

SECTION VIII

Course Descriptions

The following pages contain brief descriptions of all courses currently offered by West Virginia University at Parkersburg. Course numbering helps to identify courses into one of the following categories:

- Numbers 001-099** **Developmental Courses** - Remedial or Developmental courses designed to provide skills needed to pursue college-level work. Credit earned in such courses does not apply to graduation, to fulfilling program requirements, or to the student's cumulative grade-point average.
- Numbers 100-199** **Freshman-level courses.**
- Numbers 200-299** **Sophomore-level courses.** Most courses in this group have prerequisites and should normally not be taken by entering students.
- Numbers 300-499** **Junior and Senior-level courses.** Applicable to baccalaureate degrees.

In addition to the listed offering of courses by subject matter areas, each Department or Division is authorized to offer the following courses:

293*	Cooperative Work Experience	1-8 hours
393*	Cooperative Work Experience	1-12 hours
097	Special Topics	1-6 hours
197	Special Topics	1-6 hours
297	Special Topics	1-6 hours
397	Special Topics	1-6 hours
497	Special Topics	1-6 hours
299	Independent Study	1-6 hours
399	Independent Study	1-6 hours
499	Independent Study	1-6 hours

*The division chairperson must approve all cooperative work experience placements.

TRANSFER OF COURSES

Many of the courses described are designed for transfer to other colleges and universities to meet specific requirements for a bachelor's degree. Other courses, however, are not so designed.

Students who seek to transfer credit to another institution are cautioned to work closely with their academic advisers or to follow carefully the catalog requirements set forth by the institution to which they plan to transfer. **Caution:** In all matters relating to transfer of credit, students must recognize two levels of transfer:

First, general transfer. This means simply that the receiving college will note on the student's transcript that a course was taken at WVU Parkersburg and yielded a given amount of credit. The credit may or may not apply to a degree at the receiving institution.

Second, transfer and apply to degree. This means that the course taken at WVU Parkersburg will appear on the student's transcript at the receiving institution and that the credit earned will apply toward the degree that the student seeks at the receiving institution.

In case of any questions regarding transfer of credit, students should consult with an Academic Adviser, a Counselor, the Registrar, or the Dean of Academic Affairs.

All courses are, regardless of prerequisites, subject to instructor's consent.

ACCOUNTING (ACCT)**123. OFFICE ACCOUNTING. 3 HRS.**

Fundamentals of accounting and the accounting cycle for both service and merchandise businesses. Special emphasis is put on payroll procedures, cash accounting, and accounts payable and accounts receivable record keeping. This course is not available for students working toward the BSBA degree. It is particularly suited for students in the two-year AAS in Business Technology. Offered on demand.

201. PRINCIPLES OF ACCOUNTING 1. 3 HRS.

Covers the fundamentals of accounting; the accounting cycle; journals and ledgers; working papers; financial statements; types of accounts; and, an introduction to internal controls. [Business Core Course]

202. PRINCIPLES OF ACCOUNTING 2. 3 HRS.

Continuation of ACCT 201. Introduction to Partnership accounting procedures; Corporation accounting procedures; bond accounting; capital stock accounts; consolidations; manufacturing accounting; analysis of financial statements. (Prerequisite: ACCT 201) [Business Core Course]

310. ACCOUNTING INFORMATION SYSTEMS. 3 HRS.

This course is an overview of a computerized accounting software package that is used in the business world. Students gain hands-on experience conducting all major components of state-

ment preparation including balance sheets and statements of profit and loss reports in a computerized format. (Prerequisite: ACCT 201)

311. INTERMEDIATE ACCOUNTING 1. 4 HRS.

Analysis of accounting principles and procedures at the intermediate level. Addresses the theory and practices of accounting that are tested at the CPA level. Asset valuation, continued study of liabilities, and income determination are several topics covered. (Prerequisites: ACCT 202 and MATH 126.)

312. INTERMEDIATE ACCOUNTING 2. 4 HRS.

Continuation of ACCT 311. Topics covered include non-current assets, equity, flow of funds and ratio analysis. (Prerequisite: ACCT 311.)

331. MANAGERIAL ACCOUNTING. 3 HRS.

Accounting and budgeting techniques for management planning and control. The use of accounting data in management decision making. (Prerequisites: ACCT 202 and MATH 126.)

353. FEDERAL INCOME TAX ACCOUNTING 1. 3 HRS.

Tax theory and practice with special emphasis on individual income taxation; the federal tax code and regulations; and, federal tax forms.

354. FEDERAL INCOME TAX ACCOUNTING 2. 3 HRS.

Continuation of ACCT 353. This course focuses on income taxation of corporations, estates, trusts, and partnerships. Tax considerations in establishing business organizations, reorganizations, and liquidations. (Prerequisite: ACCT 202)

360. FRAUD EXAMINATION 3 HRS.

Delve into the world of white-collar crime and forensic accounting. Study methods of detection prevention and investigation.

401. ADVANCED ACCOUNTING. 3 HRS.

Accounting practices and procedures for business combinations and consolidations, and introduction to not-for-profit accounting theories, and advanced partnership accounting theories. (Prerequisites: ACCT 312)

405. AUDITING. 4 HRS.

Study of auditing theory and practice, the generally accepted auditing standards, the audit plan, internal control evaluation, statistical sampling and testing procedures; and, auditor's reports. (Prerequisites: ACCT 312.)

410. GOVERNMENT/NOT-FOR-PROFIT ACCOUNTING. 3 HRS.

Covers the techniques and principles of fund accounting as generally encountered in government agencies, charities, and other not-for-profit organizations. (Prerequisite: ACCT 312)

432. COST ACCOUNTING. 3 HRS.

Determination of costs in manufacturing entities; interpretation of cost data; study of job order costs, process costs, and standard costs. (Prerequisites: ACCT 202 and MATH 126.)

ART (ART)**101. ART APPRECIATION. 3 HRS.**

Visual arts and artists, periods, societies, cultures; design and composition; media, materials, and techniques. F-S

- 105. SURVEY OF ART HISTORY 1. 3 HRS.**
History of painting, sculpture, architecture, and minor arts of the Western world from prehistory to Renaissance; the relationship between art, artists (artisans, craftsmen) and developing society in Western civilization.
- 106. SURVEY OF ART HISTORY 2. 3 HRS.**
Continuation of ART 105. History of painting, sculpture, architecture, and minor arts of Western civilization from Renaissance to Twentieth Century. (Prerequisite: ART 105)
- 111. DRAWING 1. 3 HRS**
Fundamentals of observational drawing. Includes perspective, composition line and form used or representational studies from nature and still life. Various black and white media and methods introduced. (6 studio hours per week.) F-S
- 112. DRAWING 2. 3 HRS.**
Continuation of ART 111 stressing expressive drawing in both color and black and white media. (6 studio hours per week.) (Prerequisite: ART 111) S
- 121. FUNDAMENTALS OF TWO-DIMENSIONAL DESIGN. 3 HRS.**
Manipulation of picture plane; abstract elements of line, shape, form, texture, value, space, and color. (6 studio hours per week.) (on demand.)
- 122. FUNDAMENTALS OF THREE-DIMENSIONAL DESIGN. 3 HRS**
Continuation of ART 121, introducing three-dimensional arts concerns using wire, plaster, wood, clay, cardboard and metals to investigate functional and sculptural problems. (Prerequisite: ART 121) F
- 162. WATERCOLOR. 3 HRS.**
Introduction to materials and techniques used in water-color; composition, color theory, and personal expression. (6 studio hours per week.) (Prerequisite: ART 111 or ART 121)
- 213. PAINTING 1. 3 HRS**
Procedures, techniques, and concepts of painting and color theory; use of oils or acrylics. (6 studio hours per week.) (Prerequisite: ART 111 or ART 121) F-S
- 214. PAINTING 2. 3 HRS**
Continuation of major painting. Ideas, craftsmanship, and personal expression using either oils or acrylics. (6 studio hours per week.) (Prerequisite: ART 213) F-S
- 221. ADVANCED DRAWING. 3 HRS.**
Continuation of ART 112; emphasis on in depth exploration of media, and personal expression. (6 studio hours per week.) (Prerequisite: ART 112, ART 121)
- 225. LIFE DRAWING. 3 HRS.**
Human anatomy, foreshortening, light and shading, form and expression. (6 studio hours per week.) (Prerequisite: ART 111, ART 121) On demand.
- 230. PRINTMAKING 1. 3 HRS.**
Introductory printmaking using planographic, relief, stencil, and intaglio to execute original prints; print and paper aesthetics; printmaking ethics. (6 studio hours per week.) (Prerequisite: ART 111, ART 121) On demand.
- 231. PRINTMAKING 2. 3 HRS.**
Continuation of ART 230. Exploration, craftsmanship and personal expression in one of four print media. (6 studio hours per week.) (Prerequisite: ART 230) On demand.

- 240. CERAMICS 1. 3 HRS**
Techniques of hand building, clay and glaze formulation, and electric kiln use; introduction to throwing on potter's wheel. (6 studio hours per week.) F-S
- 241. CERAMICS 2. 3 HRS**
Continuation of ART 240. Development of personal aesthetics; acquisition of throwing skills for functional and sculptural purposes. Gas and electric kiln use, glaze chemistry. (6 studio hours per week.) (Prerequisite: ART 240) F-S On Demand.
- 242. WOOD CARVING. 3 HRS.**
Sculpturing in wood; direct carving, assemblage, lamination, wood bending, joints, and finishes. (6 studio hours per week.) (Prerequisite: ART 240)
- 243. BRONZE CASTING. 3 HRS.**
Casting bronze statuary using lost-wax process. Introduction to sand molding techniques. (6 studio hours per week.) (Prerequisite: ART 240) F-S
- 244. MODELING AND CASTING. 3 HRS.**
Modeling and casting the human form in clay, plaster, wax, and metals. (6 studio hours per week.) (Prerequisite: ART 240, ART 121) S
- 315. ART SKILLS AND INSTRUCTIONAL STRATEGIES K-6. 3 HRS.**
Provides experience in two- and three-dimensional media employed in public school (K-6), and background in Discipline-Based Art Education (curriculum content, visual learning development, art classroom management, evaluation procedures, and art education philosophy). (Prerequisites: Admission to Teacher Education and ART 101.) F-S

ASTRONOMY (ASTR)

- 106. INTRODUCTION TO ASTRONOMY. 4 HRS.**
Introduction to the study of the Universe, including the latest theories on the origin of the Universe, the solar system and the Earth. Covered will be the origin of galaxies, stars, planets, asteroids, meteoroids, comets, etc., stressing modern techniques of gathering information about the Universe. The lab portion of the course will include observations of the sky, use of telescopes, and use of the celestial sphere and star charts. May also include planetarium visits and other astronomy-related field trips. (3 lecture hours and 2 lab hours per week.) F

AUTOMOTIVE TECHNOLOGY (ATEC)

- 110. SERVICE FUNDAMENTALS. 2 HRS.**
Students will acquire knowledge on pre-delivery inspection and service, headlight aiming, wind noise and water leaks, cosmetic paint and surface repairs, recommended maintenance schedules, oil, filters, cooling systems, belts, hoses, spark plugs, batteries, wipers, lamps and bulbs, fuses, tires and tubes, and other minor "quick service" items.
- 136. BASIC ELECTRICAL THEORY. 1 HRS.**
Students will study basic electrical theory, circuits, Ohms Law, electrical test equipment, circuit and component testing. (Co-requisite: ATEC 137)
- 137. ELECTRICAL SYSTEMS. 3 HRS.**
Electricity and electronic theory as applied to automotive systems. Study includes principles of operation, testing, and repairing all major system parts including lighting systems, gauges, warning devices, horns, wipers/washers, power seats, windows and doors, other electrical options and accessories, battery testing and service, starting systems, alternators, voltage regulators, diagnosis and repair and an intro to electronic engine controls. (Co-requisite: ATEC 136)

- 146. SUSPENSION/STEERING. 3 HRS.**
Steering alignment angles, suspension fundamentals, active suspension systems, and tire and wheel construction.
- 147. BRAKE SYSTEMS. 3 HRS.**
Hydraulic braking operations, anti-lock brake concepts, and chassis parts and functions.
- 148. CLIMATE CONTROL SYSTEMS. 3 HRS.**
Principles of air conditioning including purging, charging, leak and performance testing.
- 236. ENGINE COMPUTER CONTROLS. 4 HRS.**
Understanding the operation and control functions of the automotive computer, use of tools and procedures necessary in testing and repair of system components.
- 237. ADVANCED ELECTRONICS. 3 HRS.**
Understanding of electronic engine controls strategies, automotive microcomputer systems, speed control systems operation, diagnosis and repair, and servicing vehicle electronic instruments and options. (Prerequisite: ATEC 137)
- 238. ENGINE FUNDAMENTALS. 4 HRS.**
Understanding the principles of four-stroke engine operation, identification of engine systems and components, cylinder head and valve train diagnosis and service, engine noise diagnosis, turbocharger/supercharger principles, disassembly of complete gas engines, inspection, measurement and repair of all components, and engine repair and overhaul procedures.
- 246. MANUAL DRIVE TRAINS. 3 HRS.**
Design, construction, and operating principles of the major types of manual transmissions and drive trains used today.
- 247. AUTOMATIC DRIVE TRAINS. 6 HRS.**
Design, construction, and operating principles of the major types of automatic transmissions and drive trains used today.

BIOLOGY (BIOL)

- 101. GENERAL BIOLOGY 1. 3 HRS.**
An introduction to biological principles including the chemistry, structure, and energetics of the cell (photosynthesis and respiration); membrane transport; molecular biology (RNA and DNA), cell reproduction (mitosis and meiosis); molecular genetics to include Mendelian and human genetics; evolution (natural selection and population genetics); and ecology (biodiversity, communities, and populations of living organisms.) (3 lecture hours and 2 lab hours per week.) (Co-requisite: BIOL 103) F-S-Su
- 103. GENERAL BIOLOGY 1 LAB. 1 HR.**
Introductory exercises & experiments in general biology to include microscopy & cell structure, organic compounds, osmosis & diffusion, photosynthesis, cell respiration, hydrolysis of carbohydrates, cell reproduction & genetics. (2 hrs per week) (Co-requisite: BIOL 101) F-S-Su
- 102. GENERAL BIOLOGY 2. 3 HRS.**
An application of basic biological principles to plant and animal organisms. Plant evolution and taxonomy, structure, transport, reproduction, growth and development are included. Animal evolution and taxonomy, organ systems and homeostasis, and reproduction complete the course. (3 lecture hours and 2 lab hours per week.) (Co-requisite: BIOL 104) (Prerequisite: BIOL 101.) F-S-Su

- 104. GENERAL BIOLOGY 2 LAB. 1 HR.**
Laboratory studies in general biology that includes evolution & systematics, a survey of organism diversity, and basic plant & animal anatomy. (2 hrs per week) (Co-requisite: BIOL 102) F-S-Su
- 107. ANATOMY AND PHYSIOLOGY 1. 4 HRS.**
An introduction to normal structure and function of the human body. The course covers principles of the chemistry compounds (biochemistry), cellular, tissue and organs of the body. Four systems are studied for gross and microscopic anatomy and normal functioning; these are integumentary, skeletal, muscular, and nervous systems. The lab work emphasizes microscopic work on cells and tissues, study of bones and muscles, and dissections of brain and eyeball. (3 lecture hours, 2 lab hours per week) (Prerequisite CHEM 111) F-S
- 108. ANATOMY AND PHYSIOLOGY 2. 4 HRS.**
Continuation of Biology 107. This class includes study of the respiratory, circulatory (blood, heart, vessels) lymphatic, urinary, digestive, endocrine and reproductive systems. Normal anatomy and physiology is emphasized, but some pathology is included. Lab work includes dissection of the body systems, plus selected physiology experiments in respiratory volumes, blood and blood genetics, urinalysis, and digestion rates. Critical thinking is developed using clinical examples. The students do research as group projects, such as nutrition, development of science events for teens, or clinical interviews. (3 lecture hours, 2 lab hours per week) (Prerequisite: BIOL 107 or BIOL 101) F-S
- 109. ANATOMY AND PHYSIOLOGY FOR ALLIED HEALTH. 2 HRS.**
This class is a survey class in human anatomy and physiology for those students entering the Allied Health areas. The course is for students in Surgical Technology, Pharmacy Technology, and Paramedic Sciences. The course will have special emphasis on problems requiring surgery, emergency treatments, and drug interventions. Prevention of disease is discussed and the pathology associated with normal aging and common problems for each system. All systems of the body will be discussed. (2 lecture hours per week) F and selected Summers (for Paramedic classes)
- 110. INTRODUCTION TO MICROBIOLOGY FOR SURGICAL TECHNOLOGY. 3 HRS.**
Overview of the structure, physiology and human health implications of microorganisms in relation to human health and disease will be presented. Topics include the relationship between pathogens and the body's defense system, structure and function of cells, process of infection and the immunologic defense mechanisms, and principles of sanitation, sterilization and disinfection. Laboratory sessions will include growth and identification of various pathogens as well as methods to control their spread. (2 lecture hours; 2 laboratory hours per week.) (Prerequisite: BIOL 109, ST 101, ST 114.) Does **not** meet biology requirement for Nursing or Paramedic Programs. S
- 113. ANATOMY AND PHYSIOLOGY FOR ALLIED HEALTH LAB. 2 HRS.**
The lab portion of this course is required in the Surgical Technology and Paramedic Sciences areas. Labs include dissections of all systems, microscopic work on cells and tissues, and identification of muscles and bones with related connective tendons. Some physiology work in the respiratory volumes, blood typing, and urine analysis are also included. (2 lab hours per week) F and selected Summers (for Paramedic classes)
- 171. NUTRITION AND HEALTH. 3 HRS.**
This course will cover basic nutrients needed for human health; nutritional changes and adaptations during various stages of the life cycle will be discussed. Some consideration will be included regarding nutrition for common disorders such as excess weight, athletic training and diseases such as hypertension and diabetes. (3 lecture hours per week.) (Prerequisites: One semester science class.) F

200. MICROBIOLOGY. 4 HRS.
Designed for students requiring a basic medical microbiology course to meet program requirements or as a science elective. Topics include types of micro-organisms, microbial growth and metabolism, control of microbial populations, microbial resistance and principles of infection and immunity. (3 lecture hours and 2 lab hours per week.) (Prerequisites: BIOL 107 and 108; or BIOL 101/103 and 102/104) F-S

211. ZOOLOGY: ANIMALS AS ORGANISMS. 4 HRS.
Anatomical and physiological study of invertebrate and vertebrate body systems and processes including taxonomy and evolution. (3 lecture hours and 2 lab hours per week.) (Prerequisites: BIOL 101/103, 102/104.)

212. BOTANY: PLANTS AS ORGANISMS. 4 HRS.
Development, structure, function, and evolution of vascular and nonvascular plants; physiological and ecological relationships. (3 lecture hours and 2 lab hours per week.) (Prerequisites: BIOL 101/103, 102/104)

BUSINESS TECHNOLOGY (BTEC)

115. BEGINNING KEYBOARDING. 3 HRS.
Using Microsoft Word, students are taught basic keyboarding skills and techniques. Simple letters, memos, manuscripts and business forms are covered.

116. INTERMEDIATE KEYBOARDING. 3 HRS.
This is a sequel course to BTEC 115. This course focuses on the development of speed and accuracy in keyboarding. Students are exposed to more advanced business letters and documents. (Prerequisite: BTEC 115, keyboarding placement, articulation.)

204. ADVANCED EXCEL. 3 HRS.
This course is an intensive study of spreadsheet software that requires students create, edit, and manage various spreadsheet functions using Microsoft Excel software. Topics covered will include: multiple worksheets, importing and exporting worksheets among users on a network and on the Internet, strategies for merging and integrating data from other applications, and creating what-if scenarios for business analysis and decision making. (Prerequisites: CS 101).

206. ADVANCED ACCESS. 3 HRS.
This course is designed to provide the student with intermediate to advanced level knowledge and skills to develop, customize, and manage databases for company use. Upon completion of the course, the student will be able to use Microsoft Accessware to manage databases including using web-generated data, Visual Basic Editor, and other advanced functions of the software. (Prerequisite: CS 101)

210. COMPUTERIZED ACCOUNTING. 3 HRS.
This course is an overview of a computerized accounting software package that is used in the business world. Students gain hands-on experience conducting all major components of statement preparation including balance sheets and statements of profit and loss reports in a computerized format. (Prerequisites: ACCT 201)

235. MICROSOFT WORD/WINDOWS. 3 HRS.
This microcomputer software course provides students an opportunity to learn word processing for employment or personal use. Computer technology applications include creating, editing, manipulating printing necessary to produce business documents as well as integrated concepts such as sorting, and printing text to produce professional documents. Advanced applications include the integration of spreadsheets, graphs, charts, the Internet and other specialized functions. (Prerequisite: keyboarding skill)

253. MEDICAL TERMINOLOGY. 1-3 HRS.
This course provides an introduction to and working knowledge of the spelling, pronunciation, and meaning of terms commonly used in the medical field.

254. MEDICAL TRANSCRIPTION. 3 HRS.
This course is designed to prepare students in developing medical transcription skills through a building block format. Students will be exposed to medical reports that are fundamental to ambulatory care, related medical terminology, formatting styles, and specialized rules of grammar and punctuation characteristic to dictated medical reports. Students will apply these principles as they transcribe medical reports relating to outpatient health care. (Prerequisite: BTEC 253)

255. MEDICAL BILLING. 3 HRS.
This microcomputer software course provides an introduction and working knowledge of medical billing procedures used in the medical field and in medical insurance operations.

256. MEDICAL CODING. 3 HRS.
This course provides an introduction and working knowledge of medical coding procedures used in the medical field and in medical insurance operations. (Prerequisite: BTEC 253)

265. MULTIMEDIA PRESENTATIONS. 3 HRS.
This course is designed to provide the student with the use of multimedia in various presentation formats that include integrating text, graphics, animation, video and sound. (Prerequisite: CS 101)

270. INTRODUCTION TO WEB PAGE DESIGN. 3 HRS.
This course will be an introduction to designing and writing professional web design sites. The course is designed for the beginning web page designer and will introduce elements such as text, graphics, linking, tables, forms, and images. (Prerequisites: CS 101)

275. ADVANCED MICROCOMPUTER APPLICATIONS FOR BUSINESS. 3 HRS.
This course is a continuation of advanced microcomputer applications in spreadsheets, databases, and presentation software for decision making in business applications. (Prerequisite: CS 101)

280. TELECOMMUNICATIONS TECHNOLOGIES. 3 HRS.
This course provides students an opportunity to understand and use the latest telecommunication links to communicate by computer networks, video conferences, and other technology transmission delivery methods. Issues on the evolution of telecommunication use in business applications will also be discussed.

295. PROFESSIONAL DEVELOPMENT SEMINAR. 3 HRS.
An introduction to the development of professionalism and the interactions with management, associates, and subordinates at the workplace. (Prerequisite: Completion of Business Technology degree core courses)

CHEMICAL TECH (CTEC)

211. SPECIAL TOPICS IN ANALYTIC CHEMISTRY. 4 HRS.
Includes a study of the gravimetric and volumetric methods of analysis. Laboratory experiments are designed to illustrate and reinforce the concepts discussed in the lecture. (Prerequisite: CTEC104) (Co-requisite: CTEC 211L)

212. INSTRUMENTAL ANALYSIS LABORATORY. 3 HRS.
The study of the theory, design, and uses of modern electrochemical, spectrochemical, chromatographic and other instruments. The laboratory includes practice in the techniques of instrumental analysis. (Prerequisite: CTEC 211.)

