance and treatment of diseases will be presented. Will focus on the relationships between pathology and the production of the radiographic image; will include specialized imaging modalities in the detection of disease. Two hours lecture/discussion a week.

RA 234 — Advanced Clinical Practicum III (2.5)**Prerequisite:** Program Coordinator Consent

A 5-week course in the practical application of radiographic principles and procedures. Students are assigned five days per week to a clinical education site to observe and perform radiographic procedures under the supervision of a clinical instructor and staff radiographers. Students are expected to polish skills to the level required for entry into the profession of radiologic technology. Final competency testing on all radiographic procedures.

SOCIOLOGY (SOC)

SOC 170 — Introduction to Sociology (3)**Prerequisite:** None

A survey of the basic concepts relevant to the study of human social behavior. Topics covered include sociological perspective, group behavior, research methods, culture, socialization, social organization, deviance and social control, social inequality, institutions, race and ethnicity, gender, age, and population dynamics. Three hours lecture/discussion a week. **IAI: S7 900**

SOC 180 — Leadership & Civic Engagement (3)**Prerequisite:** None

Introduction to the meaning of public service and avenues for community engagement. Exposure to the role of volunteerism and philanthropy in public service. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

SOC 200 — Race and Ethnic Relations (3)**Prerequisite:** None

An analysis of racial, religious, ethnic, and other groups. This course examines the persistence of group identity, inter-group relations, social movements, government policy, and related social problems which will assist the student in gaining a better understanding of the differences within a pluralistic society. Three hours lecture/discussion a week.

IAI: S7 903D**SOC 219 — Marriage and Family (3)****Prerequisite:** None

An exploration into the concept of family and its relationships. Intimate relationship formation, maintenance, and demise will be addressed. Focus is directed to motivation, commitment, diversity, and individual choice within relationships. The personal capacity to understand, to grow, and to change will unfold throughout the course. Three hours lecture/discussion a week. **IAI: S7 902**

SOC 283 — Social Problems (3)**Prerequisite:** None

A study of the major social problems facing the nation and world today. This course examines problems related to substance abuse, sexual behavior, crime, violence, aging, racism, poverty, sexism, the family, health care, population growth, and the environment. Three hours lecture/discussion a week. **IAI: S7 901**

SOC 288 — Criminology (3)**Prerequisite:** None

A study of theories of criminology. This course analyzes crime in relation to cultural environment and social institutions. The nature of crime, causes of criminal behavior, social control, and the Criminal Justice System are some of the topics covered. Three hours lecture/discussion a week.

IAI: CRJ 912

SOC 299 — Topics of Sociology (3)

Prerequisite: None

A study of special topics in sociology. Topics may include violence, health and illness, aging, death and dying, media, sexuality, gender roles, or other topics of particular interest. No topics will be offered more than twice in three years. Repeatable three times for different special topics. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

SPANISH (SPA)

SPA 101 — Elementary Spanish I (3)

Prerequisite: Appropriate placement test score, or ENG 089 or ENG 109 with a grade of "C" or higher or ENG 099 or ENG 103 with a grade of "C" or higher

An introduction to the fundamentals of Spanish. This course helps students develop the four basic skills: listening, speaking, reading, and writing. Students learn to use high frequency vocabulary and the present indicative tense. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

SPA 102 — Elementary Spanish II (3)

Prerequisite: SPA 101 or proficiency exam

A continuation of SPA 101. This course further develops the basic skills: listening, speaking, reading, and writing. Students enlarge their vocabulary and expand their knowledge of Hispanic culture while becoming able to communicate in a variety of tenses. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

SPA 130 — Spanish for Medical Personnel (3)

Prerequisite: SPA 101 or proficiency exam

A course designed to develop communication skills for those in health-related fields. Students develop their speaking and writing ability as well as their auditory comprehension of Spanish medical terms needed to communicate with Spanish-speaking clients. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

SPA 201 — Intermediate Spanish I (3)

Prerequisite: SPA 102 or proficiency exam

A continuation of SPA 102. Students further develop their listening, speaking, reading, and writing skills through the study of advanced topics in grammar in conjunction with composition and reading activities. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

SPA 202 — Intermediate Spanish II (3)

Prerequisite: SPA 201 or proficiency exam

A continuation of SPA 201. Students further develop reading, writing, listening, and conversational skills through reading and discussion in Spanish of short works by a variety of authors from Spain and Latin America supplemented with grammar review. Three hours lecture/discussion a week.

IAI: H1 900

SPA 298 — Latin American Culture (3)

Prerequisite: None

A survey of the history and cultures of Latin America with an emphasis on Costa Rica. Topics covered will include the geography and environment, history, economy, literature, and culture. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information. **Note: This course is typically offered as a Study Abroad course.**

SPEECH (SPE)

See **COMMUNICATION**

TECHNICAL MATHEMATICS (TMAT)

TMAT 100 — Technical Mathematics (3)

Prerequisite: None

This course is designed to review arithmetic through the use of a calculator and to introduce the students to topics of algebra and geometry that are relevant to disciplines in the Career Technologies Division. Among the topics covered will be calculators, arithmetic, variables, equations, geometry, charts and graphs, interpretation of data, and application problems. Three hours lecture/discussion a week.

Note: Designed specifically for CRT, DPT, or HOR degree students who place into MAT 055 or MAT 068. Students in these curricula who place into MAT 098 or higher should substitute any other 100-level course as indicated in their academic program planner. Any student who wishes to transfer to a university at a later time should consult a catalog from the university of choice to determine the specific math requirement.

THEATRE (THE)

THE 111 — Theatre Practicum I (1)

Prerequisite: None

Work on college semester production in various capacities: lighting, scene construction, properties, costume and makeup, stage management, etc. Acting positions are filled through the audition process. Hours to be arranged. Must contact instructor during the first week of classes for assignment. Three hours lab a week. Limited Transfer – See advisor for more information.

THE 130 — Introduction to Acting (3)

Prerequisite: None

Performance-oriented class introducing theories and techniques of acting. Emphasis is on the actor's resources for character development along with fundamental principles of voice and body techniques. Student experiences include the preparation and performance of monologues and scenes. Performances in class include solo, duet, and ensemble work. Students will be expected to attend assigned outside-of-class plays. Three hours lecture/discussion a week. **IAI: TA 914**

THE 131 — Intermediate Acting (3)

Prerequisite: THE 130

Development of fundamentals introduced in Introduction to Acting, emphasizing an intensive approach to acting exercises, improvisations, monologue, and scene study. Students will be expected to attend assigned plays outside of class. Three hours lecture/discussion a week. Limited Transfer – See advisor for more information.

THE 203 — Introduction to the Theatre (3)

Prerequisite: None

A survey of all theatrical forms such as comedy and tragedy, and dramatic styles such as realism and naturalism. Students will learn how to analyze a play and how to identify the respective contributions of the playwright, director, designers, and actors. Students will be asked to apply the knowledge gained in the course to plays which will be assigned and attended outside of class during the semester. Three hours lecture/discussion a week. **IAI: F1 907**

THE 215 — Diversity in American Drama (3)

Prerequisite: Appropriate placement test score or ENG 089 with a grade of “C” or higher

This course examines the history and diversity of theatre in the United States. Contemporary American theatre classics as well as plays that are written by divergent, diverse voices that include African, Asian, and Hispanic Americans as well as feminist and gay theatre. Students will examine how categories such as gender, class, sexual orientation, age, and race impact individual and collective identity formation. Students will not only learn through reading of published plays, but also through recorded theatre. Three hours lecture/discussion per week. Limited Transfer – See advisor for more information.

THERAPEUTIC MASSAGE (TPM)

Students must complete TPM 100 prior to application for admission to the Therapeutic Massage program.

TPM 100 — Introduction to Massage (1)

Prerequisite: None

This course will serve as an introduction to the basic principles and techniques of massage therapy. Students will learn the basic Swedish massage techniques and how to apply them to the back, arms, and legs. Basic anatomy and physiology of the major muscle groups, bony landmarks, contraindications will also be addressed. One-half hour lecture/discussion and one hour lab a week.