CHEMISTRY (CHEM)

- 105. ANALYTICAL CHEMISTRY FOR TECHNICIANS. 4 HRS.**
Introduction to chemistry; metric system; atomic structure; chemical bonding; carbon and polymer compounds; basic analytical techniques; chemical instrumentation; extrusion and injection molding techniques. (3 lecture hours; 2 lab hours per week). On Demand
- 111. INTRODUCTION TO GENERAL CHEMISTRY. 4 HRS.**
Elementary introduction to concepts of chemistry including metric measurement, periodic properties, atomic and molecular structure, bonding, formulas and nomenclature, redox chemistry, stoichiometry, states of matter and gas laws, solutions, equilibria, and acid-base chemistry. Designed for students with no background in chemistry. Co-requisite laboratory coordinates exercises with lecture topics. (3 lecture hours and 2 lab hours per week.) F-S-Su
- 112. INTRODUCTION TO ORGANIC AND BIOLOGICAL CHEMISTRY. 4 HRS.**
Introductory survey of organic and biological chemistry for students in health sciences as well as those desiring a laboratory science elective to satisfy general education requirements or as a preparation for CHEM 223. Includes nomenclature and the basic physical and chemical properties of the major classes of aliphatic and aromatic organic compounds as well as the major classes of biomolecules. The major metabolic pathways of carbohydrate, lipid and protein metabolism of eucaryotes will also be discussed. (3 lecture hours per week and 2 lab hours per week.) (Prerequisites: CHEM 111 or CHEM 115) S
- 115. FUNDAMENTALS OF CHEMISTRY 1. 4 HRS.**
Terminology and quantitative relationships; atomic structure, periodic law, chemical bonding, states of matter, and solutions. (3 lecture hours; 2 lab hours per week.) F-S
- 116. FUNDAMENTALS OF CHEMISTRY 2. 4 HRS.**
Continuation of CHEM 115. Chemical equilibrium, ionic equilibrium, electrochemistry, and organic chemistry. (3 lecture hours; 2 lab hours per week.) (Prerequisite: CHEM 115) F-S
- 151. INDUSTRIAL CHEMISTRY SURVEY 1. 3 HRS.**
Introduction to chemistry; metric system; matter and energy relationships; atomic structure; chemical bonding; kinetic theory; reaction; chemical equilibrium; carbon and compounds. Designed for persons employed in business areas within chemical companies. (3 lecture hours per week; no labs.) On demand.
- 152. INDUSTRIAL CHEMISTRY SURVEY 2. 3 HRS.**
Continuation of CHEM 151; overview of organic chemistry. Designed for persons employed in business areas within chemical companies. (3 lecture hours per week; no labs.) On demand.
- 153. INDUSTRIAL CHEMISTRY SURVEY 3. 3 HRS.**
Continuation of CHEM 152; polymer chemistry; structure, nomenclature, molecular weights; step-growth and chain-growth polymerization; copolymers, tacticity, crystallinity, reaction kinetics, and viscosity. Designed for persons employed in business areas with chemical companies. (3 hours per week; no labs.) On demand.
- 231. ORGANIC CHEMISTRY. 4 HRS.**
An overview of organic chemistry with emphasis on biological applications for students in medical technology, agriculture & nutrition. Nomenclature, structure, reactivity and stereochemistry will be covered. (3 hr. lecture, 3 hr lab.) (Prerequisite: CHEM 115, CHEM 112 or CTEC 104.)
- 233. ORGANIC CHEMISTRY 1. 3 HRS.**
Study of characteristic reactions, synthesis, and stereochemistry of major classes of organic compounds using a mechanistic approach. Classes of compounds studied include alkanes, alkyl halides, alkenes, and alcohols. Mechanisms studied include: free radical halogenation, nucleo-

philic substitution, nucleophilic addition, and electrophilic addition. (Prerequisites: CHEM 115 and 116 or equivalent.) (Co-requisite: CHEM 235.) F

- 234. ORGANIC CHEMISTRY 2. 3 HRS.**
Continuation of CHEM 233 to include spectroscopic methods, theory and interpretation. Classes of compounds studied include alkynes, aromatics, carbonyls, amides, amines, and synthetic polymers. Mechanisms studied include electrophilic aromatic substitution, Aldol condensation, esterification, and polymerization. Lab work includes some computer simulation, unknown analysis & individual work. (3 lecture hours and 3 lab hours per week.) (Co-requisite: CHEM 236.) (Prerequisite: CHEM 233/235.) (Co-requisite: Chemc 236.) S

- 235. ORGANIC CHEMISTRY I LAB. 1 HR.**
An introduction to microscale techniques of organic chemistry preparation and purification, this lab is designed to be taken concurrently with CHEM 233. Techniques studied will be re-crystallization, distillation, extraction and preparation of simple aliphatic compounds. (3 lab hours per week) (Co-requisite: CHEM 233) F

- 236. ORGANIC CHEMISTRY II LAB. 1 HR.**
A continuation of CHEM 235, this lab is designed to be taken concurrently with CHEM 234. Techniques studied will include multi-step synthesis, qualitative analysis and instrumental analysis. Some computer simulation and individualized experiments will be involved. (3 lab hours per week) (Co-requisite: CHEM 234) S

CLASSICS (CLAS)

- 101. ELEMENTARY LATIN 1 3 HRS.**
Students will study elementary classical and Medieval Latin. Emphasis will be given to reading, writing, pronunciation, and grammar as well as the study of ancient Roman culture.
- 103. ELEMENTARY ANCIENT GREEK 1 3 HRS.**
An introduction to Ancient Greek with a focus on reading, writing, speaking, and grammar. Selections from Classical Attic, Sepuagint, and Koine Greek will be studied.

COMPUTER AND INFORMATION TECHNOLOGY (CIT)

- 101. PC MANAGEMENT AND MAINTENANCE. 4 HRS.**
This is an introductory course on PC management, maintenance and troubleshooting. Topics covered include operating systems and OS architecture, software/hardware relationships. (Co-requisite: CS 101.) F, S
- 102. NETWORK MANAGEMENT, MAINTENANCE & ADMINISTRATION. 4 HRS.**
This is an introductory course on networking technologies. Subjects covered are local area networks, the OSI Model, protocols, topologies, transmission media and security. Included in this course are all the elements required for Network+ certification (Prerequisites: CS 101, CIT 101)
- 105. NETWORK FUNDAMENTALS. (Cisco #1) 4 HRS.**
The first in the series of four courses required to prepare the student for the Cisco CCNA certification. Topics covered in this semester include the OSI Model, the TCP/IP Model, IP addressing, subnetting, data encapsulation, basic network design and troubleshooting. (Co-requisite: CS 101.) F
- 106. ROUTERS & ROUTING FUNDAMENTALS (Cisco #2). 4 HRS.**
The second in a series of four courses required to prepare the student for the Cisco CCNA certification. Topics covered in this semester include routing, routers, router components, router configuration, router protocols and router troubleshooting. (Prerequisite: Grade of "C" or better in CIT 105) S

- 111. WINDOWS OPERATING SYSTEMS (MCP #1). 3 HRS.**
The first in the series of courses required to prepare the student for Microsoft MCSE certification. Topics covered in this semester include all aspects of Windows OS including OS architecture, OS administration of resources, hardware devices/drivers and the OS, Optimizing OS performance and reliability, OS security and troubleshooting. (Co-requisite: CS 101.)
- 112. SERVER CONFIGURATION & ADMINISTRATION (MCP #2). 3 HRS.**
The second in the series of courses required to prepare the student for the Microsoft MCSE certification. Topics include all aspects of the Windows Server, Network access to servers resources, Network server hardware devices and drivers. Server performance, reliability, and availability. Windows network connections, security and server troubleshooting. (Prerequisite: Grade of C or better in CIT 111.)
- 114. WINDOWS OPERATING SYSTEMS. 3 HRS.**
The second in the series of three courses required to prepare the student for the Microsoft MCP certification. Topics covered in this semester include all aspects of a Windows workstation OS and a Windows Server OS. Network access to server resources. Network server hardware devices and driver. Server performance, reliability, and availability, network connections, security and server troubleshooting.
- 130. PRINCIPLES OF INFORMATION SYSTEMS. 3 HRS.**
An introduction to basic computer information systems principles and terminology, offering a broad survey of the discipline and illustration of the importance of determining information system requirements. It will examine the importance of information systems in networked and global business. Topics will include hardware and software selection criteria, scheduling, conversion planning, legal and ethical issues, and security.
- 140. ELECTRICITY & DIGITAL ELECTRONICS FUNDAMENTALS. 2 HRS.**
Study of theory and laboratory experiments in basic and advanced direct current circuits as well as networks. Concepts covered include voltage, current, resistance, conductance and power. Topics studied are: Ohms Law, Series Curcuits, Parallel Circuits, Complex Circuits and Network Theorems. (Reprequisites: MATH 111 or 126). (Co-requisite: CIT 140L.)
- 140L. ELECTRICITY & DIGITAL ELECTRONICS FUNDAMENTALS LAB 1 HRS**
Application of theory and laboratory experiments in basic and advanced direct circuits as well as networks. Applied concepts from CIT 140 include voltage, current, resistance, conductance and power. Topics studied are: Ohms Law, Series Circuits, Parallel Circuits, Complex Circuits and Network Theorems. (Co-requisites: CIT 140).
- 205. INTERMEDIATE ROUTING & SWITCHING (Cisco #3). 4 HRS.**
The third in a series of four courses required to prepare the student for the Cisco CCNA certification. Topics covered in this semester include LAN Technology, LAN Switching, VLAN, LAN Design, IGRP and LAN troubleshooting. (Prerequisite: Grade of "C" or better in CIT 106.) F
- 206. WAN THEORY & DESIGN (Cisco #4). 4 HRS.**
The last in the series of four courses required to prepare the student for the Cisco CCNA certification. Topics covered in this semester include WAN Technology & Architecture, WAN design, PPP, ISDN, Frame Relay and troubleshooting. (Prerequisite: Grade of "C" or better in CIT 205.) S
- 211. NETWORK INFRASTRUCTURE. (MCP #3) 3 HRS.**
The third in the series of courses required to prepare the student for the Microsoft MCSE certification. Topics covered include DNA, DHCO, Remote access, network protocols, WINS, IP routing, NAT and troubleshooting. (Prerequisite: Grade of "C" or better in CIT 112) S

- 240. INTRODUCTION TO LINUX. 3 HRS.**
Students learn the basics of how to install, configure, and use the Linux operating system; learn the commands and graphical interfaces; and configuration and troubleshooting techniques. (Prerequisites: Grade of C or better in CIT 106, CIT 112)

- 260. CAPSTONE PROJECT. 3 HRS.**
Students will conduct a semester long major networking project. The project will include proper network design, documentation and an oral presentation. (Prerequisite: Grade of "C" or better in CIT 205. Co-requisites: CIT 206 and CIT 211.) S

- 280. PRACTICUM IN COMPUTER/NETWORKING APPLICATIONS. 1 HR.**
This is a course designed to give the student experience in real world computer/networking applications. The student will work at the school a minimum of 5 hours per week. The student will work as requested in computer labs, faculty/staff offices as well as with the university network administrator in a variety of computer related responsibilities. (Co-requisite: CIT 101, CS 101) F, S

- 305. ADVANCED ROUTING (Cisco #5). 4 HRS.**
This course is the first in a series of four required to prepare the student for a career in networking and the Cisco CCNP certification. Topics covered include scalable networks, advanced IP addressing management, advanced routing, OSPF, multiarea OSPF, EIGRP, route optimization, BGP, scaling BGP, and security, (Prerequisite: Grade of "C" or better in CIT 206; Co-requisite: CS 118.) F

- 306. SECURE CONVERGED WAN's (Cisco #6). 4 HRS.**
This course is one of four required to prepare the student for a career in networking and the Cisco CCNP certification. Topics include remote network connectivity requirements, teleworker connectivity, IPSec VPN's, Frame Mode MPLS, Cisco device hardening, and Cisco IOS threat defense features. (Prerequisite: Grade of "C" or better in CIT 206.) S

- 310. FUNDAMENTALS OF VOICE AND DATA CABLING. 4 HRS.**
This course is a hands-on lab oriented course that provides a curriculum on the physical aspects of voice and data cabling and installation.

- 320 BUILDING A VIRTUAL INFRASTRUCTURE . 3 HRS.**
This course will introduce students to the concepts and practices of computer virtualization, especially in the context of enterprise datacenter virtualization.

- 330. DIRECTORY SERVICES INFRASTRUCTURE (MCP #4). 3 HRS.**
The fourth in the series courses required to prepare the student for the Microsoft MCSE certification. Topics include active directory, DNS for active directory, network management, components of active directory and troubleshooting active directory security. (Prerequisite: Grade of "C" or better in CIT 211.) F

- 331. DIRECTORY SERVICES DESIGN (MCP #5). 3 HRS.**
The fifth in the series of courses required to prepare the student for the Microsoft MCSE certification. Topics include analyzing business requirements, analyzing technical requirements, directory services architecture design and service location design. (Prerequisite: Grade of "C" or better in CIT 112; Co-requisite: CIT 211) S

- 340. ADVANCED LINUX NETWORKING. 4 HRS.**
Students learn how to design, configure, and maintain network services with the Linux operating system and learn advanced configuration and troubleshooting techniques. (Prerequisite: C or better in CIT 240)

380. PRACTICUM IN SYSTEM ADMINISTRATION. 3 HRS.
Students will experience hands-on operation and maintenance of a computer network, communicating with network users, troubleshooting problems, and documenting network changes. (Prerequisite: Grade of B or better in CIT 111, 112; Grade of A in CIT 211; Instructor permission)

405. MULTI-LAYER SWITCHED NETWORKS (Cisco #7). 4 HRS.
This course is the third in a series of four required to prepare the student for a career in networking and the Cisco CCNP certification. Topics covered include LAN media, advanced switch configuration, VLAN's spanning tree protocol and redundant links, routing between switches, multi-layer switching, hot standby routing protocol, multi-casting, and restricting network access. (Prerequisite: Grade of "C" or better in CIT 206.) F

406. OPTIMIZING NETWORK TECHNOLOGIES (Cisco #8). 4 HRS.
This course is one of four required to prepare the student for a career in networking and the Cisco CCNP certification. Topics covered include converged network connectivity requirements, Cisco VoIP implementations, Introduction to IP QoS, Implementing the DiffServ QoS model, Implementing Cisco AutoQoS, Implementing Wireless Scalability. (Prerequisite: Grade of "C" or better in CIT 206.) S

430. NETWORK SECURITY DESIGN (MCP #6). 3 HRS.
The sixth in the series of courses required to prepare the student for the Microsoft MCSE certification. Topics include analyzing business and technical requirements for network security, network security design, security between networks and communication channel security. (Prerequisite: Grade of "C" or better in CIT 112) (Co-requisite: CIT 211). F

431. NETWORK INFRASTRUCTURE DESIGN (MCP #7). 3 HRS.
The seventh in the series of courses required to prepare the student for the Microsoft MCSE certification. Topics include analyzing business and technical requirements for network infrastructure design, Internet connectivity design, WAN infrastructure design, and network management and implementation design. (Prerequisites: Grade of C or better in CIT 112; co-requisite CIT 211) S

460. INTERDISCIPLINARY PROJECTS. 3 HRS.
An investigation of an actual or experimental situation; may involve the design, construction, and testing of an experimental apparatus. Students will be assigned to a multiple-disciplinary project team. (Prerequisites: INDT 240, INDT 422, INDT 424 and senior status.) S

COMPUTER SCIENCE (CS)

101. INTRODUCTION TO COMPUTING. 3 HRS.
This course is designed to help students acquire the knowledge needed to function in the information society. Such areas as microcomputer skills, electronic mail, use of the Internet and social/ethical issues will be addressed. Students should have a basic familiarity with computers before taking this class. F, S, SU

108. EDUCATIONAL TECHNOLOGY 3 HRS.
Course focuses on practical applications for computers and technology in the elementary/middle school classroom. Practice using presentation, grade book, word processing and Internet software, and use of computers, printers, scanners, cameras and projectors will be offered. EDUCATION MAJORS ONLY

115. PROGRAMMING SMALL COMPUTERS. 3 HRS.
Introduction to interaction with small computer systems and microcomputers; available hardware and software; manipulation of numeric and string variables and constants; sequential and direct access files. (Prerequisite: instructor's consent.) (Requires 3 outside lab hours per week.)

118. DISCRETE MATHEMATICS. 3 HRS.
The course is designed to help students acquire knowledge needed to understand the mathematical principles underlying a number of modern computer science disciplines. F

121. COMPUTER PROGRAMMING 1. 3 HRS.
Computer components and functions; elementary data types and their internal representation; structure of logical programming blocks; arrays, sub-programs, elements of good programming style; problem-solving methods and development of algorithms for data manipulation; searching and sorting.

122. COMPUTER PROGRAMMING 2. 3 HRS.
Continuation of CS 121. Top-down design, modular programming, string processing, elementary data structures, basic disk I-O and recursion. (Prerequisite: CS 122) S

123. FLASH 3 HRS.
Students will learn step-by-step instructions and in-depth explanations of the features of Adobe Flash. Drawing objects, symbols, and interactivity, creating animations, creating special effects, preparing and publishing movies, and importing and modifying graphics, behaviors and components are covered. Students will learn how to create complex animations, using ActionScript, adding sound and video, and begin using advanced ActionScript. F

126. COBOL. 3 HRS.
Structure and syntax of the most predominant business applications programming language. Programming projects designed to support applications in management information systems, including elementary disk I-O. Recommended for students preparing for programming in business. (Prerequisite: CS 121.)

127. FLASH INTERACTIVITY & GAMES 3 HRS.
This course teaches interactivity, game programming and implementing mathematical function within the Flash development environment. Sophisticated animated interfaces, ActionScript and virtual reality concepts are employed in an application driven approach. (Prerequisites: CS 123.) S

128. INTRO TO ANIMATION. 6 HRS.
This course teaches the entire process of animation from sketching to electronic design. The focus of the course is classical animation techniques for digital designers. Contour drawings sequencing, character design and development, storyboards, production and workflow are covered. S

129. WEB PAGE DESIGN. 3 HRS.
Students will learn how to create web sites using Adobe Dreamweaver by critical thinking, problem solving approach involving hands-on projects. S

130. 3D ANIMATION & MODELING. 3 HRS.
Students will learn how to create 3D objects and characters in three dimensional graphics program for use in games, animated advertisements and web sites. F

202. DIGITAL GAME DESIGN. 3 HRS.
This course is an introductory overview of the electronic game development process and underlines the historical context, content creation strategies, and future trends in the industry. The course will also explain how games are produced, tested and released. F

203. ANIMATION AND ADVERTISING. 3 HRS.
This course covers creating 3D advertisements for television, electronic signage and web applications using industry and standard software. S

- 209. OPERATING SYSTEMS. 3 HRS.**
Characteristics of operating systems; relationships between operating systems and computer architecture; language translators; supervisor; data management programs; multiprogramming and virtual memory concepts; and comparisons of popular operating systems for small and main-frame systems. (Prerequisite: CS 122) F
- 215. RPG PROGRAMMING. 3 HRS.**
Structure and syntax of language designed for report generation; auxiliary file creation; updating and generation of multi-step reports. (Prerequisite: CS 209)
- 221. FILE PROCESSING. 3 HRS.**
Organization of external files including sequential, direct, and indexed file relationships in a data base management system; creating, updating, searching, and sorting under various file structures; applications using a high-level structured programming language. (Prerequisite: CS 122, MATH 126.)
- 222. COMPUTER ARCHITECTURE AND ASSEMBLY PROGRAMMING. 3 HRS.**
Internal representation of data types and instructions; structure and syntax of assembly language instructions; function of registers; construction of assemblers; and linkage of assembly modules with modules compiled from a high-level language. (Prerequisite: CS 122)
- 230. GRAPHICS. 3 HRS.**
Students will make graphics with Illustrator and Photoshop. Course covers formatting files into appropriate graphic file formats, learning how to draw with a vector graphics program and how to create artwork outlines. Students will learn the basics of digital image editing with Photoshop. File formats, filters, layers, color correction, sharpening, transparency, color matching and drawing tools will be covered. F
- 251. QUANTITATIVE METHODS. 3 HRS.**
Pert charts, Linear programming, critical path method, forecasting, inventory analysis, queuing and simulations, network models, Markov analysis. (Prerequisite: CS 121, MATH 126)
- 295. SEMINAR. VARIABLE HRS.**
Designed for small groups interested in a particular topic. Participants will present material for discussion. Course may be repeated up to 6 credit hours. (Prerequisite: departmental approval.)
- 300. COMPUTER GRAPHICS. 3 HRS.**
Introduction to computer graphics; hardware; algorithms; support software; user interface; business application. (Prerequisites: CS 221 and MATH 128) F
- 301. DATABASE THEORY AND DESIGN. 3 HRS.**
Introduction to database structure, organization, and retrieval. Query languages, normalization, file structures, database security and distributed database systems will be discussed. (Prerequisite: CS 221 or Instructor consent.) F
- 302. SYSTEM ANALYSIS AND DESIGN. 3 HRS.**
Analysis and design of computer-based information systems; organization of information systems; techniques for conducting system studies; developing specifications and design; and documentation. (Prerequisite: CS 221 or Instructor consent.) S
- 303. ANIMATION FOR ADVERTISING. 3 HRS.**
This course covers creating 3D advertisements for television, electronic signage and web applications using industry and standard software. S

- 304. DIGITAL GAME DESIGN. 3 HRS.**
This course is an introductory overview of the electronic game development process and underlines the historical context creation strategies, and future trends in the industry. The course will also explain how games are produced, tested and released. F
- 323. FLASH. 3 HRS.**
Students will learn step-by-step instructions and in-depth explanations of the features of Adobe Flash. Drawing objects, symbols, and interactivity, creating animations, creating special effects, preparing and publishing movies, and importing and modifying graphics, behaviors and components are covered. Students will learn how to create complex animations, using ActionScript, adding sound and video, and begin using advanced ActionScript. CS 323 covers more material than CS 123. F
- 327. FLASH INTERACTIVITY & GAMES. 3 HRS.**
This course teaches interactivity, game programming and implementing mathematical functions within the Flash development environment. Sophisticated animated interfaces, ActionScript and virtual reality concepts are employed in an application driven approach. (Prerequisites: CS 123 or CS 323.) S
- 328. INTRODUCTION TO ANIMATION. 6 HRS.**
This course teaches the entire process of animation from sketching to electronic design. The focus of the course is classical animation techniques for digital designers. Contour drawings, sequencing, character design and development, storyboards, production and workflow are covered. S
- 329. WEB PAGE DESIGN 3 HRS.**
Students will learn how to create 3D objects and characters in a three dimensional graphics program for use in games, animated advertisements and web sites. Students enrolled in CS 330 will be required to cover more material. F
- 330. 3D ANIMATION & MODELING. 3 HRS.**
This course teaches the fundamentals of low polygonal modeling and character design with a 3D graphics program. The course also includes a brief overview of motion synthesis via physics in a scripting system. Students in CS 330 are required to cover more material than CS 130 students.
- 397. SPECIAL TOPICS. 3 HRS.**
- 400. COMPUTER SIMULATIONS. 3 HRS.**
Principles of simulation and application of simulation languages to both continuous and discrete systems. (Prerequisites: CS 221 and INDT 211 or INDT 311.)
- 401. COMPUTER NETWORKS. 3 HRS.**
Understanding of the design of software to support computer networks, layered protocol architecture, and distributed operating systems. Other topics include switching, encryption, data compression, and security. (Prerequisite: CS 221) F
- 403. SOFTWARE ENGINEERING AND DATA STRUCTURES. 3 HRS.**
Dealing with problems of programming in the large, software life cycle, object-oriented design, numerical algorithms, graph algorithms, pattern matching and encryption methods. (Prerequisite: CS 221.) S
- 430. GRAPHICS. 3 HRS.**
Students will make graphics with Illustrator and Photoshop. Course covers formatting files into appropriate graphic file formats, learning how to draw with a vector graphics program and how to create artwork outlines. Students will learn the basics of digital image editing with Photoshop. file formats, filters, layers, color correction, sharpening, transparency, color matching and drawing tools will be covered. Students enrolled in CS 430 are required to cover more material than students enrolled in CS 230. F

460. SENIOR PROJECT. 3 HRS.
Students will present a systems analysis and design project as a final senior project in Computer Information Systems. (Prerequisites: BAT Students - INDT 420, 422, 424, and senior status; BSBA students - CS 302 and senior status.) S

CRIMINAL JUSTICE (CJ)

111. INTRODUCTION TO CRIMINAL JUSTICE. 3 HRS.
Introductory course designed to familiarize students with the criminal justice system. Emphasis is placed on understanding the nature, functions, and limits of law and the criminal justice process from arrest to final disposition. (Must be first class for CJ program majors) F-S-Su

112. CRIMINAL LAW. 3 HRS.
Covers substantive criminal law including the elements of major crimes and their defenses. (Prerequisite: CJ 111.)

121. POLICE ADMINISTRATION AND SUPERVISION. 3 HRS.
Identifies the investigative procedures used in the process of fact gathering, testing and confirmation techniques by police administrators in relationship to effective utilization of resources. Examines the executive's responsibilities, provides for implementation of command policy and studies the auxiliary services in support of police operations.

122. POLICE COMMUNITY RELATIONS. 3 HRS.
A study of the philosophy and history of American law enforcement: limitations imposed on law enforcement in a democratic society, law enforcement agencies, and police ethics. Special emphasis is placed on the police and community relations.

123. INTRODUCTION TO CORRECTIONS. 3 HRS.
A survey of historical and contemporary correctional theories and programs with emphasis on current organizational structures.

131. CRIMINAL INVESTIGATION. 3 HRS.
Identifies the investigative procedures for concluding that a crime was committed, recognizing, collecting and preparing physical evidence for transmission to court. Preparing an investigation report in the potential prosecution of a criminal case.

143. PRINCIPLES OF PRIVATE SECURITY. 3 HRS.
An overview of the security field, covering the organization and management of the security function in industry, business, government and institutions. The protection of personnel, facilities and other assets as well as the administrative, legal and technical problems of loss prevention and control are analyzed. Various areas within the security field are explored along with employment opportunities.

150. POLICE REPORT WRITING 3 HRS.
Develop skills required for crime incident note taking, observation, interviewing and report writing techniques. Scenario exercises will be utilized for hands-on instruction to preparedata and provide courtroom information for prosecution purposes. (Prerequisite: READ 079/080, ENGL 091)

155. FORENSIC SCIENCE 4 HRS.
An introductory lab-based course involving a basic understanding of forensic science and how it is used in the criminal justice system, focusing on crime scene evidence, lab analysis techniques, recording, and presenting data. Mock crime scenes will be investigated, and real crime studies analyzed. (3 lecture hours; 2 lab hour per week) (Prerequisite: MATH 021, ENGL 091, READ 079/080)

160. CRISIS/DOMESTIC COMMUNICATION . 3 HRS.
A course providing knowledge of crisis theory and development of communication skills necessary for application to intervention services for family violence, sexual assault and other crisis situations.

211. CRIMINAL BEHAVIOR. 3 HRS.
The course is organized around the phenomenon of crime as a developmental process occurring in social, political, and individual contexts, examining the criminal and juvenile justice systems; the biological, psychological, social and environmental roots of crime; the nature of the crimes themselves; the victims of crime; and the punishment of crime.

213. PROBATION AND PAROLE. 3 HRS.
The study of the development, organization, operation, and result of the systems of probation and parole, as substitutions for incarceration methods; selection, success criteria, and public attitudes.

225. CONSTITUTIONAL LAW. 3 HRS.
Constitutional law is concerned primarily with the exercise of judicial review. The focus is on the manner in which the courts generally have interpreted the cryptic provisions of the US Constitution; the principles, doctrines and rules developed in the cases and the underlying policies and values. F-S

226. PENOLOGY. 3 HRS.
Development of interpersonal communication and decision making skills for direct intervention with correctional clients and analysis of current methods of correctional treatment. F

230. WOMEN AND CRIME. 3 HRS.
An introductory examination of women's roles in the various aspects of criminal justice, including the various theories and approaches to the slow but progressive changes taking place by women as offenders, victims and professionals within the criminal justice system.