TPM 106 — Therapeutic Massage Seminar (.5-3)

Prerequisite: Program Coordinator Consent

A special studies course designed to meet student and community needs. Available upon request in specific situations not included in the regular course offerings but do merit college credit and provide for occupational needs. Credit is determined on a contact hour basis. Repeatable three times as topics change.

TPM 109 — Pathology (2)

Prerequisite: EST 100 or TPM 100, TPM 112 or BIO 112 with grades of “C” or higher or concurrent enrollment in TPM 112 or BIO 112

This course presents information on individual pathologies which massage therapists and estheticians may encounter in clinical practice. Students will identify implications for these conditions as related to massage therapy and esthetics with the goal of being able to make informed decisions about safety and applicability of massage and esthetics modalities. Body systems will include: cardiovascular, lymphatic, circulatory, immune, urinary, respiratory, digestive, integumentary, endocrine, reproductive, musculoskeletal and nervous systems. Two hours lecture/discussion a week.

TPM 110 — Massage Techniques I (4)

Prerequisite: TPM 100 with a grade of “C” or higher

This course serves as the initial training in massage therapy. Students will learn about self-care techniques, the history of massage as well as the benefits of massage. Swedish massage techniques and variations will be taught and developed into a sequence for a full body massage. Also, pathologies, pressure sensitivity, prenatal massage, and draping techniques will be covered. Three hours lecture/discussion and two hours lab a week.

TPM 112 — Anatomy/Physiology Comp Health (5)

Prerequisite: None

This course is a study of the structure and function of the human body for complementary health practitioners. The study begins with anatomical and physiological principals and progresses with the basic structure and function of the major systems of the human body including the integumentary, skeletal, muscular, circulatory, blood, lymphatic, immune, nervous, endocrine, respiratory, digestive, urinary and reproductive systems. Five hours lecture/discussion per week. **Note: Does not fulfill the anatomy and physiology requirement for nursing and radiology.**

TPM 114 — Musculoskeletal System (3)

Prerequisite: TPM 110 and (TPM 112 or BIO 112) with grades of “C” or higher

The musculoskeletal system is an expansion of the bone and muscle studies covered in BIO 112, The Human Body. The emphasis will be on bone features, origins, insertions, nerve innervations, and actions of muscles most relevant to massage therapy. Identification of prominent surface landmarks and superficial muscles by palpation will be practiced using a regional approach. Two hours lecture/discussion and two hours lab a week.

TPM 120 — Massage Techniques II (4)

Prerequisite: TPM 110 and (TPM 112 or BIO 112) with grades of "C" or higher

In this course, students will learn assessment skills to treat specific orthopedic pathological conditions. Palpation of muscles, stretching techniques, joint mobilization, trigger point therapy and seated chair massage will be included. Students will also address ethical concerns as they pertain to the therapeutic massage profession. Three hours lecture/discussion and two hours lab a week.

TPM 124 — Business Practices and Ethics (3)

Prerequisite: TPM 112 or BIO 112 and EST 100 or TPM 110 with grades of "C" or higher

In this course, the student will explore various aspects of developing and maintaining a successful therapeutic massage and/or esthetics practice. Topics which will be covered include how to establish a bookkeeping system and maintain client records, marketing, developing a business plan, the client/therapist relationship, and ethical issues. Three hours lecture/discussion a week.

TPM 130 — Massage Techniques III (4)

Prerequisite: TPM 114 and TPM 120 with grades of "C" or higher

In this course, therapeutic massage professionals will discuss and demonstrate various bodywork specialties. Students will be given the opportunity to practice the techniques in class. Modalities may include: craniosacral therapy, myofascial release, kinesiology, deep tissue, sports, lymphatic, and other topics. Three hours lecture/discussion and two hours lab a week.

TPM 140 — Massage Clinical (.5)

Prerequisite: TPM 110 and (TPM 112 or BIO 112) with grades of "C" or higher

In this student clinic individuals will have the opportunity to apply the principles, techniques, and procedures practiced in professional massage therapy. Under the supervision of the clinic supervisor, students will be expected to demonstrate proper client/therapist communication skills, proper draping techniques, adequate sanitary precautions, perform a full body massage based on client needs and properly document the session for the client's record. Students will be expected to massage two or more clients consecutively. Repeatable one time.

TPM 145 — Ther Massage Licensure Seminar (1)

Prerequisite: TPM 130 or concurrent enrollment

In this course, students will discuss the Illinois Massage Licensing Act and the Massage & Bodywork Licensing Examination (MBLEx). Students will review the MBLEx content outline to prepare for licensure and will complete and submit the application for the Massage & Bodywork Licensing Examination (MBLEx) One hour lecture/discussion.

WELDING TECHNOLOGY (WT)

WT 106 — Welding Seminar (.5-3)

Prerequisite: None

Special course to meet specific needs of industry, groups or individuals. Credit determined on a contact hour basis. Repeatable three times as topics change.

WT 116 — Fundamental Welding Processes (2)

Prerequisite: None

This course provides an introduction to safety, welding joint configurations, machine setup and welding theory. Multi-pass surfacing and fillet welds will be welded on 1/4" mild steel with the SMAW process using E6013 and E7014 electrodes in the flat and horizontal positions. Multi-pass surfacing and fillet welds will be welded on 1/8" mild steel with the GMAW process in the flat and horizontal positions. Butt joints will be both brazed as well as Oxy-fuel welded both autogenously and with filler in the flat position on 1/8" mild steel. Oxy-fuel cutting will be performed on 3/8" mild steel plate. GMAW welding of aluminum and carbon arc gouging will also be discussed. One hour lecture/discussion and two hours lab a week.

WT 122 — Shielded Metal Arc Welding I (2)

Prerequisite: None

This course will emphasize the theory and practice of Shielded Metal Arc Welding (SMAW). Safe handling and correct set up of equipment will be covered. Fillet Welds with a E6010 root pass and E7018 multi-pass fill and cover will be welded on 1/4" mild steel in the flat, horizontal, vertical, and overhead positions. One hour lecture/discussion and two hours lab a week.

WT 124 — Shielded Metal Arc Welding II (2)

Prerequisite: WT 122

A continuation of theory and practice in Shielded Metal Arc Welding (SMAW). Multi-pass single V-groove welds with backing will be welded with E7018 on 3/8" mild steel in the flat, horizontal, vertical, and overhead positions. Multi-pass single V-groove open root welds will be welded with a E6010 root pass and E7018 fill and cover on 3/8" mild steel in the flat, horizontal, vertical, and overhead positions. Introduction of non-destructive inspection as well as application of destructive testing through guided bend tests is included. One hour lecture/discussion and two hours lab a week.

WT 126 — Gas Metal/Flux Core Arc Weld I (2)

Prerequisite: None

The theory and practice of Gas Metal Arc Welding – short circuit transfer (GMAW-S) on 1/8" and lighter mild steel will be welded in the flat, horizontal, vertical, and overhead positions. Vertical up, vertical down and open root welds will be welded. Flux Cored Arc Welding – Self Shielded (FCAW-S) on 1/8" to 1/4" and heavier mild steel material will be welded in the flat, horizontal, vertical, and overhead positions. Aluminum GMAW welding will be discussed. One hour lecture/discussion and two hours lab a week.

WT 128 — Oxyfuel Welding/Cutting (2)**Prerequisite:** None

The theory and practice of oxy-acetylene welding, braze welding and cutting. Safe and correct set up and handling of oxy-acetylene equipment will be covered. Butt Joints and Fillets will be brazed in the flat, horizontal, vertical and overhead positions on 1/16" and 1/8" mild steel material. Butt Joints and Fillets will be welded autogenously in the flat, horizontal, vertical and overhead positions on 1/16" and 1/8" mild steel material. Butt Joints and Fillets will be welded with filler rod in the flat, horizontal, vertical and overhead positions on 1/16" and 1/8" mild steel material. 3/8" and 1/4" mild steel will be oxygen cut. One hour lecture/discussion and two hours lab a week.

WT 133 — Introduction to Fabrication (2)**Prerequisite:** WT 116

Fundamentals of working in a metal fabrication shop. Introduction to shop and equipment safety. Practice in measuring, problem solving, cutting, metal bending, and simple fabrication. Exercises in layout, fit up, welding and finishing while working off of simple drawings. Prepares students with entry-level metal fabrication knowledge. One hour lecture and two hour lab each week.