245. VICTIMOLOGY. 3 HRS.
An introductory examination of victimology within the sociological framework in order to deepen the student's understanding of the victim of a crime, to provide an organizing structure of the roles of victimology and the reasons for victimization. The student will explore the role of victimology in today's criminal justice system, examining the consequences of victimization and the various remedies now available for victims.

251. CRIMINALISTICS. 3 HRS.
Aspects of criminal investigation at the scene and in the laboratory; classification and lifting of fingerprints; ballistics; analysis of hair, fibers, blood, paint and tools; and development of casts.

255. DRUGS IN AMERICA. 3 HRS.
A course designed to provide an overview of drug issues in America, an understanding of the drug problem, and proper police procedure of drug investigations.

270. COURTROOM PROCEDURE 3 HRS.
An introduction and overview of Courtroom Procedures.

275. PHOTOGRAPHY 3 HRS.
Course covering the operation of various photographic equipment for future applications to criminal justice situations.

280. FORENSIC PATHOLOGY. 3 HRS.

A course to develop an understanding of the basic knowledge of forensic pathology and the investigation of deaths. (Prerequisite: CJ 155)

291. INTERNSHIP. 3 HRS.

Provides on-site, supervised observation and participation in various law enforcement areas; students work with the respective agencies in the performance of regular criminal justice related duties. This course bridges the gap between theory and practice and requires a specific number of field work hours each week and a periodic seminar. (3 hours of cooperative education in a criminal justice placement may be substituted) (Serves as a capstone and is one to be taken the semester of graduation) F-S-Su

313 CRIMINAL PROCEDURES. 3 HRS.

Advanced instruction in the rules of criminal procedures for Circuit Court, Magistrates Court and Federal Courts. Additionally, topics will include rules of Evidence and Appeal Court Procedures. (Prerequisites: CJ 112 and CJ 225)

339. ORGANIZED CRIME. 3 HRS.

The study of organized crime and how it has evolved into modern day organizations. Students will become familiar with federal statutes dealing with organized crime and various departments assigned to investigating them. Students will also understand the various roles of the local, state and local task forces.

360. FRAUD EXAMINATION. 3 HRS.

Delve into the world of white-collar crime and forensic accounting. Study methods of detection, prevention and investigation.

372. POLICE TACTICS. 3 HRS.

Advanced study of law enforcement practices with an emphasis on major issues involving ethical practices, use of force and deadly force and other liability issues, as well as high speed pursuit, and certification in fire arms and other tactical weapons.

DRAFTING (DRAF)**102. DRAFTING FUNDAMENTALS. 3 HRS.**

Introductory-level drafting course, including graphic language, fundamentals of lettering, sketching, orthographic projection, dimensioning, sectioning, axonometric projection, and auxiliary views. F-S

103. MECHANICAL BLUEPRINT READING. 2 HRS.

Reading of machine prints and drawings commonly used in industry and trades.

111. TECHNICAL DRAFTING 1. 3 HRS.

Drafting equipment, lettering, geometrical construction, dimensions, orthographic projections, isometric, diametric, trimetric, and oblique projection sections, auxiliary views, revolutions, and drawing problems. F-S

112. TECHNICAL DRAFTING 2. 3 HRS.

Continuation of DRAF 111. Working drawings, intersections, geometric space problems, and engineering drawings. (Prerequisite: DRAF 111.) S

113. DESCRIPTIVE GEOMETRY. 3 HRS.

Graphic representation and solution of space problems; points, lines, planes, parallelism, perpendicularity, vectors, developments, intersections, and warped surfaces. (Prerequisite: DRAF 111.) F

114. ELECTRICAL DRAFTING. 3 HRS.

Study of electronics components and symbols. Electronics symbol in CAD, CAD-Generated Diagrams, block diagrams, schematic diagrams, logic diagrams, wiring diagrams, motors and control circuits, power distribution printed circuit design, and printed circuit boards. (2 lecture hours; 2 lab hours per week.) F

115. COMPUTER-AIDED DRAFTING. 3 HRS.

Graphic designs and drawings developed by use of computer. Drawings include orthographic, pictorial, electrical, electronic, petrochemical, metal and mining, and architectural. (Co-requisite: DRAF 111) F

116. CUSTOMIZING AUTOCAD. 3 HRS.

Introduction to customizing computer-aided drafting software using AutoCAD. Topics covered are 3-D drawing, solid modeling, symbol libraries, slides, screen menus, icon menus and tablet menus. (Prerequisite: DRAF 115) S

212. STRUCTURAL DESIGN. 3 HRS.

Design and checking of steel to be used as beams, girders, lintels, columns and struts; design of simple frames; use of bar and open-web, long joists; design of timber beams, girders, columns and wood floors. (Prerequisite: DRAF 111.) F

213. SCHEMATIC DRAFTING. 3 HRS.

Schematic interpretation of electronic, hydraulic and pipe drawings. Electronic drawings include logic and integrated circuit schematics; hydraulic drawings include multiple position and pictorial schematics; and pipe drawings include isometric and oblique schematics. S

220. MICROSTATION. 3 HRS.

An introductory course in computer-aided drafting (CAD). Computers are used to create technical drawings. Computer terminology along with Intergraph Corporation's software Microstation are used. Drawings include orthographic, pictorial, electrical, electronic, petrochemical, metal and mining, and architectural. (Co-requisite: DRAF 111.) S

235. TOOL-MACHINE DESIGN. 3 HRS.

Advanced drafting; design and techniques used in planning and designing dies, jigs, and fixtures. (Prerequisite: DRAF 111) S

314. COMPUTER-AIDED DESIGN. 3 HRS.

The basics of 2-D AutoCAD. Study drawing types from the major field of study. Create drawings in technology majors, such as electronics, electro-mechanical, environmental, manufacturing, and welding. F

315. ARCHITECTURAL DESKTOP. 3 HRS.

A study of the theory and design of commercial and residential buildings. This fundamentals course uses Autodesk's Architectural Desktop software.

EARLY CHILDHOOD DEVELOPMENT (ECE)**105. FAMILY AND THE CHILD. 3 HRS.**

Focuses on development of children in family settings. Emphasizes family involvement in early childhood programs and literacy. Also explores the needs of diverse families. (Prerequisite: ENGL 091) F-S-Su

150. PRACTICUM IN EARLY CHILDHOOD DEVELOPMENT I. 3 HRS.

Beginning field experience. Designed to build competencies working with young children. Students will work in an approved childcare agency for a minimum of 3 hours per week for a total of 45 hours in the semester. Reflective journaling and other assignments required. (Prerequisite: ENGL 091) S

210. CURRICULUM AND STRATEGIES FOR EARLY CHILDHOOD PROGRAMS. 3 HRS.
Explore curricula associated with early childhood programs, organizing and preparing experiences for young children including creative play, and integrating experiences in early childhood programs. (Prerequisite: ENGL 091) F

220. ETHICS & ADMINISTRATION OF EARLY CHILDHOOD PROGRAMS. 3 HRS.
Background and ethics issues related to administering early childhood programs. Emphasizes relationships with parents and community, managing operations and budget, meeting state regulations and licensing requirements, building programs, and supervising personnel. (Prerequisite: ENGL 091) S

240. OBSERVATION AND ASSESSMENT SKILLS. 3 HRS.
Focuses on the various tools and assessments for children ages birth through age 5 years. Includes the role of assessment and documentation in curriculum development and individual learning goals and objectives. F

250. PRACTICUM IN EARLY CHILDHOOD DEVELOPMENT II. 5 HRS.
Continuation of ECE 150. Students will work in an approved childcare agency for a minimum of 5 hours per week for a total of 80 hours in the semester. Reflective journaling and other assignments required. (Prerequisite: ECE 150) F

251. PRACTICUM IN EARLY CHILDHOOD DEVELOPMENT III. 7 HRS.
Continuation of ECE 250. Students will work in an approved childcare agency for a minimum of 7 hours per week for a total of 120 hours in the semester. Reflective journaling and other assignments required. Concurrent enrollment. (Prerequisite: ECE 250) S

255. PRACTICUM SEMINAR. 3 HRS.
Weekly seminar focusing on students' practicum experiences and other topics and issues that are timely to the profession. Concurrent enrollment with ECE 251 required. (Prerequisite: ENGL 101) S

ECONOMICS (ECON)

201. MICROECONOMICS. 3 HRS.
Introduction to types of business organizations; market models of capitalism. Basic theories of costs of production, and output determination. This course also touches on labor unions, international trade, and economic considerations in the control of American industry. [Business Core Course]

202. MACROECONOMICS. 3 HRS.
Theories of supply and demand, national income determination and public debt. Overview of classical and Keynesian economic theory; national fiscal policy; and current problems/policies bearing thereon. [Business Core Course]

311. INTRODUCTION TO ECONOMIC DEVELOPMENT. 3 HRS.
Broad introduction to the principles and practices, tactics and techniques of local and regional economic development.

320. MANAGERIAL ECONOMICS. 3 HRS.
This course is a branch of economics dealing with the application of economic theory and methodology to decision-making problems faced by private, public and not-for-profit institutions and industrial organizations. (Prerequisites: ECON 201, ECON 202)

331. FINANCIAL ECONOMICS 3 HRS.
Students are introduced to the role of money and banking systems in determining the national income and output. Monetary theories and policies are emphasized. (Prerequisites: ECON 201, ECON 202.)

413. ANALYSIS OF ENTERPRISES FOR ECONOMIC DEVELOPMENT PURPOSES. 3 HRS.
Analysis of business or other entities that show an interest in relocating or expanding within the target community or county will be undertaken by students in this course. (Prerequisite: ECON 311)

EDUCATION (EDUC)

100. INTRODUCTION TO TEACHER EDUCATION. 2 HRS.
Overview of the teaching profession. Central themes cover the aspects of becoming a teacher; schools and their place in society; students and curriculum, as well as career opportunities and professional development. Historical foundations of education are presented together with a look to the future. Classroom computer applications also are introduced. (Prerequisite: Completion of ENGL 091) (Co-requisites: 20 hours of field experience.) F-S

200. INTRODUCTION TO EXCEPTIONAL CHILDREN. 3 HRS.
Survey of the non-traditional learner with emphasis upon the legal, ethical and educational ramifications for public school personnel. Characteristics and etiologies of categorical classifications will be studied. (Prerequisites: EDUC 100 and PSYC 241) (Co-requisites: 20 hours field experience.) F-S

230. COOPERATIVE DISCIPLINE. 3 HRS.
Students will study the attention seeking, power seeking, revenge seeking, and avoidance of failure behaviors. Manifestations of these behaviors will be studied, as well as preventions and interventions. Issues of self-esteem and belonging will be emphasized in this class that helps students learn to build communities in their classrooms. (Prerequisite: ENGL 101) (Co-requisites: Field Experience) Spring only.

250. INTRO TO EARLY EDUCATION. 3 HRS.
Study of developing and creating learning environments for kindergarten and pre-kindergarten classrooms. Also includes study of family involvement, engaged advocacy, and importance of the community in building relationships for strong programs. (Prerequisite: Completion of ENGL 091). F-S

255. LANGUAGE ARTS & EMERGING LITERACY. 3 HRS.
Focus on planning, selection, and use of programs for beginning readers. Includes study of strategies for oral skills and emerging literacy. Course will review evaluation strategies appropriate for early reading assessment. S

300. THEORIES OF LEARNING. 3 HRS.
Focus on psychological learning principles and their classroom applications. Major classical and modern theories of learning are emphasized. An exploration of learning styles, metacognition and forms of problem solving and their importance in the classroom to the Early and Middle Childhood teacher. (Prerequisites: EDUC 200. To be taken the semester applying for admission to the program.) (Co-requisite: Field experience.) F

302. STRATEGIES IN EARLY EDUCATION. 3 HRS.
Study of essential concepts, inquiry tools, and structure of content area for early education. Includes identification of resources to deepen understanding of appropriate materials, manipulatives, media, and technology for young learners. Practice observation skills/techniques. (Prerequisites: Admission to Teacher Education Program (Co-requisite: Field Experience) (Concurrent enrollment in EDUC 402 required.) F

315. ART STRATEGIES. 3 HRS.
This course prepares teacher candidates to use basic art skills in the elementary classroom. The course will focus on the integration of art into all areas of the multi-subjects curriculum. (Prerequisites: Admission to Education Program.) F-S

316. MUSIC STRATEGIES. 3 HRS.

This course prepares teacher candidates to use basic music skills in the elementary classroom. This course will focus on the integration of music into all areas of the multi-subjects curriculum. (Prerequisites: Admission to Education Program.) F-S

320. EDUCATIONAL ASSESSMENT. 3 HRS.

Introduction to the assessment process. A study of the philosophical and theoretical foundations of evaluation procedures used in public schools will lead to the statistical devices for measuring pupil progress in early childhood and middle school levels. Focus will be upon the skills of device design, administration, scoring and interpretation of data in all content areas. (Prerequisite: Admission to Teacher Education Program.) F-S

330. CLASSROOM MANAGEMENT. 3 HRS.

Focus on the major models of classroom management and characteristics of positive classroom environments. Emphasizes prevention of classroom disruptions through understanding student behaviors. Basic physiological, emotional and cognitive needs of students and teachers are studied. Philosophical approaches to teaching are developed through coursework and reflective journal writing. Computer applications in the classroom also are emphasized. (Prerequisites: Admission to Teacher Education Program.) (Co-requisite: EDUC 330L) F-S

330L. CLASSROOM MANAGEMENT PRACTICUM. 0 HRS.

A practicum offered on-site at a local professional development school. Application of management plans and techniques are the focus of this experience. (Prerequisite: Admission to Teacher Education Program) (Co-requisite: Enrollment in EDUC 330.)

350. SPECIAL PRACTICUM IN TEACHING - PRIMARY. 1-6 HRS.

This practicum provides skills development in observation, planning, teaching, and evaluation at the primary levels under the direct supervision of public schools and college supervisors. (Prerequisite: Division Chair Permission)

351. SPECIAL PRACTICUM IN TEACHING - INTERMEDIATE. 1-6 HRS.

This practicum provides skills development in observation, planning, teaching, and evaluation at the intermediate levels under the direct supervision of public schools and college supervisors. (Prerequisite: Division Chair Permission)

401. EARLY CHILDHOOD AND MIDDLE SCHOOL CURRICULUM. 3 HRS.

The analysis and application of various curriculum design, instructional strategies and planning models for Early and Middle Childhood teachers. Cooperative learning and the application of technology in the classroom are emphasized. (Prerequisites: Admission to Teacher Education Program.) (Co-requisites: EDUC 401L.) F-S

401L. CURRICULUM PRACTICUM. 0 HRS.

A practicum offered on-site at a local professional development school. Application and observation of curriculum design, instructional strategies, cooperative learning, planning models, and technology are the focus of this experience. (Prerequisite: Admission to Teacher Education Program.) (Co-requisite: EDUC 401.)

402. EARLY CHILDHOOD CURRICULUM. 2 HRS.

Focus on requirements for early education classrooms. Includes the study of developmentally appropriate approaches to building meaningful curriculum that includes essential concepts and inquiry tools that meet academic goals for young learners. (Prerequisites: Admission to Teacher Education Program) (Co-requisite: Field experience; enrollment in EDUC 302.) F

403. STUDENT TEACHING - EARLY EDUCATION. 5 HRS.

Eight weeks of full time observation, planning, teaching, and evaluation at the Pre K-K levels under the direct supervision of public school and college supervisors. (Prerequisites: Admission to Student Teaching.) F-S

404. STUDENT TEACHING - PRIMARY. 5 HRS.

Eight weeks of full time observation, planning, teaching and evaluation at the Primary (K-3) levels under the direct supervision of public school and college supervisors. (Prerequisite: Admission to Student Teaching.) F-S

405. STUDENT TEACHING IN SCIENCE 5-9. 5 HRS.

Full-time planning, teaching and evaluation at the middle school level in Science under the direct supervision of public school and college supervisors. (Prerequisite: Admission to Student Teaching.) F-S

406. STUDENT TEACHING IN GENERAL MATH -ALGEBRA I. 5 HRS.

Full-time planning, teaching and evaluation at the middle school level in Mathematics under the direct supervision of public school and college supervisors. (Prerequisite: Admission to Student Teaching.) F-S

407. STUDENT TEACHING IN ENGLISH 5-9. 5 HRS.

Full-time planning, teaching and evaluation at the middle school level in English under the direct supervision of public school and college supervisors. (Prerequisite: Admission to Student Teaching.) F-S

408. STUDENT TEACHING - INTERMEDIATE. 5 HRS.

Eight weeks of full-time observation, planning, teaching, and evaluation at the Intermediate (4-6) levels under the direct supervision of public school and college supervisors. (Prerequisite: Admission to Student Teaching.) F-S

409. STUDENT TEACHING IN SOCIAL STUDIES. 5 HRS.

Full-time planning, teaching and evaluation at the middle school level in Social Studies under the direct supervision of public school and college supervisors. (Prerequisite: Admission to Student Teaching) F-S

410. STUDENT TEACHING SEMINAR. 2 HRS.

Self-analysis and evaluation of instructional performance through a peer counseling approach. Preparation of a plan for continued professional development and inquiry into current issues in the profession. (Prerequisite: Admission to Student Teaching; Co-requisite: EDUC 403, 404, 405, 406, 407, 408, 409 or 411.) F-S.

411. STUDENT TEACHING MATH K-4. 5 HRS.

Full time planning, teaching, and evaluation at the K-4 level in mathematics under the direct supervision of public school and college supervisors. (Prerequisite: Admission to Student Teaching) F-S

ELECTRONICS (ELEC)**101. ELECTRICITY & ELECTRONICS FUNDAMENTALS. 2 HRS.**

Introduction to concepts and applications of electricity and electronics related to technical fields. Topics include electron flow, analog vs. digital waveforms, process control, motors, generators, wiring, and drawings. (Co-requisite: ELEC 101L)

101L. ELECTRICITY & ELECTRONICS FUNDAMENTALS LAB. 1 HR.

Application of concepts introduced in ELEC 101. (Co-requisite: ELEC 101)

105. DIRECT CURRENT CIRCUITS. 2 HRS.

Study of theory and laboratory experiments in basic and advanced direct current circuits as well as networks. Concepts covered include voltage, current, resistance, conductance and power. Topics studied are: Ohms Law, Series Circuits, Parallel Circuits, Complex Circuits and Network Theorems. (Prerequisite: MATH 111 or 126 or concurrent registration) (Co-requisite: ELEC 105L)

105L. DIRECT CURRENT CIRCUITS LAB.	1 HR.
Application of concepts introduced in ELEC 105. (Co-requisite: ELEC 105)	
120. ALTERNATING CURRENT CIRCUITS.	2 HRS.
Theory and laboratory experiments in the area of alternating current in resistive, capacitive and inductive circuits. Topics covered are: sinusoidal and nonsinusoidal waveforms, current/ voltage relationships in RC, RL and RLC circuits, power factor, phase angles, phasor diagrams and network analysis (Prerequisite: ELEC 105, Math 111 or 126) (Co-requisite: ELEC 120L)	
120L. ALTERNATING CURRENT CIRCUITS LAB.	1 HR.
Application of concepts introduced in ELEC 120. (Co-requisite: ELEC 120)	
124. ANALOG CIRCUITS 1.	2 HRS.
Concepts covered include atomic structures, P-type and N-type material. Diode fabrication. Devices studied include: Rectifier diodes, zener diodes, varactors, varistors, LEDs and bipolar transistors. Topics covered: Half & full wave rectifiers, filtered and regulated power supplies, PNP and NPN transistors characteristics, biasing and models. Laboratory experiments are used to verify most of the topics covered in the lecture. (Prerequisites: ELEC 105, 120 or concurrent registration) (Co-requisite: ELEC 124L)	
124L. ANALOG CIRCUITS 1 LAB.	1 HR.
Application of concepts introduced in ELEC 124. (Co-requisite: ELEC 124)	
127. ANALOG CIRCUITS 2.	2 HRS.
Continuation in the study of analog devices and their behavior in circuits. Devices studied include: Junction field effect transistors (FET), thyristors, SCRS, and UJTS. Topics covered include: JFET amplifiers, analog switches, frequency response of bipolar and field effect transistor amplifiers, and positive and negative feedback. Laboratory exercises will be used in most of the classroom instruction. (Prerequisite: ELEC 124) (Co-requisite: ELEC 127L)	
127L. ANALOG CIRCUITS 2 LAB.	1 HR.
Application of concepts introduced in ELEC 127. (Co-requisite: ELEC 127)	
133. INDUSTRIAL WIRING AND CODE.	2 HRS.
Industrial, commercial and residential electrical wiring, safety code, motor starters and controllers. (Co-requisite: ELEC 133L)	
133L. INDUSTRIAL WIRING AND CODE LAB.	1 HR.
Application of concepts introduced in ELEC 133. (Co-requisite: ELEC 133)	
220. INDUSTRIAL INSTRUMENTATION 1.	2 HRS.
Study of the operation of industrial power control circuits. Devices covered include: Relays, conductors, solid state switches, SCRs, and TRIACs. Control circuit devices include UJTs, PUTs, DIACs, photo-devices and timers. Systems studied include conveyers, First Failure Annunciator, automatic welding converters and output amplifiers. Laboratory exercises are used to test and troubleshoot most of the systems covered in lectures. (Co-requisite: ELEC 220L)	
220L. INDUSTRIAL INSTRUMENTATION 1 LAB.	1 HR.
Application of concepts introduced in ELEC 220. (Co-requisite: ELEC 220)	
221. INDUSTRIAL INSTRUMENTATION 2.	2 HRS.
Study of the devices found in the industry as inputs and outputs for programmable controllers, including motor, solenoid, alarm, light, relay stepping motor, limit switch proximity switch, transducers, etc. Concepts studied include: Examine ON, Examine OFF, Series Functions, Parallel Functions, Series and Parallel Rungs, PC Timing Cycle, and Time and Event Driven	

Sequence. Systems studied include: 4 station punch press, pipe threader, material handling, microcomputer assembly batch process control, spray paint robotic welder, etc. Laboratory exercise using programmable controller to set up the systems covered in lecture. (Prerequisite: ELEC 220) (Co-requisite: ELEC 221L)

221L. INDUSTRIAL INSTRUMENTATION 2 LAB.	1 HR.
Application of concepts introduced in ELEC 221. (Co-requisite: ELEC 221)	
222. DIGITAL LOGIC CIRCUITS.	2 HRS.
The analysis of digital logic circuits and systems with the help of truth table diagrams, numbering systems, logic gates, Boolean Algebra and Karnaugh maps. Devices studied include: inverters and Gates, or Gates NAND and NOR Gates, Exclusive OR and Exclusive NOR Gates. Systems studied include: Half and Full Adders, Encoders, and Decoders Code Converters, Multiplexers, Demultiplexers and Parity Generators. (Co-requisite: ELEC 222L)	
222L. DIGITAL LOGIC CIRCUITS LAB.	1 HR.
Application of concepts introduced in ELEC 222. (Co-requisite: ELEC 222)	
223. MEMORY AND SEQUENTIAL CIRCUITS.	2 HRS.
The analysis of the sequential systems and digital logic circuits through the use of timing diagrams, sequential states tables, waveforms, truth tables and Karnaugh maps. Devices studied include: Counters, Flip-Flops, various memory devices, Microprocessors, Buffers and Arithmetic Logic Units (ALU). Circuits include: interfacing, data transmission, and arithmetic processors. Laboratory exercises will be used to support classroom instruction plus troubleshooting will be exercised. (Prerequisite: ELEC 222.) (Co-requisite: ELEC 223L)	
223L. MEMORY AND SEQUENTIAL CIRCUITS LAB.	1 HR.
Application of concepts introduced in ELEC 223. (Co-requisite: ELEC 223)	
224. INDIVIDUAL PROJECTS.	3 HRS.
Building, trouble shooting, and adjusting for optimum results of electronic circuits such as regulated power supplies and solid state device testers, sirens, security systems, etc.	
225. ELECTRICAL MACHINERY.	3 HRS.
Theory and applications of direct and alternating current motors and generators; armature winding, field winding, induced voltage, types of AC, DC machines, parallel operation, speed regulation, power factor, efficiency and losses. (Prerequisite: ELEC 120) Co-requisite: ELEC 225L)	
225L. ELECTRICAL MACHINERY LAB.	1 HR.
Application of concepts introduced in ELEC 225. (Co-requisite: ELEC 225)	

(EMED) - (see Paramedic Science)

EMERGENCY RESPONSE (ERES)

120. EMERGENCY COMMUNICATION.	3 HRS.
The application of Incident Command Systems (ICS) principles to the establishment and operation of effective emergency communication in any planned or unplanned event.	
130. EMERGENCY RESPONSE TO TERRORISM.	3 HRS.
Preparation for and response to terrorist attacks, major disasters and other emergencies through understanding and use of the National Incident Management Systems (NIMS).	

ENGINEERING (ENGR)

- 101. ENGINEERING PROBLEM SOLVING I. 2 HRS.**
Engineering problem-solving methodologies and analysis, use of computers in problem-solving, technical report writing, team based project work and presentations. (Co-requisite: Math 155)
- 102. ENGINEERING PROBLEM SOLVING II. 3 HRS.**
Continued development of engineering problem-solving, teamwork and communication skills, with focus on using the computer as a tool through algorithm development and the use of a high-level computing language, such as MATLAB (Prerequisites: ENGR 101, Math 155 with a C or higher)
- 199. ORIENTATION TO ENGINEERING. 1 HRS.**
This course provides a beginning engineering student with information and tools to prepare him/her for a successful college life. Freshmen students can explore various engineering disciplines, prepare for an engineering career, and learn academic success strategies.

ENGLISH (ENGL)

- 039. SPECIAL PROBLEMS IN ENGLISH AS A SECOND LANGUAGE. 3 HRS.**
English for non-native speakers. Emphases include speaking, writing, reading, listening and American culture. May be repeated up to three times. (Prerequisite: High school diploma or equivalent.) F-S
- 049. BASIC WRITING. 3 HRS.**
Beginning writing practice, punctuation, sentence structure, and grammar in preparation for pre-college level writing; writing clear, grammatically-sound sentences; translation of thoughts and ideas into sentences. (Graded: pass/repeat.) (Prerequisite: placement test.) F-S-Su
- 091. PRE-COLLEGE WRITING. 3 HRS.**
Developing skills necessary for a college-level writing course: usage, grammar, punctuation, sentence and paragraph development. (Graded: pass/repeat.) (Prerequisite: pass grade in ENGL 049 or LA 065; or appropriate score on English placement test.) F-S-Su
- 101. COMPOSITION 1. 3 HRS.**
Expanding and sharpening skills necessary to express ideas and feelings clearly and effectively in expository essays. (Pre-requisite: passing grade in ENGL 091 or appropriate score on English placement test) F-S-Su
- 102. COMPOSITION 2. 3 HRS.**
The writing of papers based on analysis, synthesis, and conclusion from research sources. (Prerequisite: Grade of C or better in ENGL 101) F-S-Su
- 103. ENGLISH GRAMMAR, USAGE, AND STYLE. 3 HRS.**
Intense study of syntax, grammar, word-forms, punctuation and various accepted writing styles. Designed for new writers, editors, and secretaries. (Prerequisite: pass grade English 091 or placement test.)
- 107. TECHNICAL WRITING 1. 3 HRS.**
Develops basic technical writing skills by applying various approaches used to communicate in technical environments. Includes writing structural descriptions, operational descriptions, process explanations, analytical summaries and basic technical reports. Emphasis is on basic writing skills in grammar, mechanics, punctuation, spelling and sentence structure. (Prerequisite: English ACT score of 21; pass grade in ENGL 091 or appropriate score on placement test.) F-S-Su

- 108. TECHNICAL WRITING 2. 3 HRS.**
Continues development of students' technical writing skills. Expands problem-solving abilities through writing technical content associated with the principles of inductive/deductive reasoning. Emphasizes student interaction to complete applied communications assignments, conduct team research, and write analytical reports that may include pictorial and statistical data. Clarity and organization are stressed. Develops skills in writing in response to other writers' ideas through reading and interpreting technical and non-technical materials. Requires strong grammar and usage skills. (Prerequisite: grade of C or better in ENGL 107 or ENGL 101).
- 131. TYPES OF LITERATURE 1. 3 HRS.**
Definition, analysis, and critical evaluation of poetry and drama. (Prerequisite: Grade of C or better in ENGL 101) F-S-Su
- 132. TYPES OF LITERATURE 2. 3 HRS.**
Definition, analysis, and critical evaluation of the short story, novella and the novel. (Prerequisite: Grade of C or better in ENGL 101) F-S-Su
- 213. CREATIVE WRITING: POETRY. 3 HRS.**
An open-enrollment introduction to the writing of poetry, practice in the basics of image, metaphor, line, form, sound, and voice.
- 214. CREATIVE WRITING: CREATIVE NONFICTION. 3 HRS.**
An open-enrollment introduction to the writing of nonfiction.
- 215. CREATIVE WRITING: FICTION. 3 HRS.**
An open-enrollment introduction to the writing of fiction.
- 221. WORLD LITERATURE 1. 3 HRS.**
Masterworks from Western culture through the Renaissance with emphasis on universal themes and changing attitudes toward them. (Prerequisite: Grade of C or better in ENGL 101.) F
- 222. WORLD LITERATURE 2. 3 HRS.**
Representative master works of literature from throughout the world from the Renaissance through the present times with emphasis on universal themes and changing attitudes toward them. (Prerequisite: Grade of C or better in ENGL 101.) S
- 227. FILM AS ART. 3 HRS.**
"Reading" film as a visual and sound experience. Basic concepts of narrative film form and style: film time and space, elements of theatre in film, cinematography, editing, and sound. (Prerequisite: ENGL 101.)
- 241. AMERICAN LITERATURE 1. 3 HRS.**
Representative works from pre-national period to the Civil War. (Prerequisite: Grade of C or better in ENGL 101.) F-S
- 242. AMERICAN LITERATURE 2. 3 HRS.**
Representative poetry, fiction, and drama from the post-Civil War period to the present. (Prerequisite: Grade of C or better in ENGL 101.) F-S
- 251. CREATIVE WRITING. 3 HRS.**
Writing in literary forms; development of clarity, originality, and personal style. F
- 253. SOUTHERN WRITERS. 3 HRS.**
Twentieth-century Southern essayists, poets, short story writers and novelists in relation to ideological background. (Prerequisite: ENGL 101.)

- 257. INTRODUCTION TO SCIENCE FICTION. 3 HRS.**
Social, satirical, eschatological, philosophical, sword and sorcery, single- and multiple-premise, and psychological science fiction; space opera. (Prerequisite: ENGL 101.)
- 260. INTERNATIONAL TRAVEL AND LITERARY STUDIES. 3 HRS.**
A combination of the study of literature from different areas of the world and a tour to those sites for further setting and background research. (Prerequisite: Grade of C. or better in ENGL 101.) Su.
- 261. ENGLISH LITERATURE 1. 3 HRS.**
Representative works from the Middle Ages to the Eighteenth Century; Beowulf, Chaucer, Shakespeare, and others. (Prerequisite: Grade of C or better in ENGL 101.) F
- 262. ENGLISH LITERATURE 2. 3 HRS.**
Representative works from the Romantic period through the twentieth century. (Prerequisite: Grade of C or better in ENGL 101.) S
- 263. SHAKESPEARE. 3 HRS.**
Shakespeare's comedies, tragedies, and histories. (Prerequisite: ENGL 101.)
- 285. IMAGES OF WOMEN IN LITERATURE. 3 HRS.**
Exploration of the definition of woman seen in a variety of texts: the Bible, novels, films, and other materials. Analysis of female characterizations as embodied in narration, setting, conflict, theme and motif. (Prerequisite: Grade of C or better in ENGL 101.)
- 290. CLASSROOM COMMUNICATION SKILLS. 1-3 HRS.**
A review of both verbal and written communication skills needed by public school teachers with an emphasis on basic grammar and effective speaking (Individualized as much as possible). (The course is geared toward, but not limited to, education majors.)
- 308. ADVANCED WRITING. 3 HRS.**
Advanced Writing develops enhanced techniques expected in academic and professional writing. This course concentrates on formal formats, audience analysis, research and documentation, proofreading, editing, revision, and integration of source materials from various disciplines. (Prerequisites: ENGL 101, ENGL 102, or instructor consent, 48 undergraduate credit hours)
- 333. COMPARATIVE LITERATURE. 3 HRS.**
Using literary texts, "Comparative Literature" promotes studying intercultural relations that cross national boundaries, multicultural relations, and the interactions between literature, that arts, the sciences, technology, history, political science, philosophy, linguistic boundaries, and other disciplines. (Prerequisite: ENGL 101 and ENGL 102 and 48 college credit hours)
- 350. APPROACHES TO TEACHING GRAMMAR. 3 HRS.**
Students learn diagramming sentences, active/passive voice, distinction among verbals, use of modifiers, how to connect words, phrases, clauses and sentences correctly, and how to maximize the computer as learning and teaching aid for grammar. (Prerequisite: Admission to Teacher Education); (Co-requisite: Field Experience) F
- 356. TOPICS IN NATIVE AMERICAN LITERATURE. 3 HRS.**
This is a specialized topics course reflecting current trends and issues in Native American Literature and culture. Topic subjects vary per semester. (Prerequisites: ENGL 101 and ENGL 102 and 48 college credit hours)
- 365. MILTON. 3 HRS.**
All of Milton's poems and a few selected prose works. (Prerequisites: ENGL 101 and 102; 48 credit hours)

- 368. THE ROMANTIC MOVEMENT. 3 HRS.**
An upper-division survey of the works of the major British Romantic writers along with an introduction to works or scholarship in British Romanticism. (Prerequisites: ENGL 101, 102, 48 credit hours)
- 375. TOPICS IN CONTEMPORARY GLOBAL LITERATURE. 3 HRS.**
Specialized topics, which may vary per semester, will provide students the opportunity to discuss, interpret, compare, and critique contemporary literature by international authors. (Prerequisites: ENGL 101 and ENGL 102 and 48 college credit hours)
- 381. LITERARY CRITICISM. 3 HRS.**
The study of literary criticism from Aristotle to modern times. (Prerequisites: ENGL 101 and ENGL 102 and 48 hours of college credit)
- 387. TOPICS IN WOMEN'S LITERATURE. 3 HRS.**
Syllabus will vary per term. Topics include women writers outside of Great Britain and the United States; comparative women writers; women's writing on a particular theme or topic. (Prerequisites: ENGL 101 and ENGL 102 and 48 college credit hours)
- 403. CHILDREN'S LITERATURE. 3 HRS.**
Development of children's literature with emphasis on modern books; evaluation, selection, and use of books and non-print materials; illustrations. (Prerequisite: Grade of C or better in ENGL 101.) F-S
- 404. ADOLESCENT LITERATURE. 3 HRS.**
Examines literature for young adults through discussion of historical development and current trends. Recognition of story elements and application of critical judgements practiced. Study of diversity and use of adolescent literature emphasized. (Prerequisites: ENGL 101 and 102) S
- 406. PLAYWRITING. 3 HRS.**
Students will develop basic skills in playwriting techniques through the examination of written theatrical works, attendance at live performances, and completion of classroom exercises. Self-expression will be emphasized.

ENTREPRENEURSHIP (ENT)

- 200. ENTREPRENEURSHIP 1. 3 HRS.**
This course will involve developing a business plan, starting or expanding a business venture and understanding the legal requirements of business.
- 206. MANAGING AND MARKETING. 3 HRS.**
This course offers several approaches to the study of small business management and marketing. Specific topics will cover the management process, strategic planning, human resources, business promotion, pricing and inventory control.
- 207. FINANCING AND INFORMATION. 3 HRS.**
This course will provide the student with the knowledge of what financing options are available and their requirements for small businesses. This course will also cover the use of computer technology in the business setting.
- 208. NEW VENTURE ACCOUNTING. 3 HRS.**
This course will cover entrepreneurial accounting concepts and various accounting and financial records needed in business. The course will also familiarize the student with the tax consequences of different forms of business organizations.

ENVIRONMENTAL TECHNOLOGY (ENVR)

- 102. BASIC ENVIRONMENTAL SCIENCE. 3 HRS.**
Students will learn the fundamentals of environmental science including the elements of chemistry, biology, and ecology; review historical and current environmental legislation; learn to recognize environmental hazards; and learn how to identify their role in environmental protection. F
- 310. TOPICS IN ENVIRONMENTAL SCIENCE. 3 HRS.**
This course will present a number of current topics of environmental science for discussion which may include resource use, global warming, ozone depletion, and global environmental crime. An overview of the history of environmental regulation in the US will also be presented. S
- 320. INTRODUCTION TO ENVIRONMENTAL TECHNOLOGY. 3 HRS.**
This course compliments our existing environmental courses and it will provide another course for those students interested in Environmental Studies. The intent is offer at least six upper-division ENVR courses for RBA and MDS students which will allow them a learning experience that will benefit them if they choose to continue their education at the graduate level in Environmental Studies. (Prerequisites: ENVR 102, ENVR 310, Biol 101/103, CHEM 111/111L, and PSCI 111/111L.) S
- 330. ENVIRONMENTAL MANAGEMENT. 3 HRS.**
This course compliments our existing environmental courses and it will provide another course for those students interested in Environmental Studies. The intent is offer at least six upper-division ENVR courses for RBA and MDS students which will allow them a learning experience that will benefit them if they choose to continue their education at the graduate level in Environmental Studies. (Prerequisites: ENVR 102, ENVR 310, and ENVR 320.) F
- 340. ENVIRONMENTAL CONSERVATION. 3 HRS.**
This course compliments our existing environmental courses and it will provide another course for those students interested in Environmental Studies. The intent is offer at least six upper-division ENVR courses for RBA and MDS students which will allow them a learning experience that will benefit them if they choose to continue their education at the graduate level in Environmental Studies. (Prerequisites: ENVR 102, ENVR 310, BIOL 101/103, CHEM 111/111L, and PSCI 111/111L.) F
- 350. ENVIRONMENTAL LAW. 3 HRS.**
This course examines the legal interrelationships of environmental and ecological advocacy and practices. Explores the development of principal policies and regulations and methods for determining validity and viability of past and current practices related to commercial and industrial resource extraction and utilization. (Prerequisites: ENVR 102, ENVR 310, BIOL 101/103, CHEM 111/111L, and PSCI 111/111L.) S

FINANCE AND BANKING (FIN)

- 121. PRINCIPLES OF BANKING. 3 HRS.**
The history and evolution of banking as a service and as an institution are covered. The examination of specific banking functions such as handling deposits, check processing, collections, internal bookkeeping, loans, bank investments, and the trust department is cast against the regulations governing banks. This course is designed primarily for AIB students.
- 224. ANALYZING FINANCIAL STATEMENTS. 3 HRS.**
A study of the analytical processes and techniques available to interpret the financial data contained in the financial statements. This course is designed primarily for AIB students. (Prerequisites: ACCT 123 or ACCT 201 and FIN 121.)

- 226. CONSUMER LENDING. 3 HRS.**
An overview of consumer credit analysis and lending policies using basic techniques. Governmental regulations underlying consumer lending policies. This course is designed primarily for AIB students. (Prerequisite: FIN 224.)

- 233. CONSUMER COMPLIANCE. 1 HR.**
A review of the numerous rules and regulations that govern lending institutions in dealing with customer/debtors. Truth in Lending regulations, consumer credit statutes, fair credit reporting rules, and other guidelines are reviewed. This course is designed primarily for AIB students. (Prerequisite: FIN 224.)

- 235. PRODUCT KNOWLEDGE IN FIN INST: THE KEY TO SELLING. 1 HR.**
Services available through the Consumer Lending Department, the Commercial Lending Department, and the Trust Department of the Commercial Bank are discussed. Collateral services such as credit cards are also covered. This course is designed primarily for AIB students.

- 237. QUALITY CUSTOMER SERVICE. 1 HR.**
Finding customers, assessing their needs, defining and resolving problems with customers and retaining customers are areas covered during class sessions.

- 240. COMMERCIAL LENDING. 3 HRS.**
A study of the organization of the commercial lending department in lending institutions and the loan processing from the initial application for the loan to the collection of the moneys owed. This course is designed primarily for AIB students. (Prerequisites: FIN 121 and FIN 224)

- 340. PRINCIPLES OF BUSINESS FINANCE. 3 HRS.**
The role of financial management in business enterprises; financial analysis; planning for short-term and long-term financing; budgeting; and current asset management are topics covered in this course. (Prerequisites: ACCT 202; admission to BSBA or BASBA.)

- 356. FUNDAMENTALS OF INVESTING. 3 HRS.**
This course covers the various types of investment instruments, the organized exchanges (NYSE, AMEX and Regionals), the over-the-counter market, the international financial exchanges, mutual funds, portfolio management, setting and achieving financial goals.

FIREFIGHTING (FFT)

- 101. FIREFIGHTING I. 3 HRS.**
This course is an introduction to firefighting including the history of the fire service, organization of departments, the behavior of fire and firefighter safety.
- 102. FIREFIGHTING II. 3 HRS.**
This course focuses on the use of equipment in firefighting, building materials and construction; ladders, ropes, and knots, forcible entry and rescue as well as fire prevention.

FOREIGN LANGUAGES (FLAN)

- 297. SPECIAL TOPICS. 3 HRS.**
Special courses in foreign languages which are not taught on a regular basis.

FRENCH (FREN)

- 101. ELEMENTARY FRENCH 1. 3 HRS.**
Production of sounds of French; word order; common tenses; sentence patterns and vocabulary items. F-S
- 102. ELEMENTARY FRENCH 2. 3 HRS.**
Continuation of FREN 101. Emphasis on reading skills (Prerequisite: FREN 101 or equivalent.) F-S
- 203. INTERMEDIATE FRENCH 1. 3 HRS.**
Continuation of FREN 102. Reading skills; control of written and spoken language; grammar review; reading of short prose selections; vocabulary development. (Prerequisite: FREN 102 or equivalent.) F-S
- 204. INTERMEDIATE FRENCH 2. 3 HRS.**
Continuation of FREN 203. Longer reading materials; and more difficult selections; independent reading. (Prerequisite: FREN 203 or equivalent.) F-S

GENERAL BUSINESS (GBUS)

- 101. INTRODUCTION TO BUSINESS. 3 HRS.**
A study of forms of business organizations and the functions performed within the typical business organization. Social responsibility of business firms is also covered. [Business Core Course].
- 117. BUSINESS MATHEMATICS. 3 HRS.**
Topics such as interest computations, depreciation amounts, payroll calculations, determination of markups, inventory pricing and valuations, and basic tax computations are covered. This course is not available for credit toward the BSBA degree. (Prerequisite: placement test.)
- 202. BUSINESS COMMUNICATIONS. 3 HRS.**
Prepares the student to understand business communication in its ever-changing environment. Includes: business writing, business style, business memos, short and long reports, word usage, public speaking and business research methods. [Business Core Course]
- 220. PORTFOLIO DEVELOPMENT. 3 HRS.**
This course is designed to assist students in developing a portfolio that will be used to document life and work experiences. Format for the course will be flexible to meet the needs of the individual. The course is offered in e-course format. (Prerequisite: Admission to BOG AAS program, ENGL 102, CS 101.)
- 300. PRINCIPLES OF MANAGEMENT INFORMATION SYSTEMS. 3 HRS.**
This course covers the important features of management information structure and technology to business and managerial applications. It utilizes computer software for decision-making communication and advanced presentation. Emphasis is on MIS/DSS applications common to business environments. Communicating effectively with professional systems development groups will also be stressed. (Prerequisites: CS 101, MGMT 320)
- 304. ADVANCED EXCEL. 3 HRS.**
This course is an intensive study of spreadsheet software that requires students create, edit, and manage various spreadsheet functions using Microsoft Excel software. Topics covered will include: multiple worksheets, importing and exporting worksheets among users on a network and on the Internet, strategies for merging and integrating data from other applications, and creating what-if scenarios for business analysis and decision making. (Prerequisites: CS 101).

- 306. ADVANCED ACCESS. 3 HRS.**
This course is designed to provide the student with intermediate to advanced level knowledge and skills to develop, customize, and manage databases for company use. Upon completion of the course, the student will be able to use Microsoft Access software to manage databases including using web-generated data, Visual Basic Editor, and other advanced functions of the software. (Prerequisite: CS 101)
- 310. BUSINESS LAW 1. 3 HRS.**
An introduction to the Law and the Legal Process is followed by a study of the substantive law of torts, contracts, and agency. A research paper is a requirement in this course. (Prerequisites: Admission to BSBA or BASBA or instructor's consent.) [Business Core Course]
- 320. NEGOTIABLE INSTRUMENTS AND UCC. 1 HR.**
An introduction to the law and the legal process is followed by a study of substantive law of negotiable instruments, property, and the uniform commercial code.
- 322. BUSINESS ETHICS AND SOCIAL RESPONSIBILITY. 1 HR.**
A study of the ethical theories as they apply to the formation of value judgments in the field of business and industry.
- 324. BUSINESS ANALYSIS. 1 HR.**
Emphasis will be on analyzing financial statements and typical budget/expense reports.
- 325. QUANTITATIVE BUSINESS ANALYSIS. 3 HRS.**
Applies the statistical methods and theories covered in MATH 211. Decision making analysis based on case studies and simulation models is a major component of this course. (Prerequisite: MATH 211.) [Business Core Course]
- 326. OSHA IN THE WORKPLACE. 1 HR.**
A review of a number of historical and contemporary examples and illustrations wherein state and/or federal government agencies or courts imposed rules or regulations on segments of the business community.
- 370. PRINCIPLES OF PURCHASING. 3 HR.**
This course is an intensive study of the role of purchasing and materials management in a firm's ability to achieve its goals of providing high quality raw materials and supplies while containing costs. The course covers terminology and techniques used by purchasing and materials management personnel as well as legal and ethical issues of purchasing. (Prerequisite: GBUS 101)
- 371. BUSINESS LOGISTICS. 3 HR.**
A study of the policies, procedures, and problems encountered by the business manager in establishing and maintaining an effective distribution system. Students in this course also discuss the historical development of the transportation system in the United States and the present regulatory environment. (Prerequisite: MKTG 330)
- 372. CONTRACT ADMINISTRATION. 3 HR.**
This course is an intensive study of the contract administration area of purchasing. Students will explore the total process needed to ensure a fair and competitive environment for suppliers to place bids on purchasing packages. The course will cover the topics of developing clear and accurate specifications, pre-bid activities, various bidding processes, and evaluating bids for quality and cost containment. In addition, the concepts of financial management, labor-management relations, accounting, and the global aspects of contract administration will be studied. Social responsibility and ethical contract administration will be emphasized. (Prerequisite: GBUS 202 and GBUS 371)

- 405. GLOBAL BUSINESS.** **3 HRS.**
A study of the emergence of the "global economy" concept and its impact on business in the United States. International marketing channels, financial markets, management challenges and opportunities are covered in this course. (Prerequisite: Senior Status)
- 410. GOVERNMENT REGULATION OF BUSINESS.** **3 HRS.**
This course exposes students to a number of historical and contemporary examples and illustrations wherein state and/or federal government agencies or courts imposed rules or regulations on segments of the business community. Written and oral presentations are required in this course. (Prerequisite: GBUS 412.)
- 412. BUSINESS LAW 2.** **3 HRS.**
A sequel course in Business Law that covers the substantive law of Sales, Negotiable Instruments, Property, Bankruptcy, Wills and Trusts. Selected areas of government regulation of business are also covered. A research paper is a requirement in the course. (Prerequisite: GBUS 310.)
- 420. PORTFOLIO DEVELOPMENT SEMINAR.** **3 HRS.**
This course is designed to assist students in developing a portfolio that will be used to document life and work experiences. Format for the course will be flexible to meet the needs of the individual. The course is provided as an e-course. (Prerequisites: Admission to RBA program, ENGL 102, CS 101)
- 440. BUSINESS POLICY.** **4 HRS.**
This is the capstone course for students enrolled in the BSBA program. The course involves integration of key components of the business curriculum through lecture, case studies, and policy analysis in a wide variety of business policy decisions and issues. Classes may involve meetings with business managers, executives and administrators to discuss practical and contemporary issues in business decision and policy-making. (Prerequisite: Senior status, Admission to BSBA or BASBA program.)

GEOGRAPHY (GEOG)

- 102. WORLD GEOGRAPHY.** **3 HRS.**
Comparison and relationships of world regions. The interdependence of political, economic, social, cultural and physical aspects of the world regions and contemporary geographic issues addressed.
- 240. NORTH AMERICAN GEOGRAPHY.** **3 HRS.**
Students will study the spatial relationships between the geographic features such as climate, natural vegetation, topography, natural resources and physical landscape, also political, social, economic, and cultural systems in the United States and Canada.

GEOLOGY (GEOL)

- 101. PHYSICAL GEOLOGY.** **3 HRS.**
The physical, chemical, and biological processes that shape the Earth will be studied in light of the concept of global plate tectonics and the interaction of Earth's subsystem's (the lithosphere, biosphere, hydrosphere, and atmosphere). (3 lecture hours per week) F
- 102. PHYSICAL GEOLOGY LAB.** **1 HR.**
The laboratory study of rocks and minerals, interpretation of topographic and geologic maps, earth structures, earthquakes, economic resources, and local geology with field trips. (2 laboratory hours per week.) (Co-requisite: GEOL 101) F

- 103. HISTORICAL GEOLOGY.** **3 HRS.**
An introduction to the study of the origin of the Earth and its evolutionary development through time are presented. The concepts of geologic time, organic evolution, and plate tectonics are fundamental themes used to unravel Earth history. In this context, present and past interactions of Earth's subsystems (the lithosphere, biosphere, hydrosphere, and atmosphere) are studied (3 lecture hours per week) (Prerequisites: GEOL 101 and 102 or PSCI 112) (Co-requisite: GEOL 104) S

- 104. HISTORICAL GEOLOGY LAB.** **1 HR.**
The laboratory study of sedimentary rocks, fossils, correlation or rock units, interpretation of geologic maps, and local geology with field trips. (2 laboratory hours per week.) (Co-requisite: GEOL 103)

- 307. PALEOBIOLOGY OF DINOSAURS.** **3 HRS.**
This course will explore the evolution, history and paleobiology of dinosaurs from their appearance in the geologic record to their extinction. The course will also cover the relationship of dinosaurs to ancestral vertebrates of the Paleozoic era, and to the birds and mammals, two groups which emerged in the early Mesozoic era. Hypotheses dealing with the extinction (perhaps catastrophic) of the dinosaurs and other groups at the end of the Mesozoic era will also be studied. (Prerequisite: ENGL 101 and 102 and a 100 or 200 level Natural Science course.) S

- 310. FIELD STUDIES IN GEOLOGY.** **1-3 HRS.**
This is a field studies course that will have two primary focuses: 1) the study of the geologic history of a region of the U.S. and 2) the study and practice of geologic and paleontologic data collection (including fossils, rocks, and minerals) and the application of this data to paleontologic, stratigraphic, and sedimentologic interpretations of paleoenvironments. (Prerequisites: GEOL 101/102 or PSCI 112 or consent of instructor.) (Other information: Variable credit, 1-3 credit hours and repeatable to a maximum of 6 credit hours.) Su

GERMAN (GERM)

- 101. ELEMENTARY GERMAN 1.** **3 HRS.**
Written and spoken German; listening, speaking, reading, and writing. F-S
- 102. ELEMENTARY GERMAN 2.** **3 HRS.**
Continuation of GERM 101. Additional study of German language. (Prerequisite: GERM 101 or equivalent.) F-S
- 203. INTERMEDIATE GERMAN 1.** **3 HRS.**
Continuation of GERM 102. Emphasis on reading speed and comprehension. (Prerequisite: GERM 102 or equivalent.) F-S
- 204. INTERMEDIATE GERMAN 2.** **3 HRS.**
Continuation of GERM 203. Emphasis on reading speed and comprehension. (Prerequisite: GERM 102 or equivalent.) F-S

HEALTH, PHYSICAL EDUCATION AND RECREATION (HPER)

- 100. SPORTS SKILLS UNDERSTANDING.** **1 HR.**
Provides students with specific knowledge pertaining to physical fitness, golf, tennis and bowling. It is intended to develop a minimal amount of fitness for each student with emphasis on cardiovascular endurance, muscular strength, and flexibility. It is also intended to provide students with the basic knowledge of skills, rules, strategy and etiquette in the games of golf, tennis and bowling.