WT 152 — Math For Welding (3)**Prerequisite:** None

This course teaches mathematic skills needed in the welding field. The topics are presented in a step-by-step approach with examples that broaden understanding of whole numbers, common fractions, decimal fractions, geometry formulas used in welding, linear and angular measurement, formulas for bending metal, structural steel sections, and the metric system. Three hours lecture/discussion a week.

WT 226 — GMAW/FCAW II (2)**Prerequisite:** WT 126

The theory and practice of Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW) GMAW-Pulse transfer, GMAW-spray transfer, and FCAW-gas shielded process will be covered in this course. One hour lecture/discussion and two hours lab a week.

WT 233 — Fabrication II (2)**Prerequisite:** WT 133

This class will cover advance topics of working in a metal fabrication shop. Students will gain real world practical experience in a metal fabrication environment through various complex projects using skills and concepts learned in Fabrication I. This class will help prepare the student to enter the workforce with advanced knowledge and experience in metal fabrication. One hour lecture/discussion and two hours lab a week.

WT 244 — Welding Layout (2)**Prerequisite:** WT 116

This class covers the fundamentals of flat pattern development for sheet metal and plate fabrication. Basic geometric construction, triangulation, radial line development, and parallel line projection layout techniques will be covered. This class will help prepare the student to enter the workforce with the basic layout knowledge. One hour lecture/discussion and two hours lab a week.

WT 246 — Layout II (2)**Prerequisite:** WT 244

This course covers flat pattern layout as it applies to offsetting and transitioning rectangular chutes and hoppers, offsetting and transitioning round chutes, intersecting pipes, straight and offsetting tapers, mitering pipe and gore elbows. This class will help prepare the student to enter the workforce with advanced knowledge of flat pattern development for sheet and plate fabrication. One hour lecture/discussion, two hours lab a week.

WT 257 — Certification Welding (4)**Prerequisite:** WT 124

This course is designed to prepare the student to pass an AWS D1.1 Structural Steel welding certification plate test, which involves joint preparation and welding both open root and backing groove joints in four positions and guided bend tests. Two hours lecture/discussion and four hours lab a week.

WT 258 — GTAW (2)**Prerequisite:** WT 116 or WT 128

This course is designed to offer training in Gas Tungsten Arc Welding (GTAW). Discussion will include welding mild steel, stainless steel, aluminum, magnesium, copper, titanium and tool steel. Multi pass welds on mild steel will be welded in the flat, horizontal, vertical, and overhead positions. Multi pass welds on stainless steel will be welded both autogenously and with filler rod in the flat, horizontal, vertical, and overhead positions. Multi pass welds on aluminum will be welded in the flat, horizontal, vertical, and overhead positions. Emphasis will be placed on safety, weld joint preparation, machine settings, torch set up and welding technique. One hour lecture/discussion and two hours lab a week.

WT 268 — ASME Pipe Welding I 5G (4)**Prerequisite:** WT 257

Shop and equipment safety. This course covers ASME open root pipe welding in the 5G position using the SMAW process. The welding covered will be done with cellulose based electrodes and low hydrogen electrodes in the uphill progression. ASME Boiler and Pressure Vessel Code Section IX rules and acceptance criteria will be used in this course. Two hours lecture/discussion and four hours lab a week.

WT 269 — ASME Pipe Welding II 6G (4)**Prerequisite:** WT 268

Shop and equipment safety. This course covers ASME open root pipe welding in the 6G position using the SMAW process. The welding covered will be done with the cellulose based electrodes and low hydrogen electrodes in the uphill progression. ASME Boiler and Pressure Vessel Code Section IX rules and acceptance criteria will be used in this course. Two hours lecture/discussion and four hours lab a week

WT 280 — Specialized Welding (2-4)**Prerequisite:** Instructor Consent

This course is designed to allow students to choose one specific area of welding and fabrication to focus on and receive intensive training. The student will apply skills acquired in prior courses to complete. Credit hour determined on a contact hour basis. Repeatable three times as topics change up to a maximum of twelve credit hours.