111-145. GENERAL ACTIVITY COURSES.**1 HR.**

The activity courses listed below are designed to acquaint the student with the fundamental skills necessary for maximum enjoyment of leisure time pursuits. Courses will be offered as interest dictates and as facilities are available. The one-credit hour classes meet a total of 32 class hours per semester. (An eight-week course meets 4 hours per week. A 16-week course meets 2 hours per week).

111 - Beginning Golf	121 - Basic Judo
113 - Beginning Tennis	122 - Advanced Judo
114 - Intermediate Tennis	123 - Karate
115 - Beginning Bowling	124 - Basic Aikido
116 - Advanced Bowling	136 - Beginning Yoga
119 - Beginning Volleyball	145 - Fitness - Aerobic Activities
120 - Advanced Golf	

148. FITNESS FOR LIFE.**1 HR.**

Provides students with specific knowledge pertaining to physical fitness, weight loss and relaxation. It is intended to develop a minimal amount of fitness for each student with emphasis placed on personal assessment and program development in the areas of cardiovascular strength and endurance, muscular strength and endurance, flexibility, diet and nutrition, and relaxation.

150-157. SPORTS OFFICIATING.**1 HR.**

These courses provide instruction and practice in officiating procedures within a clinical atmosphere. Topics include the prerequisites of good officiating, rule interpretation, and officiating mechanics. Each student will become a rated official.

150 – Officiating Football	154 – Officiating Softball
151 – Officiating Basketball	155 – Officiating Baseball
152 – Officiating Volleyball	156 – Officiating Wrestling
153 – Officiating Soccer	157 – Officiating Track

159. BEGINNING TABLE TENNIS.**1 HR.**

Knowledge and skills in table tennis.

167. INTRODUCTION TO PHYSICAL EDUCATION.**2 HRS.**

Introduction to the field of Physical Education. Provide students with a basic historical, biological, and sociological foundation of Physical Education. Students will be encouraged to develop introspection regarding their professional interests and talents in relation to Physical Education.

172. STANDARD FIRST AID.**2 HRS.**

Stresses the functional First Aid capabilities required to provide the initial emergency care necessary to sustain life and to maintain life support until the victims of an accident or sudden illness are cared for by qualified medical personnel. Opportunity for students to receive American Heart Association CPR certification. F-S

215. PERSONAL AND COMMUNITY HEALTH.**2 HRS.**

Emphasis will be placed on relating course content to lifestyle to foster a better understanding of the major health issues of today. Examinations will be made of the ways in which these issues have implications that not only deal with each individual but also with the community at large. Current issues include, but are not limited to: emotional health, chemical use and abuse, human sexuality, major diseases, physical fitness, nutrition, aging, death and dying. F-S

221. POLICE PHYSICAL AGILITY.**3 HRS.**

This course will acquaint students with the fundamental skills necessary to pass Police Agility Tests. Course designed to help students build upper body strength and the ability to run a two-mile course. For criminal justice majors only.

315. PHYSICAL EDUCATION SKILLS & INSTRUCTIONAL STRATEGIES.**3 HRS.**

This course will provide the student with a philosophy of elementary physical education. It will also provide techniques for curriculum design, program implementation and evaluation, plus other strategies, skills and methods of teaching physical education activities to elementary and middle school children. (10 hours of field work required). (Prerequisite: Admission to Teacher Ed. Program.) F-S.

HEATING, VENTILATION, AIR CONDITIONING/REFRIGERATION (HVAC/R)**101. INTRO TO HVAC/R ELECTRICAL CONTROL SYSTEMS, MODULE 1****1 HR.**

Discussion and application of electrical principles used in control systems, including Ohm's Law, transformers, power generation/transmission. F

102. INTRO TO HVAC/R ELECTRICAL CONTROL SYSTEMS, MODULE 2.**1 HR.**

Discussion and application of electrical devices and systems including meters, continuity, basic schematic symbols. F

103. INTRO TO HVAC/R ELECTRICAL CONTROL SYSTEMS, MODULE 3.**1 HR.**

Discussion and application of electrical devices and systems including basic wiring, troubleshooting, and simulation. F

111. INTRO TO HVAC/R HI-TEMPERATURE SYSTEMS, MODULE 1.**1 HR.**

Introductory discussion and application of HVAC/R High-Temperature systems topics including thermostat operations and wiring, safety controls, sub cooling and super heating. F

112. INTRO TO HVAC/R HI-TEMPERATURE SYSTEMS, MODULE 2.**1 HR.**

Introductory discussion and application of HVAC/R High-Temperature systems topics including thermostate operations and wiring, safety controls, sub cooling and super heating. F

113. INTRO TO HVAC/R HI-TEMPERATURE SYSTEMS, MODULE 3.**1 HR.**

Introductory discussion and application of HVAC/R High-Temperature systems topics including compressor types and characteristics. F

121. INTRO HVAC/R LOW-TEMPERATURE SYSTEMS MODULE 1.**1 HR.**

Introductory discussion and application of HVAC/R Low-Temperature systems including pressure and temperature charts, manifold gauges and components. F

122. INTRO HVAC/R LOW-TEMPERATURE SYSTEMS MODULE 2.**1 HR.**

Introductory discussion and application of HVAC/R Low-Temperature systems F

123. INTRO HAVC/R LOW-TEMPERATURE SYSTEMS, MODULE 3.**1 HR.**

Introductory discussion and application of HVAC/R Low-Temperature systems including filter dryers, lubricants and additives. F

131. ADVANCED SOLDERING/BRAZING/HANDLING/STORAGE MODULE 1.**1 HR.**

Introductory discussion and application of soldering, brazing and refrigerant storage and handling associated with HVAC/R Systems including hazards of refrigerants, basic soldering and brazing. F

132. ADVANCED SOLDERING/BRAZING/HANDLING/STORAGE 2.**1 HR.**

Introductory discussion and application of soldering, brazing and refrigerant storage and handling associated with HVAC/R Systems including EPA requirements, continuation of soldering and brazing. F

133. ADVANCED SOLDERING/BRAZING/HANDLING/STORAGE 3.	1 HR.
Introductory discussion and application of soldering, brazing and refrigerant storage and handling associated with HVAC/R Systems including recovery systems, basic refrigerant handling and storage. F	
201. ADVANCED HVAC/R ELECTRICAL CONTROL SYSTEMS, MODULE 1.	1 HR.
Advanced disussion and application of electrical devices and systems used in HVAC/R including complex schematics, heat pumps. F	
202. ADVANCED HVAC/R ELECTRICAL CONTROL SYSTEMS, MODULE 2.	1 HR.
Advanced disussion and application of electrical devices and systems used in HVAC/R including multi-stage systems, circuit design, and programming. F	
203. ADVANCED HVAC/R ELECTRICAL CONTROL SYSTEMS, MODULE 3.	1 HR.
Advanced disussion and application of electrical devices and systems used in HVAC/R including automation systems, zone systems, advanced troubleshooting. F	
211. ADVANCED HVAC/R HIGH-TEMPERATURE SYSTEMS MODULE 1.	1 HR.
Advanced disussion and application of HVAC/R High-Temperature systems including air flow and balancing. F	
212. ADVANCED HVAC/R HIGH-TEMPERATURE SYSTEMS MODULE 2.	1 HR.
Advanced disussion and application of HVAC/R High-Temperature systems including heat loss/gain calculations and Manual J. F	
213. ADVANCED HVAC/R HIGH-TEMPERATURE SYSTEMS MODULE 3.	1 HR.
Advanced disussion and application of HVAC/R High-Temperature systems including basic duct design, filter selection, system static pressure. F	
221. ADVANCED HVAC/R LOW-TEMPERATURE SYSTEMS MODULE 1.	1 HR.
Advanced disussion and application of HVAC/R Low-Temperature systems including trap placement effects of dirty filters and coils. F	
222. ADVANCED HVAC/R LOW-TEMPERATURE SYSTEMS MODULE 2.	1 HR.
Advanced disussion and application of HVAC/R Low-Temperature systems including receivers, accumulators and load calculations. F	
223. ADVANCED HVAC/R LOW-TEMPERATURE SYSTEMS MODULE 3.	1 HR.
Advanced disussion and application of HVAC/R Low-Temperature systems including psychometric charts, sizing of oil return traps, testing capacitors. F	
231. ADVANCED SOLDERING/BRAZING/HANDLING/STORAGE MODULE 1.	1 HR.
Advanced disussion and application of soldering, brazing and refrigerant storage and handling associated with HVAC/R systems including oil compatibility, EPA 608 certification and advanced brazing. F	
232. ADVANCED SOLDERING/BRAZING/HANDLING/STORAGE MODULE 2.	1 HR.
Advanced disussion and application of soldering, brazing and refrigerant storage and handling associated with HVAC/R systems compressor disassembly and failure diagnosis. F	
233. ADVANCED SOLDERING/BRAZING/HANDLING/STORAGE MODULE 3.	1 HR.
Advanced disussion and application of soldering, brazing and refrigerant storage and handling associated with HVAC/R systems including vacuum pumps, micron gauges and system evacuation. F	

HISTORY (HIST)

101. WESTERN CIVILIZATION THROUGH THE REFORMATION.	3 HRS.
An analytical survey of the major events from about 4000 B.C. to 1648. Emphasis upon the relationship between the past and the present wherever possible.	
102. WESTERN CIVILIZATION FROM THE REFORMATION.	3 HRS.
An analytical survey of the major events from 1648 to the present. Emphasis is placed upon the events as they reveal the intimate ties between the histories of Great Britain, France, Germany, Russia and the United States.	
152. U.S. HISTORY THROUGH THE CIVIL WAR.	3 HRS.
An analytical survey of the major events in United States history from 1492 through 1865. Attention is focused upon the intimate relationship between events occurring in the United States and those occurring elsewhere in the world. The parallels between past and present events are utilized wherever appropriate.	
153. U.S. HISTORY FROM RECONSTRUCTION TO THE PRESENT.	3 HRS.
An analytical survey of the major events in United States history from 1865 to present. Attention is focused upon the intimate relationship between events occurring in the United States and those occurring elsewhere in the world. The parallels between past and present events are utilized wherever appropriate. A lecture and/or discussion course.	
211. CONNECTIONS: A HISTORY OF TECHNOLOGY.	1-3 HRS.
An introduction to the history of technology centering on James Burke's television series, Connections: An Alternative View of Change.	
250. WEST VIRGINIA AND THE APPALACHIAN REGION.	3 HRS.
A course which deals with all phases of the state's history -- economic, cultural, social, and political in relationship to Appalachia, the nation and the world. (Prerequisites: HIST 152, HIST 153)	
307. REVOLUTIONARY EUROPE 1750 TO 1918.	3 HRS.
Traces European history from the reign of Louis XV to the end of the first world war, emphasizing the social, intellectual, and economic changes that produced the wars and upheavals of the era.	
309. TWENTIETH CENTURY EUROPE.	3 HRS.
Traces the major political, economic and social developments in Europe from 1918 to the present.	
333. NAZI GERMANY.	3 HRS.
A study of the National Socialists and their leader Adolph Hitler, with emphasis on the Nazi program and the forces that made it acceptable to so many. Examines Nazi take-over and domination of Germany, the origins and development of World War II, and the Holocaust.	
337. WORLD WAR II.	3 HRS.
Traces the coming, the course and the aftermath of the war as a global cataclysm, emphasizing the issues, the politics and ideology of the principal belligerents, and the profound global changes the war brought about	
445. HISTORY OF AMERICAN WOMEN.	3 HRS.
Examination of the history of American women from 1607 to the present, with emphasis on working conditions, women's rights, development of feminism, women's roles in war time and women in the family. (Prerequisites: HIST 152; HIST 153)	

INDUSTRIAL MAINTENANCE (IM)

- 111. MACHINE SHOP 1. 4 HRS.**
Use of power-operated machine shop equipment; safety practices and operating procedures; use of metal turning lathes, milling machines, shapers, saws and drills. (3 class hours and 2 lab hours per week.) F
- 112. MACHINE SHOP 2. 4 HRS.**
Metal fabrication required in building and maintaining industrial equipment. (3 class hours and 2 lab hours per week.) (Prerequisite: IM 111) S
- 121. BEARINGS AND LUBE. 3 HRS.**
Industrial bearings and their applications; industrial uses of petroleum. (3 class hours and 1 lab hour per week.) F
- 122. VALVES. 2 HRS.**
Involves a study of the design, application, and maintenance of various types of valves. S
- 131. PIPEFITTING. 4 HRS.**
Piping field sketching and solution of layout of piping systems. Pipe cutting, threading, bending and soldering. (3 class hours and 2 lab hours per week.)
- 132. SHOP FABRICATION. 4 HRS.**
Sketching, pattern making, layout, and assembly of parts from sheet metal. Development of elbows, tees, offsets and transitions. (2 class hours and 4 lab hours per week.)
- 213. MACHINE SHOP 3. 4 HRS.**
Fabrication of intricate parts to close tolerance and with the specified surface finish. (5 hour lecture/laboratory per week.) (Prerequisite: IM 112) S
- 214. MACHINE SHOP 4. 4 HRS.**
Continuation of IM 213. Working to close tolerance from detailed blueprints. (5 hour lecture/laboratory per week.) (Prerequisite: IM 213.) S
- 223. WOOD TECHNOLOGY. 3 HRS.**
Learn how to safely operate power saws, jointers, sanders, and routers. Learn how to work with wood joints, perform gluing, and finish wood surfaces.
- 233. PUMPS AND SEALS. 4 HRS.**
Application and Maintenance of pumps; seals and packing for rotary shafts.
- 234. HYDRAULICS. 3 HRS.**
Principles of hydraulic equipment, design, and maintenance. (3 class hours and 1 lab hour per week).
- 235. HYDRAULICS TROUBLE SHOOTING. 3 HRS.**
A five part study of trouble shooting industrial hydraulic system. The study will include Trouble Shooting Techniques, Heat & Leakage, Contamination, Analyzing Component Failure, and Applied Trouble Shooting along with hands on training. (Prerequisite: IM 234) S
- 244. MACHINERY INSTALLATION. 3 HRS.**
Installation of presses, pumps, and machine tools; aligning and leveling; use of tools and rigging for safely moving heavy equipment. (2 class hours and 2 lab hours per week.)

- 254. CNC MACHINING 1. 3 HRS.**
This course will teach students how to program computer-controlled milling machines. Conversational language will be used and G codes will be discussed. (Prerequisite: IM 111 or equivalent.) S
- 255. CNC MACHINING 2. 3 HRS.**
This course will teach students to program and run CNC Lathes and Milling Machines. Both G Code and conversational language will be included. No previous knowledge of computers is required. (Prerequisite: IM 111 or equivalent.)
- 260. MAINTENANCE PROJECTS. 2 HRS.**
This class is designed to provide an opportunity for students to use the skills already learned to do actual maintenance type work under the direction of an instructor. (Prerequisite: instructor's consent.) F-S

INDUSTRIAL TECHNOLOGY (INDT)

- 107. PRINCIPLES OF TECHNOLOGY 1. 3 HRS.**
Topics include common industrial engineering issues; fundamental concepts in problem solving and logic; problem solving in forces and energy.
- 108. PRINCIPLES OF TECHNOLOGY 2. 3 HRS.**
Topics include problem solving in gas laws, heat transfer, and basic AC and DC electricity. (Prerequisite: INDT 107)
- 111. PRINCIPLES OF SUPERVISION. 3 HRS.**
Topics include the four basic management functions of planning, organizing, leading, and controlling. This course is designed for those students undertaking the Technical Studies AAS - Management Supervision Emphasis.
- 120. INDUSTRIAL SAFETY. 2 HRS.**
Common workplace safety issues, regulations applicable to workplace safety, and sources of information about workplace safety. Students will be exposed to real-life settings through labs and/or plant visits.
- 143. HAZARDOUS MATERIALS. 3 HRS.**
Recognition and identification of the nine hazard classes as well as storage and transportation of materials. Risks associated with exposure and knowledge of the preparation of hazardous materials.
- 231. ENGINEERING ECONOMICS. 3 HRS.**
Basic concepts of financial analysis of capital investment planning and cost controls as they apply to business and industry investments. Concentration on the time value of cash flow. Business strategies and objectives will be examined along with critical success factors such as return on investment, return on assets and operating profit. Student projects will be undertaken to evaluate real-life projects and experiences. S
- 233. STATISTICAL PROCESS CONTROL. 3 HRS.**
Controlling the quality of goods produced; development of total quality control system; monitoring complete production cycle; control charts, sampling tablets, tolerances, and frequency distribution. Computer spreadsheets utilized. (Prerequisites: MATH 111 or MATH 126 and CS 101.) F
- 234. ADVANCED BUSINESS CONCEPTS. 3 HRS.**
Fundamentals and philosophy of total quality management and lean manufacturing in the industrial and service sectors. Principles of product flow, demand flow and just in time scheduling. Case studies or actual business turn-around experiences will be reviewed and critiqued. F

- 240. METHODS, STANDARDS, AND WORK DESIGN. 3 HRS.**
Principles and techniques of job analysis standardization, and formula construction; stop watch and micro-motion analysis of industrial operations; development of production and incentive standards. Human factor effects on productivity. Student projects will include evaluating actual work experiences. S
- 250. TEAM DYNAMICS AND PROBLEM-SOLVING TOOLS. 3 HRS.**
Learn the dynamics of successful team member interaction and team organization. Experience the use of problem solving techniques used in identifying problems and coming up with solutions.
- 270. PLANT LAYOUT AND MATERIAL FLOW. 3 HRS.**
Introduction to arrangement of a manufacturing facility relating material flow to proper equipment arrangement. S
- 310. HUMAN FACTORS ENGINEERING. 2 HRS.**
The study of the working environment, human capabilities, and equipment design. Systems design for human-machine environment interfaces with emphasis on health, safety, and productivity. F
- 312. DESIGNING FOR OSHA. 1 HR.**
Review of OSHA regulations and the impact on workplace design. F
- 340. METHODS, STANDARDS AND WORK DESIGN 2. 3 HRS.**
Principles and techniques of job analysis, standardization, and formula construction; stop watch and micro-motion analysis of industrial operations; development of production and incentive standards. Human factor effects on productivity. Student projects will include evaluating actual work experiences. S
- 350. TEAM DYNAMICS AND PROBLEM-SOLVING 2. 3 HRS.**
Learn the dynamics of successful team member interaction and team organization. Experience the use of problem solving techniques used in identifying problems and coming up with solutions. Experience working with a team on a project.
- 370. ADVANCED FACILITIES LAYOUT & DESIGN. 3 HRS.**
The whole system concept of manufacturing, office, and distribution will be reviewed. Alternative layouts, design strategies, and flow lines will be analyzed.
- 420. PROJECT CONCEPTION AND DEFINITION. 1 HR.**
This course is the first in the project management series; this project planning phase answers the "what" and the "why" of project implementation. Emphasis is on development of ideas, defining observable implementation goals & objectives, and documenting the project prior to design, justification, and implementation. (Prerequisite: Senior status; Co-requisites: INDT 422 and 424) F
- 422. PROJECT ECONOMICS AND JUSTIFICATION. 2 HRS.**
This course is the second in the project management series; this project planning phase answers the "why" and the "how much" of project implementation. Emphasis is on basic concepts of financial analysis investment planning and cost controls as they apply to management technology investment in manufacturing; financial justification, planning and budgeting as applied to an engineering function. (Prerequisites: Senior status; Co-requisites: INDT 420 and 424.) F
- 424. PROJECT ORGANIZATION AND IMPLEMENTATION. 2 HRS.**
This course is the third in the project management series; this project planning phase answers the "how" and the "who" of project implementation. Emphasis is on examining the nature of project implementation. Learning the steps of successful project implementation: defining the project and objectives, organizing the implementation, defining the resources required, determining the critical path, defining follow up techniques, and reviewing previous projects in order to improve implementation of future endeavors. (Prerequisites: Senior status; Co-requisites: INDT 420 & INDT 422) F

- 431. ENGINEERING ECONOMICS 2. 3 HRS.**
Basic concepts of financial analysis of capital investment planning and cost controls as they apply to technology investment in manufacturing. Concentration on the time value of cash flow. Business strategies and objectives will be examined along with critical success factors such as return on investment, return on assets and operating profit. Student projects will be undertaken to evaluate real-life projects and experiences. S
- 434. ADVANCED BUSINESS CONCEPTS 2. 3 HRS.**
Fundamentals and philosophy of total quality management and lean manufacturing in the industrial and service sectors. Principles of product flow, one-piece flow, demand flow and just-in-time scheduling. Case studies or actual business turn-around experiences will be reviewed and critiqued. Student projects will be undertaken to evaluate real-life projects and experiences. (This course is designed for students undertaking the Bachelor of Applied Technology degree who have not taken INDT 234.) F
- 460. INTERDISCIPLINARY PROJECTS. 3 HRS.**
An investigation of an actual or experimental situation; may involve the design, construction, and testing of an experimental apparatus. Students will be assigned to a multiple-disciplinary project team. (Prerequisites: INDT 420, INDT 422, INDT 424 and senior status) S

JAPANESE (JAPN)

- 101. ELEMENTARY JAPANESE 1. 3 HRS.**
Conversational Japanese with an equal emphasis on speaking, listening, reading, writing and culture. F-S
- 102. ELEMENTARY JAPANESE 2. 3 HRS.**
Continuation of Japanese 101. Conversational Japanese with an emphasis on speaking, listening, reading, writing, and culture. (Prerequisite: JAPN 101 or equivalent) F-S
- 203. INTERMEDIATE JAPANESE 1. 3 HRS.**
Continuation of Japanese 102. Conversational Japanese with an emphasis on speaking, listening, reading, writing, and culture. (Prerequisites: JAPN 102 or equivalent.) F-S
- 204. INTERMEDIATE JAPANESE 2. 3 HRS.**
Continuation of Japanese 203. Conversational Japanese with an emphasis on speaking, listening, reading, writing, and culture. (Prerequisites: JAPN 203 or equivalent.) F-S

JOURNALISM (JOUR)

- 101. INTRODUCTION TO MASS COMMUNICATIONS. 3 HRS.**
Critical overview of mass media including publishing, advertising, newspaper, public relations, magazines, broadcasting. F-S
- 102. INTRODUCTION TO VIDEO DOCUMENTARY PRODUCTION. 3 HRS.**
An introduction to the technical and aesthetic aspects of producing video documentaries and to the relevance of this subject to journalism. Student will use hands-on projects to explore the documentary process and will review one another's work.
- 112. PRINTING PROCESSES. 3 HRS.**
Survey of the graphic arts industry and its printing procedures including xerography, offset, screen, web, gravure, and flexography. F

215. MEDIA WRITING. 3 HRS.
Introduction to the fundamental writing and fact-gathering skills of journalism for print and electronic media. F-S

220. PHOTOGRAPHY. 3 HRS.
Cameras, composition, film processing, enlarging, lighting, and finishing; news photography; picture editing. (Student must provide own camera.) F-S

225. NEWSPAPER PRODUCTION 1. 3 HRS.
Photography, reporting, layout, and paste-up of college newspaper in informal lab setting. (Pre/Co-requisite: JOUR 215, 220, 318, 410.)

226. NEWSPAPER PRODUCTION 2. 3 HRS.
Continuation of JOUR 225. Students will assume editorial leadership of the college newspaper. (Prerequisite: JOUR 225.)

318. NEWS REPORTING. 3 HRS.
Essentials of news gathering and writing, beat assignment reporting, interviewing and specialized reporting. Overview of ethics and legal issues. Course focus is print journalism. (Prerequisite: JOUR 215.) F-S

410. GRAPHIC DESIGN. 3 HRS.
Creative and practical aspects of typography, layout, and design; preparation of comprehensive and camera-ready layouts with use of desk-top publishing. S

LANGUAGE ARTS (LA)

065. PRACTICAL READING & WRITING. 3 HRS.
Designed to prepare students for subsequent developmental reading and/or writing courses. Emphases are active reading, accurate literal comprehension, writing to learn, and the clear, correct written expression of ideas, especially at the sentence level. May be repeated twice for credit. (Prerequisite: placement test score that indicates either ENGL 049 or READ 009)

301. LANGUAGE ARTS. 3 HRS.
The study of language development and the strategies for language arts instruction in early and middle-childhood education. The course acquaints students with the whole language approach in an integrated language arts program. (Prerequisites: ENGL 131 or 132; 403; admission to Teacher Education.) (Co-requisite: Field Experience)

302. READING/LANGUAGE ARTS FOR MIDDLE SCHOOL. 3 HRS.
Students learn relationships among thinking, learning and the six language arts; includes explanation of principles that guide instruction and determine appropriate assessment and use of technology in the language arts. Identifies characteristics and the five systems of language. (Prerequisite: Admission to Teacher Education) (Co-requisite: Field Experience) S

MAINFRAME COMPUTER TECHNOLOGY (MCT)

315. INTERMEDIATE JCL. 1 HR.
This is an introductory course to teach mainframe JCL concepts.

350. MAINFRAME BASICS. 3 HRS.
An introductory course on Mainframe computing on the IBM zSeries platform. (Prerequisites: Grade of C or better in CIT 211; instructor permission.) F

355. MAINFRAME NETWORKING 3 HRS.
An in-depth review of the concepts of mainframe-based data communications, methods of implementing TCP/IP and SNA on z/OS, basic skills in network operations, security, and problem determination. (Prerequisites: Grade C or better in MCT 350.) F

450. MAINFRAME LINUX 3 HRS.
An introduction introduces into the major functions and capabilities of Linux on a zSeries platform. (Prerequisites: Grade of C or better in MCT 350, CIT 240) S

455. MAINFRAME SECURITY 3 HRS.
This course covers the concepts of mainframe-based security. (Prerequisites: Grade of C or better in MCT 350, MCT 355.) S

460. CAPSTONE PROJECT. 3 HRS.
An investigation of an actual or experimental situation, and may include the design, construction, and testing of an experimental, comprehensive scenario demonstrating mastery of Mainframe topics covered in previous classes. (Prerequisites: Grade of C or better in MCT 450.) (Co-requisites: MCT 455.) S

MANAGEMENT (MGMT)

214. PERSONNEL SUPERVISION. 3 HRS.
Leadership skills, employee development and evaluation, communication skills, and selected employer-employee current issues are the major topics covered herein. The credits earned in this course are not applicable toward the BSBA degree.

231. ADMINISTRATIVE MANAGEMENT. 3 HRS.
Principles and practices of contemporary office management. Space allocations, ergonomics, communications, information systems analysis, and employee procedures and policies are among the topics covered in the course. The credits earned in this course are not applicable toward the BSBA degree.

310. SMALL BUSINESS MANAGEMENT. 3 HRS.
This course offers several approaches to the study of small business management. The traditional approach whereby students are exposed to the various functional areas of the business enterprise and the functions are discussed as part of this course. (Prerequisite: MGMT 320)

320. PRINCIPLES OF MANAGEMENT. 3 HRS.
Students in this course are introduced to the functions of management: planning, organizing, staffing, directing, and controlling. In addition, the functions of the manager, to include coordinating, are explored. (Prerequisite: Business Core Course)

322. ORGANIZATIONAL BEHAVIOR. 3 HRS.
Business organizations as social systems are studied. The relationship of the employee and the organizations is covered too. Authority, communications, discipline, informal organizations, job satisfaction, and motivation are collateral subjects. (Prerequisite: MGMT 320.)

333. HUMAN RESOURCE MANAGEMENT. 3 HRS.
The organization and role of the personnel function in business and non-business entities are explored and discussed. Specifically, job analysis, employment procedures, compensation, employee training programs, employment regulations, and collective bargaining are topics considered in depth. (Prerequisite: MGMT 320.)

338. LABOR RELATIONS. 3 HRS.
The development of labor organizations and the process of collective bargaining are the primary topics covered in this course. Collateral concerns include arbitration, grievance procedures, mediation, the NLRB, and selected statutes governing labor relations. (Prerequisite: MGMT 320.)

349. MANAGEMENT TRAINING: MANAGEMENT INSTITUTE LEVEL I. VARIABLE HRS.

Information and hands-on experience for first-line manager; leadership characteristics and styles; problem solving; motivating employees; performance review; stress management; participatory management; business writing.

351. MANAGEMENT TRAINING: MANAGEMENT INSTITUTE LEVEL II. VARIABLE HRS.

Fiscal and decision-making responsibilities of managers at mid-level; executive leadership; financial statements; negotiations; planning; executive development; meetings; service and quality; winning presentations.

401. PRODUCTION AND OPERATIONS MANAGEMENT. 3 HRS.

The focus is on the organization of the production function in the business enterprise and the relationship with other functional areas of the enterprise. (Prerequisites: MGMT 320 and GBUS 325.)

410. ESSENTIALS OF LEADERSHIP. 3 HRS.

This course explores the nature, function, and importance of the leadership process in organizations and society. Topics studied include leader-follower relationships, leadership styles, and the development of current theories that help managers determine the "best" style of leadership to use based on situational analysis. A thorough review of the literature and research surrounding leadership will help the student find his/her leadership strengths and understand the source of leader strengths (nurture or nature). A service learning component may be required for this course.

MARKETING (MKTG)**215. PRINCIPLES OF ADVERTISING. 3 HRS.**

The organization of the advertising agency; the in-house advertising department, and the relationships between external and internal advertising functions are studied. The role of advertising in the success of the business organization is analyzed. (Prerequisite: MKTG 330.)

313. INTRODUCTION TO SALES AND SERVICES. 3 HRS.

Topics covered in this course include prospecting, presenting, closing, and follow-up steps in the sales process. Students will be oriented to developing customer needs, choice of markets, sales management techniques, and legal considerations bearing on selling. (Prerequisite: MKTG 330.)

330. PRINCIPLES OF MARKETING. 3 HRS.

The flow of goods and services from the producer to the consumer is studied. The roles of advertising, distribution, market research, product development, promotion, salesmanship, and social issues are analyzed, too. (Prerequisite: GBUS 101.) [Business Core Course]

341. ADVANCED ADVERTISING. 3 HRS.

An analysis of the principles and practices businesses adopt as part of their promotional mix options including advertising, personal selling, and sales promotions. Other forms of promotional communication will be explored from the perspective of the consumer, business, and macro-environment. (Prerequisite: MKTG 330.)

351. PRINCIPLES OF RETAILING. 3 HRS.

A study of the structure and function of retailing; and, the special demands on the business person who elects to work in business at the retailing level. (Prerequisite: MKTG 330.)

371. BUSINESS LOGISTICS. 3 HRS.

A study of the policies, procedures, and problems encountered by the business manager in establishing and maintaining an effective distribution system. Students in this course also discuss the historical development of the transportation system in the United States and the present regulatory environment. (Prerequisite: MKTG 330.)

401. MARKETING RESEARCH. 3 HRS.

An introduction to research methods with emphasis on compilation, analysis, and interpretation of data used in the planning and control of marketing operations. (Prerequisite: MKTG 330 and MATH 211.)

403. MARKETING MANAGEMENT. 3 HRS.

An applied course in Marketing Management wherein students deal with specialized marketing problems including marketing functions and policies. Case studies cover product lines, brands, pricing policies, promotional techniques, and related problem areas in marketing. (Prerequisite: MKTG 330.)

MATHEMATICS (MATH)**011. ARITHMETIC. 3 HRS.**

Whole number operations and rational numbers; fractions, decimals, percentages, proportions, and applications. Credit does not apply for graduation. (Prerequisites: READ 079 or 080 or concurrent with MATH 011, or satisfactory score on placement test.) F-S-Sum

021. ELEMENTARY ALGEBRA. 4 HRS.

Fundamental properties of real numbers, real number arithmetic; linear equations and formulas; slope, equations of lines and graphing lines; laws of exponents; polynomials, factoring and quadratic equations. (Prerequisite: MATH 011, satisfactory score on placement test; READ 079 or 080 or concurrent with MATH 021.) Credit does not apply for graduation. F-S-Sum

022. INTERMEDIATE ALGEBRA. 4 HRS.

Continuation of MATH 021. Linear and quadratic equations and inequalities, absolute value equations and inequalities, algebraic fractions, 2x2 and 3x3 systems of linear equations; and complex numbers. (5 lecture hours per week.) (Pre-requisite: C or better in MATH 021 AND READ 079 or 080 or satisfactory score on placement test, or consent.) (Requires TI 82 graphing calculator.) F-S.

107. SHOP MATH 1. 3 HRS.

Applications involving fractions and decimals; shop measuring devices; percentages; area and volume; algebraic equations. (Prerequisite: satisfactory score on placement test) F

108. SHOP MATH 2. 3 HRS.

Continuation of MATH 107. Geometric constructions; work, power, energy, and stress formulas; right triangle trigonometry; pulleys and gears; mathematics used in electrical shop and machine shop. (Prerequisite: C or better in MATH 107.) S

111. TECHNICAL MATH 1. 4 HRS.

Solving and graphing linear and quadratic equations; systems of equations; trigonometry of triangles; vectors; function concepts. (Prerequisite: satisfactory score on placement test.) F, S

112. TECHNICAL MATH 2. 4 HRS.

Continuation of MATH 111. Exponential and logarithmic functions; higher order polynomials; complex numbers; analytic geometry; matrices; and determinants. (Prerequisite: C or better in MATH 111.) S

120. CONCEPTS OF COLLEGE MATH . 4 HRS.

A study of elementary mathematical topics including arithmetic, algebra, sets, logic and concepts of length area, volume and coordinate geometry. This course meets the math requirement for students seeking the Associate Degree in Early Education. (Prerequisite: satisfactory score on placement test.) S

- 121. INTRODUCTION TO MATHEMATICS.** **3 HRS.**
A survey of mathematical topics including Euclidean geometry, set theory, number theory, numeration, techniques of problem solving, probability & statistics and the history of mathematics. (Prerequisite: satisfactory score on placement test) F-S
- 126. COLLEGE ALGEBRA.** **3 HRS.**
Quadratic equations; quadratic type equations; radical equations; rational equations; linear, nonlinear and absolute value inequalities; function concepts; graphing; linear functions and applications; polynomial functions; rational functions; exponential and logarithmic functions; systems of equations using Gaussian elimination; matrix theory and determinants. (4 lecture hours per week.) (Prerequisite: satisfactory score on placement test) F-S
- 128. COLLEGE TRIGONOMETRY.** **3 HRS.**
Degree and radian measure, right and oblique triangles, vector applications, graphing, inverse trigonometric functions, identities and conditional trigonometric equations and applications. (Prerequisite: satisfactory score on placement test) F-S
- 129. PRE-CALCULUS MATH.** **4 HRS.**
Algebra, analytic geometry, and trigonometry necessary for study of calculus. (Prerequisites: satisfactory score on placement test or C or better in MATH 128) S and other times on demand.
- 141. FINITE MATH.** **3 HRS.**
Logic, sets, counting principles, vectors, matrices, probability theory, linear programming, applications. (Prerequisite: C or better in MATH 128) On Demand.
- 150. INTRODUCTION TO CALCULUS.** **3 HRS.**
For students in other disciplines needing calculus for applications. Limits of sequences and functions, continuity, derivatives, and integrals of polynomials, rational functions, and exponential and logarithmic functions, partial derivatives, maxima and minima. (Prerequisites: C or better in MATH 126 or MATH 129) S
- 155. CALCULUS 1.** **4 HRS.**
Limits, continuity, derivatives and applications, properties of the definite integral, and applications. (5 lecture hours per week.) (Prerequisites: C or better in MATH 126 and 128 or MATH 129; or placement test) F
- 156. CALCULUS 2.** **4 HRS.**
Continuation of MATH 151. Derivatives and integrals of logarithmic, exponential, and trigonometric functions, techniques of integration; polar coordinates; series. (5 lecture hours per week.) S (Prerequisite: C or better in MATH 155.)
- 211. STATISTICS.** **3 HRS.**
Descriptive and inferential statistics, descriptive measures, probability, random variables, discrete and continuous probability distributions, expected value. The central limit theorem, confidence intervals, tests of hypothesis, chi-square test, regression and correlation. (Prerequisite: satisfactory score on placement test) F-S-Su
- 230. INTRODUCTION TO EUCLIDEAN GEOMETRY.** **3 HRS.**
Fundamental concepts of plane & solid Euclidean Geometry including points, lines, space, construction proofs, transformation, area formulas, volume formulas, polygons, circles, coordinate geometry and triangle ratio. (Prerequisites: C or better in MATH 126.) F
- 251. CALCULUS 3.** **4 HRS.**
Vector products; linear transformations; matrices and determinants; vector differential calculus; line and surface integrals; double and triple integrals; Green's Theorem; Stoke's Theorem; Fourier Series and Integrals. (Prerequisite: C or better in MATH 156.) F

- 261. CALCULUS 4.** **4 HRS.**
Ordinary differential equations; Laplace transforms; partial differential equations with emphasis on engineering and scientific applications. (Prerequisite: C or better in MATH 251.) S
- 301. INSTRUCTIONAL STRATEGIES IN MATHEMATICS.** **3 HRS.**
Methods and content with respect to real numbers, algebra, geometry, graphing, problem solving, measurement, probability and statistics. (Prerequisites: C or better in MATH 121, MATH 126 and Admission to Teacher Ed Program.) (Co-requisite: Field Experience.) F-S
- 302. MATH STRATEGIES GRADES 7-ALGEBRA I.** **2 HRS.**
This course is designed for senior education majors seeking a math specialization. Curricula and methods at the middle school levels are studied. Laboratory and field experiences will occur, along with the use of current technology. (Prerequisites: Admission to Teacher Education Program, completion of all mathematics requirements.) (Co-requisite: Field Experience) F
- 303. DIAGNOSTIC & PRESCRIPTIVE MATH.** **2 HRS.**
Methods and content with respect to primary grade mathematics. Focus will be on error analysis and guidance for assessment and preventive teaching (Prerequisites: Admission to Teacher Education Program, MATH 301, EDUC 320) Co-requisite: Field Experience) F
- 304. MEDIA AND COMMUNICATION FOR MATH.** **2 HRS.**
Explores available technology, its uses in the primary mathematics classroom, study and critical evaluation of manipulatives, and develops avenues of communication with peers, families, and community leaders to foster school-based partnerships focusing on mathematics. (Prerequisites: Admission to Teacher Education Program, MATH 301, MATH 303).
- 315. INTRODUCTION TO MODERN ALGEBRA.** **3 HRS.**
An introduction to abstract algebra and modern mathematical thinking. Topics include: group properties, sub-groups, Lagrange's Theorem, cosets, permutations, normal sub-groups, homomorphisms, and rings. (Prerequisites: C or better in MATH 126, MATH 121) S
- 324. INTERMEDIATE STATISTICAL METHODS.** **3 HRS.**
Extension of basic concepts of statistical inference: descriptive methods in linear regression and correlation, inferences for two population means, sampling distributions, estimation, hypothesis testing, non-parametric statistics, proportions, and hypothesis testing for more than two populations. (Prerequisites: C or better in MATH 211) S

MECHANICAL TECHNOLOGY (MECH)

- 135. MANUFACTURING PROCESSES AND MATERIALS.** **3 HRS.**
A survey of the fundamentals of manufacturing processes and materials. Materials testing and measuring equipment. F
- 201. TECHNOLOGY FLUID MECHANICS.** **2 HRS.**
Principles of fluid statics and dynamics; related methods for design calculations. (2 lecture hours and 2 lab hours per week.) (Prerequisites: MATH 111 or MATH 126). F
- 201L. TECHNOLOGY FLUID MECHANICS LAB.** **1 HRS.**
Coordinates exercises with lecture topics. F
- 202. TECHNOLOGY STATICS.** **3 HRS.**
Rigid bodies and structural force analysis; resolution of forces; component analysis of forces; concurrent and non-concurrent forces; coplanar and noncoplanar forces; friction; equilibrium; construction free body diagrams. (Prerequisites: MATH 111 or MATH 128.) F

203. TECHNOLOGY DYNAMICS. 3 HRS.
Bodies in motion; calculation of velocities about instantaneous centers; applications of Newton's Laws of Motion in determination of trajectories and forces arising from motion. (Prerequisite: MECH 202.) S

230. TECHNOLOGY STRENGTH OF MATERIALS. 3 HRS.
Stresses and strains of bodies in tension, compression, and shear. (Prerequisite: MECH 202.) S

MULTI-CRAFT TECHNOLOGY (MTEC)

101. MULTI-CRAFT TECHNOLOGY ORIENTATION. 1 HRS.
Review the maintenance technology program and the skill-set certificates. Visit labs to relate the program to actual applications and experiences offered in the program. Visit local businesses using maintenance personnel. Students will define the program that they want to pursue based on their targeted employer(s).

110. PRINT AND SCHEMATIC READING. 4 HRS.
The basics of mechanical prints, schematics for electrical/electronic circuits, hydraulic, pneumatic circuits, and piping schematics.

112. WORKPLACE SAFETY. 3 HRS.
Safety topics will include **ALL** OSHA General Industry safety requirements. Successful completion will result in the issuance of an OSHA 30 Hour Safety Card.

130. LUBRICATION PRINCIPLES. 2 HRS.
Learn about lubricating oils and greases - application, selection, and analysis. Review Machinery oil analysis fundamentals and methods.

132. FLUID MECHANICS BASICS. 2 HRS.
Hydraulics and pneumatic power systems.systems. Review the system concepts and operating systems.

133. FLUID MECHANICS TROUBLESHOOTING 2 HRS.
Hydraulics and pneumatic power system troubleshooting and maintenance.

134. CENTRIFUGAL PUMPS. 4 HRS.
Design and function of centrifugal pumps. System characteristics and selection; operation, and maintenance; and troubleshooting.

136. INDUSTRIAL SEALS AND APPLICATIONS. 2 HRS.
Types, materials and properties of industrial seals. Gaskets and packings - inspection and installation. Mechanical face seals - troubleshooting and installation.

140. PIPEFITTING. 2 HRS.
Layout, cutting, threading, bending, and soldering

230. VALVE OPERATION. 1 HR.
Maintenance and troubleshooting.

232. WOOD TECHNOLOGY 3 HRS.
Learn how to safely operate power saws, jointers, sanders, and routers. Learn how to work with wood joints, perform gluing, and finish wood surfaces.

240. LASER ALIGNMENT. 1 HR.
Basics of using laser technology to align equipment.

241. MACHINE VIBRATION ANALYSIS. 2 HRS.
Techniques of vibration analysis and procedures to properly diagnose the condition of rotating equipment.

242. BASICS OF THERMOGRAPHY. 2 HRS.
Minimize downtime by predicting system equipment failure. Learn the basic steps of conducting a condition-based infrared monitoring program.

250. ELECTRICITY BASICS 1. 2 HRS.
Basic principles of electricity, AC circuits, series and parallel circuits, resistors, Ohm's Law, magnetism, electrical measurement, DC circuits.

251. ELECTRICITY BASICS II. 2 HRS.
Inductance and capacitance, AC current and measurement, capacitive circuits, inductive circuits, transformers, and turned circuits.

252. ELECTRICAL WIRING. 2 HRS.
Elements and applications of electricity.

254. ELECTRIC MOTORS AND MOTOR CONTROLS. 2 HRS.
Basics of bearing technology, types of rolling element bearings, bearing wear and life expectancy, installation and alignment, bearing lubrication and removal, and troubleshooting.

256. GENERATORS AND MOTORS. 4 HRS.
Motor alignment, AC motor control and current measurement, basic motor control and relays, overload relays and time delay relays, NEC (National Electrical Code), installing and troubleshooting control systems.

MULTI-DISCIPLINARY STUDIES (MDS)

492. CAPSTONE. 1 HR.
The MDS degree requires students to pick three minor areas of study. During the final semester of their senior year, they must participate in MDS capstone course as a means to incorporate all three disciplines into a senior project and/or internship with a presentation and research paper. (Prerequisite or co-requisite: ENGL 308.)

MUSIC (MUSI)

121. MUSIC THEORY 1. 4 HRS.
First in a developmental sequence of music courses designed to provide the music student with basic fundamentals necessary for advanced study. Sequence will integrate harmony, analysis, composition, ear training, and dictation, sight singing and keyboard fundamentals. Covers scales, modes, intervals, melody, triads and four-part harmonization. F

122. MUSIC THEORY 2. 4 HRS.
Continuation of MUSI 121 focusing on four-part harmonizations utilizing the dominant seventh, leading tone and diminished sevenths and secondary seventh chords, secondary dominants and modulation. Two- and three- part forms will also be examined. Course continues to develop student skills in ear training, sign singing and keyboard harmony. (Prerequisites: MUSI 121.) S

- 151. GUITAR FUNDAMENTALS.** **1 HR.**
Fundamentals of tone production, hand position, tuning, basic chords, finger picking, playing simple folk songs, and reading musical notation. F
- 152. VOCAL TECHNIQUES.** **1 HR.**
Fundamentals of singing; vocal production, breath control, style, interpretation, sight reading, diction, and literature. S
- 161. CLASS PIANO 1.** **1 HR.**
Piano skills for beginners; group instruction at electronic piano; keyboard familiarity; notation; chord progressions; transposition; improvisation; techniques; literature for solo and ensemble performance. F-S
- 162. CLASS PIANO 2.** **1 HR.**
Continuation of MUSI 161. Music reading; functional piano skills; theory; pop-jazz chords; literature from Baroque to contemporary; transposition; improvisation; simple accompaniment; solo and ensemble performance at electronic keyboards. (Prerequisite: MUSI 161 or audition.) F-S
- 163. CLASS PIANO 3.** **1 HR.**
Continuation of MUSI 162. Scales; arpeggios; chords; creative activities; technique; theory; sight reading; lead sheet reading; solo and ensemble literature from Baroque through contemporary periods. (Prerequisite: MUSI 162 with grade of C or audition.) F
- 164. CLASS PIANO 4.** **1 HR.**
Continuation of MUSI 163. Electronic and acoustic pianos used. All major and minor scales; arpeggios; sight reading; chord progressions; study and performance of intermediate piano literature. (Prerequisite: MUSI 163 with grade of C or audition.) On demand.
- 170. MUSIC APPRECIATION.** **3 HRS.**
Survey of music with emphasis on the masterworks of the Western tradition. Historical and theoretical concepts will be introduced. Attendance at live performances is a course requirement. Primary course objective is to provide a wide variety of listening experiences which promote development of a curiosity about, an enthusiasm for, and an employment of many types and styles of music. F-S
- 171-190. APPLIED MUSIC.** **1 HR.**
- | | |
|------------------|---------------------|
| 171 - Piano | 181 - Trumpet |
| 172 - Voice | 182 - French Horn |
| 173 - Guitar | 183 - Trombone |
| 174 - Organ | 184 - Baritone Horn |
| 175 - Percussion | 185 - Tuba |
| 176 - Flute | 186 - Violin |
| 177 - Oboe | 187 - Viola |
| 178 - Clarinet | 188 - Cello |
| 179 - Saxophone | 189 - Bass |
| 180 - Bassoon | 190 - Harp |
- Individual music instruction in above listed areas offered to all students and members of the community. Lessons scheduled at time of registration. Twelve 45-minute private lessons earn one college credit. Some lessons may be scheduled off campus. May be repeated for credit. (Prerequisite: Department Approval.)

- 191. COLLEGE CHORALE.** **1 HR.**
Select chamber choir which performs finest choral music of all periods and styles. Chorale presents a festive performance during the fall semester and tours West Virginia and surrounding states at the end of the spring semester. Auditions are held during first week of classes each semester. May be repeated for credit. (Prerequisite: Audition.) F-S
- 193. SYMPHONIC CHOIR.** **1 HR.**
Select choral group which performs with orchestra. Membership by audition. (May be repeated.)
- 195. WIND ENSEMBLE.** **1 HR.**
An instrumental ensemble which studies and performs standard wind ensemble literature. (May be repeated.) (Prerequisite: Permission.)
- 196. JAZZ ENSEMBLE.** **1 HR.**
An instrumental ensemble allowing the student to learn jazz styles and techniques. (May be repeated.) (Prerequisite: Permission.)
- 198. CHAMBER ORCHESTRA.** **1 HR.**
An instrumental ensemble which studies and performs standard chamber orchestra works. (May be repeated.) (Prerequisite: Permission.)
- 199. CHAMBER MUSIC.** **1 HR.**
Various small ensembles providing the student an opportunity to perform standard chamber music. (May be repeated.) (Prerequisite: Permission.)
- 221. MUSIC THEORY 3.** **4 HRS.**
Continuation of MUSI 122. Examines Neopolitan and augmented sixth chords, upper tertian chords, and chromatic harmony. Sixteenth and eighteenth century counterpoint will be introduced along with analysis of rondo, variation and sonata allegro forms. Course will continue to develop student skills in ear training, sight singing and keyboard harmony. (Prerequisites: MUSI 122.) F
- 222. MUSIC THEORY 4.** **4 HRS.**
Course is final semester of the music theory sequence. Examines music of the late nineteenth century but focuses primarily on compositional principles of the twentieth century. Course will continue to develop student skills in ear training, sight singing and keyboard harmony. (Prerequisite: MUSI 221.) S
- 241. CHORAL CONDUCTING & TECHNIQUES.** **3 HRS.**
Conducting and rehearsal techniques; conducting patterns, development of choral sound; singers' diction; selection of repertoire; analysis of musical score; performance problems. On demand. (Prerequisite: Permission.)
- 270. HISTORY OF WESTERN MUSIC 1** **3 HRS.**
This course surveys the art music of Western Europe and the New World from the notated music and writings of the ancient Greeks through the Classical period.
- 271. HISTORY OF WESTERN MUSIC 2** **3 HRS.**
This course surveys all of the musical traditions, languages, and repertoires that are currently cultivated in the United States, beginning with the European music from around 1770 and the musical traditions of West Africa.
- 291. MUSICAL THEATRE WORKSHOP.** **1-3 HRS.**
College musical theatre production. (Same as THEA 291; may be repeated.) S

311. AMERICAN MUSIC.**3 HRS.**

American Music is a survey of the varied musical traditions, both historical and sociological, found in the United States. Topics include folk and ethnic music, jazz, blues, rock, country, sacred, musical theatre, concert music, and regional styles. (Prerequisite: ENGL 102.)

312. AMERICAN MUSICAL THEATRE.**3 HRS.**

American Musical Theatre is a survey that will examine masterworks of the genre and recent productions currently running on Broadway. Students will also attend and review live performances. This course does not meeting the general education fines arts requirement for any associate degree program. (Prerequisite: ENGL 102.) Su

315. INSTRUCTIONAL STRATEGIES IN MUSIC.**3 HRS.**

Using the West Virginia Music Program of Study and the National Standards for General Music Education as guides, students will explore the concepts of melody, harmony, form, rhythm, tempo, dynamics and timbre; learn effective lesson planning for music, and examine appropriate textbooks and materials. The philosophies of Orff, Kodaly and Dalcroze will be presented and experienced throughout the course providing a basis for an eclectic curriculum. Learning will be achieved primarily through participation in a wide variety of creative activities including singing, playing instruments, creative movement, games, listening and imagining. (Prerequisites: MUSI 170, EDU 300; Admission to Teacher Education Program; Co-requisite: Field Experience.)

NURSING (NURS)**101. ORIENTATION TO HEALTH CAREERS.****3 HRS.**

This course is designed specifically for students who are entering college and are interested in a career in health science. Theory presentation centers on the individual student's development of study skills that are consistent with predicting success in college. Key concepts include adaptation to the role of the student, organization, time management, study skills and communication represented within the context of health science careers. Learning activities include the investigation of career opportunities. (Credit may be earned for either NURS 101 or SDEV 101 but not both.) F-S

111. MEDICAL-SURGICAL NURSING 1.**9 HRS.**

This course introduces students to the concepts of basic needs of individuals necessary to maintain health. Students begin to apply the nursing process in caring for adult patients. Concurrent with the nursing process, the students use basic therapeutic communication skills in nurse-patient interactions. Professional nursing standards are examined in terms of legal issues, ethical considerations, and accountability. Nursing principles introduced here provide a basis for decision making in subsequent nursing courses. Structured campus laboratory experiences provide the student with opportunity to practice technical skills prior to patient contact. The clinical component provides opportunity for each student to apply these skills in caring for adults with common, well-defined health problems in acute and long term care centers. (5 lecture hours; 2 campus lab hours, 9 clinical lab hours per week) (Prerequisite: Admission to program; pre or co-requisite BIOL 107.) F-S

112. MEDICAL-SURGICAL NURSING 2.**9 HRS.**

This course introduces psychosocial and physiological concepts common to the needs of adults. The nursing process and critical thinking are integrated to plan care for the patient with a common, well-defined medical-surgical health problem. Therapeutic communication skills are developed to enhance nurse-patient interactions. Information from natural and behavioral sciences and be utilized in formulating nursing care plans. Professional nursing standards will be identified when caring for patients with common, well-defined health care problems. Structured campus laboratory experiences provide the student with opportunity to practice technical skills prior to patient contact. The clinical component provides opportunity for each student to apply these skills to the care of adults with common, well-defined medical-surgical problems in acute care centers. (5 lecture hours, 2 campus lab hours, 9 clinical lab hours per week.) (Prerequisite: NURS 111, BIOL 107; pre or co-requisite BIOL 108.) F-S

116. ENRICHMENT COURSE FOR LPN'S.**2 HRS.**

This transitional course for qualified licensed practical nurses (LPN) addresses the differences in practice between the LPN and the registered nurse (RN). Content includes legal parameter of practice as identified by the West Virginia Code and professional standards as delineated by the American Nurses Association Code of Ethics and the National League for Nursing Associate Degree Competencies. Topics include role transition, the nursing process, therapeutic communications, prioritization of patient needs and delegation, and the teaching- learning process. Offered on demand. (Prerequisite: fulfillment of advanced standing criteria.)

131. PHYSICAL ASSESSMENT.**1 HR.**

This course, designed for basic nursing students, provides concentrated experiences in developing proficiency in non-invasive physical assessment skills: inspection, palpation, percussion and auscultation. Students practice use of appropriate terminology and documentation patterns of "normal" findings, with identification of deviations from normal. (Co-requisites: NURS 112, BIOL 108) F-S

213. FAMILY-CENTERED NURSING.**9 HRS.**

This course provides a composite picture of the fundamental nursing needs of the family from inception through old age. The focus of this course is the special needs of the individual as a member of the child-bearing family and community from conception through early adulthood and unique mental health responses to developmental and situational crisis. The integration of these concepts benefit student learning by increasing emphasis in interpersonal skills, especially communication, with clients throughout the life span. (5 lecture hours, 12 clinical hours per week) (Prerequisites: BIOL 108, NURS 112 or NURS 116, NURS 231, PSYC 101, PSYC 241, ENGL 101.) F-S

216. MEDICAL-SURGICAL NURSING 3.**9 HRS.**

This course surveys the management of adults experiencing acute and complex health problems. The emphasis is on adults requiring restorative care for life-threatening problems and rehabilitative and health maintenance care for chronic lifelong problems. The nursing process is used as an organizing framework. Therapeutic communication skills are adapted to meet the special needs of patients and a focus is maintained on patient and family education to promote self-care. The student is expected to be self directed in the application of theoretical information in clinical situations with continued focus on the development of organizational skills and the use of critical thinking to create innovative nursing care approaches for multiple patients. (5 lecture hours, 12 clinical hours) (Prerequisites: NURS 213.) F-S

217. NCLEX - RN REVIEW.**1 HR.**

This course is intended to assist nursing students with the preparation for the National Council Licensure Examination for Registered Nurses and Computer Adaptive Testing. Students will answer test questions and review rationale after completing the examinations. Structured classroom discussions will lead students to new ways to approach the NCLEX questions successfully. (Prerequisites: NURS 112) (Co-requisites: NURS 213 or 216.) F-S

224. PERSPECTIVES OF NURSING.**2 HRS.**

This course investigates the roles and responsibilities of the beginning associate degree registered nurse as a manager of care. It identifies dynamic trends in health care delivery and stresses the management process, communication with the health care team, patient advocacy, standards of practice, delegation, ethical decision-making and professional opportunities and responsibilities. (Prerequisites: Completion of all 100 level Nursing courses.) F-S

230. DECISION-MAKING IN NURSING.**3 HRS.**

Developed as a special interest elective for nursing students, this course is designed to augment the nursing core by investigating critical thinking approaches to decision-making situations in nursing practice. Integration of reflective thinking, creativity and writing skills are reinforced by innovative teaching-learning methods, culminating in the creation of a team research project. (Prerequisite: Admission to RN to BSN program.)

281. PHARMACOLOGY FOR NURSES. 3 HRS.

This course assists the student to examine the practical aspects of pharmacology in relation to daily nursing practice in the health care environment. The content is presented according to body systems approach. Mechanism of action, indications, dosage, availability of drugs, drug interactions, and special nursing consideration will be considered for each classification. Emphasis will be placed on providing current clinical information to enable the student to understand the rationale for drug therapy management. On Demand. (Prerequisite: Admission to RN to BSN program.)

455. INTERVENTIONS: CAPSTONE. 1 HRS.

This course provides a capstone experience for the synthesis of theoretical and practical knowledge acquired in the student's nursing career. It emphasizes critical thinking, ethical decision-making, and civic responsibility in the design and implementation of a service-learning project. (Prerequisite: Admission to RN to BSN Program)

461. PRINCIPLES OF EVOLUTION. 3 HRS.

Introduction to biologic evolution, including genetic change, the history and diversity of life, natural selection and other mechanisms of evolution, population studies, speciation, extinction, co-evolution, group behavior, and human evolution. (Prerequisites: BIOL 101, 102, 103, 104 and consent of instructor in addition the student must be classified as a junior or senior. Zoology and/or Botany would also be helpful (but not required as a prerequisite) as additional courses taken prior to this course. S

491. PROFESSIONAL FIELD EXPERIENCE. 2 HRS.

Prearranged experiential learning program, to be planned, supervised and evaluated for credit by faculty and field supervisors. Involves temporary placement with public or private enterprise for professional competence development.

PHARMACY TECHNICIAN (PTEC)**101. & 101L PHARMACY PRACTICE. 7 HRS.**

This course, designed for Pharmacy Technician students, introduces the concepts of basic pharmacy activities and the skills required to work in a clinical or community pharmacy. The students will use basic communication skills in interacting with instructors, patients and co-workers. Pharmacy practices will be examined in terms of symbols, language, abbreviations, legal issues, ethical considerations, and accountability. Pharmacy principals studied will provide a basis of practical understanding when working in a pharmacy. Structured campus laboratory experiences provide the student with an opportunity to practice technical skills. The clinical component provides opportunity for each student to observe and apply these skills in clinical and community pharmacies. (3 lecture hours; 2 campus lab hours; 9 clinical lab hours) (Prerequisite: Admission to the program) F

102. CLINICAL COMMUNITY PHARMACY. 4 HRS.

This course, designed for Pharmacy Technician students, provides hands on experience in hospital and community settings. The course provides general training necessary to interpret, prepare, label and maintain records of physicians' medication orders and prescriptions in a community pharmacy and a hospital environment. All training will be under the supervision of a licensed pharmacist. (Prerequisite: Admission to program) (12 hours clinical pharmacy) S

111. CALCULATIONS FOR PHARMACY TECHNICIANS. 2 HRS.

This course, designed for Pharmacy Technician students, includes reading, interpreting, and

solving calculations problems encountered in the preparation and distribution of drugs. This course also discusses the conversion of measurement with the apothecary, avoirdupois, and metric systems with emphasis on the metric system of weight and volume. Topics include ratio and proportion, percentage, dilution, and concentration, milliequivalent, units, intravenous flow rates, and solving dosage problems. (Prerequisite: Admission to program) S

112. PHARMACOLOGY I. 3 HRS.

This course, designed for Pharmacy Technician students provides study of the properties, reaction, and therapeutic value of the primary agents in the major drug classes. This includes understanding of pharmaceuticals for the major body systems. Students will develop knowledge of brand names as well as generic names of drugs. (Prerequisite: Admission to program) F

114 PHARMACOLOGY II. 3 HRS.

This course, designed for Pharmacy Technician students continues the study of the properties, reaction, and therapeutic value of the primary agents in the major drug classes. This includes understanding of pharmaceuticals for the major body systems. Students will develop knowledge of brand names as well as generic names of drugs. (Prerequisite: Admission to program) S

121. PHARMACY TECH CERTIFICATION REVIEW. 3 HRS.

This course, designed for Pharmacy Technician students is designed to prepare Pharmacy Technician students in reviewing for the national certification exam. This class will entail a comprehensive review for the areas that are covered on the exam. (Prerequisite: Admission to program) S

PARAMEDIC SCIENCE (EMED)**110. INTRODUCTION TO PARAMEDIC SCIENCE. 3 HRS.**

This course consists of entry level information to provide the student with the basic knowledge needed to understand the expectation and role of the EMT-P. The student will develop an understanding of the EMS system, radio communications, and the communication/documentation process. The student will be introduced to the preparatory core material, which includes: assessment, documentation, IV access, pharmacology, and medication administration. (Prerequisite: admission to program, current WV or OH EMT certification.) (Co-requisites: BIOL 109 or equivalent). Su

211. PARAMEDIC SCIENCE I. 12 HRS.

This course will review the preparatory core material, pathophysiology, assessment and management of medical patients with pulmonary and cardiovascular emergencies, IV access, pharmacology, drug administration, and both personal and radio communications. (8 lecture, 9 clinical hours per week, 15 hour seminar.) (Prerequisites: BIOL 109, EMED 110). F

212. PARAMEDIC SCIENCE II. 12 HRS.

Paramedic Science II builds on theory and skills learned from Paramedic Science I. The student in Paramedic Science II will learn new skills in assessing and appropriate interventions for Children and Maternal Mothers. (8 lecture, 9 clinical hours per week, 15 hour seminar.) (Prerequisite: EMED 211). S

PHILOSOPHY (PHIL)**111. INTRODUCTION TO PHILOSOPHY. 3 HRS.**

An introduction to the art of wondering. Designed for the student interested in clarifying one's own philosophy through the study of the discipline which, in Greek, means "the love of wisdom."

170. INTRODUCTION TO LOGIC. 3 HRS.
A comprehensive introduction to the art of making sense, that is critical thinking. Designed to improve one's reasoning abilities through study of the most common mistakes made in thinking.

231. WORKPLACE ETHICS. 3 HRS.
A study of the ethical theories and daily applications of ethics in the workplace. Includes value judgments, critical thinking, problem solving and decisions making guidelines.

308. PHILOSOPHY OF RELIGION. 3 HRS.
A study of the major philosophical problems associated with religion, with attention given such problems as the existence and nature of God, faith, religious truth, the nature of man, grounds of beliefs, immortality, etc.

346. INTRODUCTION TO ETHICS. 3 HRS.
An introduction to the major theories of ethics and values. In the light of such personal and social problems as morality, freedom, right and wrong, social and political responsibility, and the meaning of "good," the course asks how we ought to live in relationship to contemporary moral issues.

PHYSICAL SCIENCE (PSCI)

111. INTRODUCTION TO PHYSICAL SCIENCE. 4 HRS.
An introduction to the basic concepts of science and scientific methods and the essentials of physics and chemistry. Topics covered include forces, motion, heat, sound, electricity, magnetism, light, atomic structure, chemical bonding, chemical equations, and chemical applications. Scientific data collection and analysis will be stressed in the laboratory portion of the course. (3 lecture hours and 2 lab hours per week.) F-S-Su

112. INTRODUCTION TO EARTH SCIENCE. 4 HRS.
Fundamental concepts of geology, meteorology, and astronomy. Earth processes, both past and present, will be studied. Topics covered will include the origin of the Universe, solar system and earth; the structure and composition of the earth; plate tectonics; the atmosphere, weather and climate; earth's water resources, and the Earth's place in the Universe. Earth resources and environmental topics will be stressed in the course, rocks and minerals and topographic maps will be studied, and there will be a local geologic field trip. (3 lecture hours and 2 lab hours per week.) F-S-Su

PHYSICS (PHYS)

101. INTRODUCTION TO PHYSICS 1. 4 HRS.
Mechanics, heat, and sound. Non-calculus based for students in pre-professional programs and college-transfer programs. (3 lecture hours and 2 lab hours per week.) (Prerequisite: MATH 128 or consent.) F

102. INTRODUCTION TO PHYSICS 2. 4 HRS.
Continuation of PHYS 101. Light; optics; electricity; magnetism. (3 lecture hours and 2 lab hours per week.) (Prerequisite: PHYS 101.) S

103. INTRODUCTORY PHYSICS. 4 HRS.
Designed to meet the requirements of the Elementary Education Science Specialization 5-9. Topics to be covered are motion, work, energy, heat, sound, light, electricity and magnetism. An integration of scientific inquiry with basic principles of physics. (3 lecture hours and 2 lab hours per week.) (Prerequisite: MATH 126.) S

111. GENERAL PHYSICS 1. 4 HRS.
Mechanics; heat; sound; designed for physics, chemistry and engineering majors. (3 lecture hours and 2 lab hours per week.) (Prerequisite: MATH 156) F

112. GENERAL PHYSICS 2. 4 HRS.
Continuation of PHYS 111. Light; optics; electricity; magnetism; modern physics. (Calculus based.) (3 lecture hours and 2 lab hours per week.) (Prerequisite: MATH 156, PHYS 111) S

POLITICAL SCIENCE (POLS)

101. ELEMENTS OF DEMOCRATIC GOVERNMENT. 3 HRS.
Introduction to government, origin, forms, and functions of the state, organization and forms of government, and the relations of groups and individuals to the state. Taught generally on a comparative basis.

102. AMERICAN FEDERAL GOVERNMENT. 3 HRS.
A survey course dealing with all aspects of our system of government, with emphasis on the constitution, the federal system, civil rights, the three branches of government, and foreign policy.

211. FUNCTIONS OF DEMOCRATIC GOVERNMENT. 3 HRS.
Course deals primarily with the activities of the executive branch of the government, particularly as they relate to social and economic development and expansion of government activities and services since 1932.

220. STATE AND LOCAL GOVERNMENT. 3 HRS.
Politics and policy at the state and local level in the American political system. Areas for study include constitutional, cultural, and financial constraints on state and local politics; community power structures; state legislatures; governors and other elected executives; and judicial elected institutions.

225. CONSTITUTIONAL LAW. 3 HRS.
Constitutional law is concerned primarily with the exercise of judicial review. The focus is on the manner in which the courts generally have interpreted the cryptic provisions of the US Constitution. The student should emphasize the principles, doctrines and rules developed in the cases and the underlying policies and values.

256. WEST VIRGINIA LEGISLATIVE PROCESS (HONORS PROGRAM). 2 HRS.
A study of the organization, operation and function of the West Virginia Legislature. Course seeks to involve the student in a direct learning experience through frequent visits to the Legislature, including an intensive internship week at the Capitol. A preliminary phase of the course is instructed by resource people and is designed to prepare students to the point that the later internship phase will be more meaningful. (Prerequisite: departmental approval) S

310. AMERICAN PRESIDENCY. 3 HRS.
This course surveys the literature on the American Presidency with particular attention to its historical and institutional development. It examines the constitutional foundations of the office, the method of election and removal, the President's role as chief executive and administrative head, the nature and extent of executive prerogative, and the dimensions of presidential leadership.

PSYCHOLOGY (PSYC)

101. INTRODUCTION TO PSYCHOLOGY. 3 HRS.
A general introduction survey course. Introducing the core areas of psychology. As a behavioral science, the focus will include an eclectic study of heredity, environment and learning. Other topics surveyed will include memory, perception, motivation, emotion, human development, personality, abnormal psychology, and psychotherapies. A general overview of specific theories in psychology will be included. F-S-Su

220. INTRODUCTION TO INDUSTRIAL PSYCHOLOGY. 3 HRS.
This course is an introduction to Industrial Psychology. It overviews the field of industrial psychology which includes testing, performance appraisal, training, leadership, job satisfaction, working conditions, organization, safety, stress and engineering psychology.

231. LEADERSHIP AND HUMAN RELATIONS. 3 HRS.
Overview of the psychological dynamics associated with leadership and human relations training. Special emphasis will be placed on the basic theories and constructs of leadership styles and techniques, team orientation, communication, group dynamics within organizations, and basic leadership issues. F

241. INTRODUCTION TO HUMAN DEVELOPMENT. 3 HRS.
Survey of human development across the life span with an emphasis on change in physical, cognitive, and social-emotional processes. Applied problem solving by use of developmental information provides experience for service related professions such as social work, nursing, education and counseling. F-S-Su

251. INTRODUCTION TO SOCIAL PSYCHOLOGY. 3 HRS.
Awareness of the many social factors which determine human behavior and the relationship of class, race, culture, gender, social structure and group interactions impacting individual behavior. S

281. ABNORMAL PSYCHOLOGY. 3 HRS.
An introduction to behavior disorders: etiology, prevention and treatment. Focus on major functional and organic disorders, theories related to mental disorders and methods of therapy. (Prerequisite: PSYC 101 or PSYC 241.) F-S

310. ENVIRONMENTAL PSYCHOLOGY. 3 HRS.
This course will involve the student in research concerning environmental issues and how we as humans are impacted and how we impact our environment.

318. HISTORY AND SYSTEMS. 3 HRS.
A survey of Psychology from its origins in Philosophy, Biology and Physics through the early major schools of psychological thought to modern perspectives on the science of behavior and its applications to human affairs. (Prerequisites: PSYC 101 or 241 and 60 hours)

323. INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY. 3 HRS.
An introduction to the application of psychological principles in the areas of employee selection, performance appraisal, motivation and morale, sexual harassment, leadership, decision making, team building and general organization behavior. (Prerequisites: ENGL 102 or its equivalent; 2 Psychology or related Social Science courses, and a Communications course.)

350. INTRODUCTION TO COUNSELING PSYCHOLOGY. 3 HRS.
Basic introduction to group facilitation related to the field of counseling. Included is information, techniques and strategies concerning group foundation. Teamwork and co-facilitation of groups will be emphasized and practiced. (PSYC 101 or 241 and 60 hrs.) S

362. PSYCHOLOGICAL ASSESSMENT. 3 HRS.
This course introduces the student to the theory and practice of psychological assessment procedures. The course includes intelligence testing, personality testing, career testing, behavioral assessment procedures, statistics, interviewing and interpretation. (PSYC 101 or 241 and MATH 211 or consent and 60 hrs)

363. THEORIES OF PERSONALITY. 3 HRS.
Theoretical and empirical readings in a discussion of the major perspectives in personality theory and methodological problems in personality and research. (Prerequisite: PSYC 101 plus 60)

365. FORENSIC PSYCHOLOGY. 3 HRS.
An in-depth study of criminal behavior, criminal responsibility, abnormal psychology and the challenges of mental health issues and the criminal justice system. F

410. APPLIED ENVIRONMENTAL PSYCHOLOGY. 6 HRS.
To involve students in an experiential learning opportunity with the environment. Includes research, projects, team development, group dynamics, and communication. (Prerequisites: 60 hrs: ENGL 101 & SPCH 111.) (Co-requisites: Application required.) Su

460. CAPSTONE SEMINAR IN PSYCHOLOGY. 1 HR.
This course provides students with an opportunity to demonstrate comprehensive learning and application in Psychology. The course will also focus on final preparation for work and/or graduate school. (Prerequisite: Eligible to graduate with RBA) (Co-requisite: Emphasis in Psychology) F-S

READING (READ)

009. SPECIAL PROBLEMS IN READING. 3 HRS.
Designed for students with severe reading problems. Individually designed for each student. (Graded: pass/repeat.) (Prerequisite: placement test) F-S-Su

079. COLLEGE READING 1. 3 HRS.
Techniques and skills in reading and studying college material; understanding the nature of reading; reading for specific purposes; reading for literal and inferential comprehension; vocabulary development; study skills. May be repeated twice for credit. (Graded: pass/repeat.) (Prerequisite: pass grade in READ 009 or LA 065 or placement test.) F-S

080. READING IN THE CONTENT AREA. 3 HRS.
Critical reading skills (drawing conclusions, synthesizing and evaluating information, and recognizing the elements of argumentation) developed for specific content areas such as social science, science, business, literature, etc. Critical reading skills developed. May be repeated twice for credit. (Graded: pass/repeat.) (Prerequisite: READ 079 or instructor's recommendation or placement test.) F-S

090. STRATEGIC READING FOR COLLEGE. 3 HRS.
Students will develop strategies for reading, studying, and analyzing college material. Topics addressed: active reading process, text structure, style and purpose, vocabulary, critical thinking. (Graded: pass/fail.) (Prerequisite: Placement test.)

101. SPEED READING. 3 HRS.
Increased reading speed; previewing; postviewing; maintaining attention; comprehension. F-S

111. ADVANCED VOCABULARY STUDY. 2 HRS.
Understanding and use of new words, both general and technical; use of word parts and context cues; use of glossaries and textual aids.

302. TEACHING READING K-6. 3 HRS.
Strategies and materials in teaching reading for Early and Middle Childhood teacher. (Prerequisites: Admission to Teacher Education Program and LA 301. Concurrent enrollment with LA 301 with instructor's consent.) (Co-requisite: Field Experience) F-S

401. DIAGNOSTIC AND PRESCRIPTIVE READING. 3 HRS.
The development of competencies in diagnosing reading problems through the use of various instruments and in prescribing remediation based on the evaluations. (Prerequisites: Admission to Teacher Education Program, EDUC 300, 320 and READ 302.) (Co-requisite: Field Experience.) F-S

REAL ESTATE (REAL)

- 301. PRINCIPLES & PRACTICES OF REAL ESTATE. 2 HRS.**
This course introduces the student to customary practices and procedures involving the work of real estate sales agents and brokers and, it provides overviews of real estate law, financing, and appraisal methods.
- 302. REAL ESTATE LAW. 2 HRS.**
The law as it applies to real estate transactions from listing to closing.
- 303. REAL ESTATE FINANCE. 2 HRS.**
Procedures and problems with real estate loans and financing; investing in and managing property.
- 304. REAL ESTATE APPRAISAL. 2 HRS.**
Estimating value of real property; cost, income, and market data analysis.
- 401. GRI MODULE 1. 2 HRS.**
Pricing property for sale; listing property; marketing and servicing property; completing the transaction; construction and energy; code of ethics.
- 402. GRI MODULE 2. 2 HRS.**
Investment real estate; financing the sale; leadership styles; time management; real estate law.
- 403. GRI MODULE 3. 2 HRS.**
Calculators; farm and land; common ownership forms; government effects on real estate.
- 404. GRI MODULE 4. 2 HRS.**
Appraisal; brokerage management; property management; urban growth; sub-division design; syndications; land development.

RELIGION (RELI)

- 111. OLD TESTAMENT SURVEY. 3 HRS.**
An introduction to the writings of the Old Testament as literature and history; disclosing the historical, social, and spiritual backgrounds of people. F
- 205. NEW TESTAMENT SURVEY. 3 HRS.**
Study of the beginnings of Christianity, to include the world into which it was born; the person upon whom it was founded; the church it called into being; and its first great advocate, the Apostle Paul. The course is designed to help the student acquire a critical and appreciative knowledge of the historical, literary, and religious values of the New Testament. S
- 231. RELIGIONS OF THE WORLD. 3 HRS.**
A study of the major living religions of the world; their basic beliefs and practices; their historical, ethical, social and spiritual impact upon society; and their fundamental strengths and weaknesses.
- 341. SOCIAL GOSPEL AND AMERICAN CULTURE. 3 HRS.**
Study of the Social Gospel as it relates to American culture, religion and politics. Beginning after the Civil War, the history of social movements and leaders from Walter Rauschenbusch to Martin Luther King, Jr.

SCIENCE (SCI)

- 301. INSTRUCTIONAL STRATEGIES IN SCIENCE. 3 HRS.**
A course designed to facilitate the elementary education major in the teaching of science. The course will investigate the teaching of science through discovery and inquiry. A hands-on approach will be used as students prepare lessons on selected topics to be used as a practicum with local elementary students (Prerequisites: Admission to Teacher Education Program, BIOL101/103, 102/104, PSCI 111/112) (Co-requisite: Field Experience)
- 302. SCIENCE STRATEGIES FOR MIDDLE SCHOOL. 2 HRS.**
Instructional strategies and curriculum materials appropriate for the teaching of science in grades 7-9 will be investigated. Students will prepare and use hands-on inquiry lessons in teaching experience with local junior high students. (Prerequisites: All Science requirements, MATH 126, Admission to Teacher Education Program.) (Co-requisite: Field Experience) S

SECURITY (SEC)

- 300. INTRODUCTION TO SECURITY. 3 HRS.**
This class addresses real-world business challenges and provides hands-on exercises working with corporate security policies, practices, and procedures. Students will learn topics such as working with acceptable use policies, cryptography, common attackers, and business communications in real-world security situations. (Prerequisite: Grade of C or better in CIT 130 and CIT 112)
- 350. NETWORK SECURITY. 3 HRS.**
This class will teach students to design and implement security solutions that will reduce the risk of revenue loss and vulnerability. The course focuses on the overall security processes based on a security policy, with an emphasis on hands-on skills in the areas of secure perimeter, secure connectivity, security management, identity services, and intrusion detection. (Prerequisite: C or better in CIT 206; Co-requisite: SEC 300)
- 351. DEFENSE & COUNTERMEASURES. 3 HRS.**
This course will teach students to design and implement intrusion detection, firewalls, and Virtual Private Network security, as well as implementing a security policy, through advanced computer network operating systems. (Prerequisites: C or better in Cit 211, 240 and SEC 350)
- 410. MANAGEMENT OF INFORMATION SECURITY. 3 HRS.**
This course is designed to explore the management aspects of information security. This course will take a decision-making perspective and presents important information for effectively combining topics covered in other security classes into a holistic security management approach. (Prerequisites: C or better in SEC 300)
- 430. OPERATING SYSTEM SECURITY. 3 HRS.**
This course is designed to expand networking student's basic network and operating system skills to include planning, implementation, and auditing of a system's security. This course covers a variety of operating systems, including a Window client operating system, Windows server operating system, Linux, NovellNetWare and Mac OS. (Prerequisite: C or better in SEC 300 & 351)
- 431. COMPUTER FORENSICS. 3 HRS.**
This course presents the methods to properly conduct a computer forensics investigation including a discussion of investigative tools and techniques, investigative reporting, testifying in a court of law, and ethics. (Prerequisites: CIT 101, SEC 300, CJ 143)

460. SECURITY CAPSTONE.

This course will involve an investigation of an actual or experimental situation, and may include the design, construction, and testing of an experimental, comprehensive scenario demonstrating mastery of security topics covered in previous classes. (Prerequisites: Senior status; Co-requisite: SEC 410)

3 HRS.**SOCIAL STUDIES (SOST)****315. INSTRUCTIONAL STRATEGIES IN SOCIAL STUDIES.**

This course covers the subject content, materials and instructional strategies for planning, teaching and evaluating social studies lessons in grades K-6. (Prerequisites: Admission to Teacher Education program.) F-S

3 HRS.**316. INSTRUCTIONAL STRATEGIES FOR MIDDLE SCHOOL SOCIAL STUDIES.**

This course covers content, materials and instructional strategies for planning, teaching and evaluating social studies lessons at the middle school level. (Prerequisites: Admission to Teacher Education; SOST 315; Co-requisite: 20-hour field experience.) F

2 HRS.**SOCIOLOGY (SOC)****101. INTRODUCTION TO SOCIOLOGY.**

The course will cover the fundamental concepts and methods of the scientific study of human society and social behavior. It will focus on institutional foundations of group life; social roles and interpersonal relations; values and social processes in context of technological change ethnicity, race, age, gender and socio-economic classes. Students will gain insight into the social behavior of people in other cultures and adopt an attitude of cultural relativism. F-S-Su

3 HRS.**105. INTRODUCTION TO ANTHROPOLOGY.**

Physical, cultural, and archaeological anthropology; origin, development, and differentiation of man as a biological organism; human behavior in different cultures; evolution; fossils; human diversity; kinship; marriage; religion; law.

3 HRS.**107. SOCIAL PROBLEMS.**

Theory and practice of problems that affect the integration and functioning of society as a whole. Both classical and contemporary social issues are addressed as to their cause, impact and meaning.

3 HRS.**151. SOCIOLOGY OF THE WORKPLACE.**

A study of occupational and organizational work settings, social meanings, types and social functions of work. Contemporary social issues are addressed as they apply to the work environment. (Required in the Tech Prep program; does not substitute for SOC 101 in general education).

3 HRS.**221. MARRIAGE AND THE FAMILY.**

The course will examine the concepts and the processes of love, dating, sexual behavior, mate selection, marriage, divorce, parenting, etc. in the context of social expectations of American culture and ongoing social change in the values, attitudes and the roles of men and women. The students will come to understand themselves and their interpersonal relationships in the context of their group affiliations, such as family, school, peers, workers, socioeconomic class and the religious organization, etc. It will provide the kind of information that will make the students more aware of the factors that might be causing marriage and family problems and also various skills and techniques of coping with and resolving the problems.

3 HRS.**223. DEATH AND DYING.**

Sociological and anthropological perspectives on death and dying. Examines sociopsychological and structured factors supporting the beliefs and practices associated with the institution of death, both historically and in contemporary society.

3 HRS.**232. CRIMINOLOGY.**

Three-pronged approach to crime and crime control, covering definitions and explanations of crime, typology of criminals and criminal behavior, and examination of the criminal justice system, from the police officer to the courts to imprisonment and beyond. S

3 HRS.**233. JUVENILE DELINQUENCY.**

Examination of juvenile delinquency within a sociological framework. Discussion of the delinquent, laws and norms impinging on the juvenile, societal definitions and reactions, punishment and correctional approaches, and theories of delinquency and crime control. (Prerequisite: SOC 101)

3 HRS.**235. RACE RELATIONS AND MINORITY GROUPS.**

A study of racial and ethnic groups in the United States with special emphasis upon understanding the cause of the prejudices and the reason for antagonisms between the majority and minority groups. Area of concentration will include problems in education, demographic factors, prejudice and discrimination, conflict and change, racial identity and the social structure of racism. A look at theories and techniques of eliminating prejudices will be made. Students will investigate all structural, institutional and systemic problems as they relate to minority groups and race relations. (Prerequisite: SOC 101)

3 HRS.**250. INTERNATIONAL CULTURE.**

Sociological study of the concepts of scientific study and society and social behavior of an international culture. The foundations of beliefs, values, behaviors, symbols, knowledge, language, norms, and elements of material and nonmaterial culture. (Prerequisite: Must be enrolled in study abroad program)

3 HRS.**302. DEVIANT BEHAVIOR.**

Course examines, within a sociological framework, deviance within society. Explanations, descriptions, and societal reactions are examined, with emphasis on mental illness and mental hospitals, suicide, drug addiction, sexual deviations, crime and delinquency. (Prerequisite: SOC 101)

3 HRS.**311. SOCIAL RESEARCH METHODS.**

Logic of social research, elements of research design, and problems of measurement, with emphasis on survey research methodology and data analysis. (Prerequisite: SOC 101, MATH 211, ENGL 102)

3 HRS.**323. SOCIOLOGY OF RURAL LIFE.**

Social aspects of rural living. Characteristics of rural population, social structure, and institutional arrangements: family, community, education, religion, recreation, health, welfare, and local government. (Prerequisite: SOC 101, ENGL 102)

3 HRS.**334. CORPORATE AND WHITE COLLAR CRIME.**

This course is a comprehensive examination of the prevalence and impact of white collar crime. It will explore the history of the phenomenon and will focus on "occupational" and "organizational/corporate" criminality. Issues will include those "socially injurious acts" of corporations and formal organizations against their employees, consumers, the public or the environment. Students will concentrate on the deviant and illegal acts of individuals in the course of their occupational activity. (Prerequisite: SOC 101, ENGL 102)

3 HRS.**345. TERRORISM.**

Systematic study of the phenomenon of terrorism and the problem of developing an effective analytical framework to study terrorism. Through the examination of a wide variety of strife incidents, the students will evaluate and discuss various topics including types, groups, responses by public authorities, and tactical and strategic crisis management techniques. (Prerequisite: SOC 101)

3 HRS.

350. INTERNATIONAL CULTURE.**3 HRS.**

Sociological study of the concepts of scientific study and society and social behavior of an international culture. The foundations of beliefs, values, behaviors, symbols, knowledge, language, norms, and elements of material and nonmaterial culture. (Prerequisite: Must be enrolled in study abroad program, SOC 101, ENGL 102)

360. GENDER AND HUMAN IDENTITY.**3 HRS.**

Course will explore the concepts of gender from a sociological perspective. Focus will be on perceptions of learning and living gender, roles and relationships, cultural differences of gender, and expectations and consequences of gender. Considerable attention will be focused upon applying knowledge. (Prerequisites: PSYC 101, PSYC 241 or SOC 101, ENGL 102)

362. SOCIOLOGY OF AGING.**3 HRS.**

Social forces influencing the experience of aging and the effects of a growing elderly population on society. Topics include changing roles and status of the elderly, intergenerational relationships, retirement traditions, widowhood. (Prerequisites: SOC 101, ENGL 102)

401. SOCIOLOGICAL THEORY.**3 HRS.**

Systematic analysis of major sociological theories viewed from the historical perspective and in terms of current research. (Prerequisite: SOC 101, ENGL 102)

405. INTRO TO SOCIAL INEQUALITY.**3 HRS.**

Systematic study of the ways individuals/groups are differentiated and ranked historically and currently within the United States. Major systems examined are gender, race, ethnicity, socioeconomic status, sexual orientation, place, age, ability and religion. (Prerequisites: SOC 101, ENGL 102.)

SPANISH (SPAN)**101. ELEMENTARY SPANISH 1.****3 HRS.**

Sounds of Spanish; word order; common tenses; sentence patterns; vocabulary. F-S

102. ELEMENTARY SPANISH 2.**3 HRS.**

Continuation of SPAN 101. (Prerequisite: SPAN 101 or equivalent.) F-S

203. INTERMEDIATE SPANISH 1**3 HRS.**

Continuation of SPAN 102. Reading; speaking. (Prerequisite: SPAN 102 or equivalent.) F-S

204. INTERMEDIATE SPANISH 2.**3 HRS.**

Continuation of SPAN 203. Readings of increased difficulty. (Prerequisite: SPAN 203 or equivalent.) F-S

295. SEMINAR IN SPANISH.**1-3 HRS.**

(Prerequisite: department consent.)

SPEECH COMMUNICATION (SPCH)**111. FUNDAMENTALS OF SPEECH.****3 HRS.**

Principles of public communication; public speaking. (Prerequisite: ENGL 091 or Placement Test.) F-S-Su

112. INTERPERSONAL COMMUNICATION.**3 HRS.**

One-to-one communication; strengths and weaknesses of one's own communication skills; approaches to conflict; listening; verbal and non-verbal interactions. (Prerequisite: ENGL 091 or Placement Test.) F-S-Su

131. ORAL INTERPRETATION.**3 HRS.**

Theory and practice in interpreting literature orally; selection, analysis, and presentational techniques; poetry, prose, and drama are explored. (Prerequisite: SPCH 111.)

190-199. COMMUNICATIONS APPLICATIONS FOR THE BUSINESS, PROFESSIONAL, AND INDUSTRIAL SETTING.

190	The Communication Process	(1)
191	Listening	
192	Nonverbal Communication	(1)
193	Employee Motivation and Communication	(1)
194	Interviewing Theory, Practice, Technique	(1)
195	Effective Oral Language Usage	(1)
196	Conflict Resolution through Communication	(1)
197	Small Group Problem-Solving and Decision-Making	(1)
198	Message Organization and Design	(1)
199	Effective Message Delivery	(1)

210. AMERICAN SIGN LANGUAGE 1.**3 HRS.**

An Introduction to American Sign Language Part 1. Recognize and produce approximated 700 signs, understand basic structure of ASL, communicate expressively in one to one conversations.

212. AMERICAN SIGN LANGUAGE 2.**3 HRS.**

Improve skills needed to communicate in sign language. Includes increasing sign language vocabulary, practicing finger spelling, and communicating with signs. (Prerequisite: SPCH 210)

281. CONTEST SPEAKING: ORIGINAL PREPARED EVENTS.**1 HR.**

Concentrates on events that are prepared and memorized in advance: expository, persuasion and after-dinner.

282. CONTEST SPEAKING: ORIGINAL EVENTS.**1 HR.**

Concentrates on the events that are original but which are not completely prepared and memorized in advance: extemporaneous, impromptu, radio broadcasting, and ad lib.

283. CONTEST SPEAKING: INTERPRETATION.**1 HR.**

Concentrates on the interpretation of prose, poetry, and drama in the contest setting. Emphasis upon finding literature, analyzing and interpreting it.

287. READERS THEATRE.**1-3 HRS.**

The study and practice of the art including script analysis, interpretation, proper use of the expressive voice, staging approaches including both the ensemble and solo performance. Students will participate in a Reader's Theatre Program. F

295. SEMINARS IN COMMUNICATION.**1-3 HRS.****303. BUSINESS AND PROFESSIONAL COMMUNICATION.****3 HRS.**

This course is an application of the principles of communication. Simulated projects and oral presentations will be used to refine communication skills necessary for entry-level positions within business and other professional settings. (Prerequisite: SPCH 111)

304. HUMAN COMMUNICATION AND RATIONAL DECISIONS.**3 HRS.**

Argumentation, small group, persuasion, and systems theories application to the process and outcome of rational decision-making in communication.

306. HUMAN COMMUNICATION IN ORGANIZATIONS/INSTITUTIONS. 3 HRS.

Communication processes and problems in business and non-business organizations and institutions with attention to practical application. (Prerequisites: ENGL 101, 102, SPCH 111 or 112)

308. NONVERBAL COMMUNICATION. 3 HRS.

This is a study on nonverbal behavior as it occurs in Interpersonal Relations. (Prerequisites: 48 college hours and SPCH 111, 112 and ENGL 101)

316. INTERCULTURAL COMMUNICATION. 3 HRS.

A comprehensive overview of communication in various cultures. (Prerequisites: 48 hours and ENGL 101, 102, SPCH 111)

404. PERSUASION - THEORY AND RESEARCH. 3 HRS.

Theory and research in persuasion, emphasizing a critical understanding and a working knowledge of select principles of speech communication upon changing attitudes, beliefs, values and behavior. (Prerequisites: ENGL 101, ENGL 102, SPCH 111; 48 college credit hours.)

STUDENT DEVELOPMENT (SDEV)**100. TRANSITIONS TO COLLEGE. 1-3 HRS.**

This course will provide high school students with active participation in the assessment and development of abilities in line with college expectations including an orientation to college services and activities, learning and test taking skills, using traditional and electronic resources, problem solving, people skills, self-management skills, and career/life planning strategies.

101. FIRST YEAR EXPERIENCE. 1-3 HRS.

This is an introductory course in college success. This course covers a variety of topics: making the transition to college life; study skills; student rights and responsibilities; civility; civic engagement and responsibility; time management; campus life and activities; career development; diversity and basic computer skills.

102. STUDY SKILLS. 2 HRS.

This course is designed for those students who need to develop more effective study skills. This course covers a variety of topics, including: time management, controlling test anxiety; listening and note taking; learning a systematic plan for reading textbook chapters; maximizing memory for test taking; thinking critically and wise usage of campus resources in getting help to become successful in college.

103. CAREER DEVELOPMENT. 1 HR.

This course is designed for those students who are unsure of a career field to enter. Students will learn how to: set goals for themselves; make personal and career decisions; find information vital to decision making from various sources; recognize transferable skills a person possesses that can be utilized in many different careers; develop a career plan for the next ten years and learn how to program oneself for success.

104. JOB SEARCH TECHNIQUES. 1 HR.

Identifying prospective employers; networking; developing resumes and letters of application; effective interviewing; effective personal marketing.

105. SUBSTANCE ABUSE EDUCATION. 1 HR.

Effect of drugs on the body; effect of alcohol on physiological functions; alternative means of coping with stress; effect of alcohol on emotional growth; alcoholism; coping with alcohol within the family; options and processes for treatment of substance abuse. On Demand.

108. PERSONAL DEVELOPMENT. 1-3 HRS.

This course provides an orientation to college, motivation for life-long learning, time management, study skills, career decision making, taking responsibility for one's own actions, working independently and in groups, and managing change. This course is designed for those students who have been out of school for 5 years or more.

200. LEADERSHIP DEVELOPMENT AND COMMUNITY SERVICE. 1-3 HRS.

This course is designed to provide emerging and existing leaders the opportunity to explore the concepts of leadership and to develop and improve their skills. The course integrates readings from the humanities, experimental exercises, films, contemporary readings on leadership and community service projects.

SURGICAL TECHNOLOGY (ST)**101. INTRODUCTION TO SURGICAL TECHNOLOGY. 10 HRS.**

This course is designed to introduce the student to the role, working environment and required skills of the surgical technologist. Principles of aseptic technique, standard precautions and methods of infection control will be emphasized. The student participates, with supervision, in the preoperative care of the surgical patient, utilizing beginning skills of aseptic technique, instrumentation and environmental control. (6 lecture; 4 campus laboratory; 6 clinical hours per week.) (Prerequisite: Admission to the Surgical Technology) F

111. PATIENT CARE CONCEPTS 1. 11 HRS.

A continuation of ST 101, this course is designed to build upon previous concepts and will enable students to demonstrate knowledge and techniques basic to effective performance as a scrubbed team member in the surgical suite. Clinical assignments will be conducted in the surgical suites of area hospitals under the direct supervision of the clinical instructor or mentor. (6 lecture and 15 clinical hours per week.) (Prerequisite: ST 101.) S

112. PATIENT CARE CONCEPTS 2. 8 HRS.

This course will focus on knowledge and skills basic to effective performance as a member of the surgical team. Solo scrub experiences will be assigned, enabling the student to focus on anticipating needs and minimizing the patient's exposure to trauma. Focus will also be directed toward anticipatory socialization and adaptation to aid role transition from student to graduate (32 clinical hours and 2 seminar hours per week.) (Prerequisite: ST 111.) Su

114. PHARMACOLOGY FOR SURGICAL TECHNOLOGY. 3 HR.

This course is designed to introduce the surgical technology student to their role in handling of medications and solutions in the surgical setting. A review of basic mathematical calculations will assist the student in converting equivalents from one system of measurement to another. (3 lecture hours per week.) (Prerequisite: ST 101 or permission.) S

THEATRE (THEA)**101. THEATRE APPRECIATION. 3 HRS.**

A survey of the art of theatre addressing the practical and historical/theoretical aspects of the craft. Students will examine/participate in elements of play production, analysis, genres, historical periods, and the viewing/discussion of live productions. F-S

102. ACTING 1. 3 HRS.

For the beginning actor. Logical steps to follow when approaching a role, exploring the tools of the actor (mind, body, voice) and refining skills in using these tools to communicate a character to the audience.

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- 103. ORAL INTERPRETATION. 3 HRS.**
Theory and practice in interpreting literature orally; selection, analysis, and presentational techniques; poetry, prose, and drama are explored. (Prerequisite: SPCH 111)
- 125. UNIVERSITY PLAYERS. 1-3 HRS.**
This course is a performance-oriented class designed to give students hands-on experience through involvement in theatre productions. The emphasis is on directed student activity-one-on-one combined with a team of fellow performers. F-S
- 131. INTRODUCTION TO TECHNICAL THEATRE. 3 HRS.**
A practicum course in technical theatre. Students will participate in all drama productions as a part of the course requirement.
- 215. THEATRE MAKE-UP. 3 HRS.**
A course designed to give the student an elementary command of theatre make-up through a study of the human face, light and shadow, color, equipment, construction and make-up types.
- 250. DRAMATIC LITERATURE. 3 HRS.**
Reading and discussion of a minimum of 10 major dramatic works.
- 287. READERS THEATRE. 3 HRS.**
The study and practice of the art including script analysis, interpretation, proper use of the expressive voice, staging approaches including both the ensemble and solo performance. Students will participate in a Reader's Theatre Program. F
- 291. MUSICAL THEATRE. 1-3 HRS.**
Staging of a musical theatre production. Credit for participation in a musical. S
- 302. DIRECTING. 3 HRS.**
Examination of directing skills: Script interpretation, casting techniques, rehearsal methods, time and space management, and artistic collaboration so the student will obtain the skills required to direct a production in the Spring One-Act Play Festival.
- 404. PLAYWRITING 3 HRS.**
Students will develop basic skills in playwriting techniques through the examination of written theatrical works, attendance at live performances, and completion of classroom exercises. Self-expression will be emphasized.

WELDING (WELD)

- 111. BASIC OXYACETYLENE. 3 HRS**
Principles of oxyacetylene welding, cutting, and brazing. Nomenclature of the equipment, assembly, care, and safety.
- 112 WORKPLACE SKILLS. 3 HRS.**
This course focuses on workplace culture, workplace politics, teamwork, communication skills, diversity, work ethics, conflict resolution, and other skills necessary to be a valuable employee. S
- 113. WELDING BASICS. 4 HRS.**
This course provides the student with basic knowledge and skill with OFC, OFW, PAC, GMAW, SMAW, GTAW, and FCAW processes. This is not an in-depth study of each process. S.
- 121. BASIC SMAW. 4 HRS**
Safety and nomenclature of the SMAW welding process. Hands-on welding utilizing E6010 and E7018 electrodes on pad of beads, lap joints, tee joints, and butt joints in all positions. (CBE course)

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- 122. INTERMEDIATE SMAW. 4 HRS**
Continuation of Weld 121. Safety. Tee joint and bevel plate welding in all positions. (CBE course) (Prerequisite: WELD 121)
- 131. BASIC GTAW. 4 HRS**
Introduction to the gas tungsten arc welding process. Equipment set-up and safety. Hands-on welding on pad of beads, lap joints, tee joints, and butt joints. (CBE course)
- 132. ADVANCED GTAW. 4 HRS**
Bevel plate certification in all positions with the gas tungsten arc process according to the AWS Code. (CBE course) (Prerequisite: WELD 131)
- 133. BASIC FCAW. 4 HRS.**
Introduction to the flux core arc welding process. Equipment set-up and safety. Hands-on welding on pad of beads, lap joints, tee joints, and butt joints.
- 134. BASIC GMAW. 4 HRS.**
Introduction to the gas metal arc welding process. Equipment set-up and safety. Hands-on welding on pad of beads, lap joints, tee joints, and butt joints.
- 135. ADVANCED GMAW. 4 HRS**
Bevel plate certification in all positions with the gas metal arc welding process according to the AWS Code. (Prerequisite: Instructor's consent or WELD 134.)
- 136. ADVANCED FCAW. 4 HRS.**
Bevel plate certification in all positions with the flux core arc welding process according to the AWS Code. (Prerequisite: WELD 133)
- 160. WELDING BLUEPRINT READING. 4 HRS.**
Fundamentals of blueprint reading geared towards teaching students to decipher blueprints found in industrial settings.
- 172. WELDING AND INDUSTRIAL SAFETY. 2 HRS.**
Industrial safety focusing on welding and cutting operations found in an industrial setting.
- 173. BASIC WELDING ELECTRICITY. 3 HRS.**
Basic electrical knowledge utilized in the minor repair and trouble-shooting of welding machines.
- 174. TECHNICAL SKILLS. 4 HRS.**
Specialized welding skills. (Prerequisite: WELD 134.)
- 175. ALUMINUM GTAW 4 HRS.**
Specialized training in Aluminum GTAW. S (Prerequisite: WELD 131.)
- 221. ADVANCED SMAW. 4 HRS.**
Bevel plate certification with the shielded metal arc welding process according to the AWS Code. (CBE course) (Prerequisite: WELD 122)
- 233. CODE GTAW. 4 HRS.**
Pipe certification utilizing the gas tungsten arc welding process according to the ASME Code. (Prerequisite: WELD 132)
- 236. CODE GMAW. 4 HRS.**
Pipe certification utilizing the gas metal tungsten arc welding process according to ASME Code. (Prerequisite: WELD 135)

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237. CODE FCAW.

Pipe certification utilizing the flux core arc welding process according to the ASME Code.
(Prerequisite: WELD 136)

241. COMMERCIAL AND INDUSTRIAL PRACTICES. 4 HRS.

This course is designed to familiarize the student with the business end of the welding industry.
A full scale project will also be completed by the student.

251. CODE SMAW. 4 HRS.

Pipe certification utilizing the shielded metal arc welding process according to the ASME Code.
(CBE course) (Prerequisite: WELD 221)

261. STEEL FABRICATION. 3 HRS.

Job estimation, interpreting layouts from simple sketches or prints. Mathematics of the layout
and fit-up situations which arise in weld fabrication. (Prerequisite: MATH 107)

271. INTRODUCTION TO WELDING THEORY. 4 HRS.

Theory of all ARC welding processes; equipment function and their use.

277. ADVANCED WELDING THEORY. 3 HRS.

Methods and procedures application.

278. WELDING INSPECTION PRACTICES. 3 HRS.

Reading and understanding the ASME Section IX Code. Some destructive and non-destructive
testing. Writing WPS's, PQR's and WPQ's.

279. WELDING INSPECTION. 4 HRS.

Teaches the student about inspection and prepares the student to take the AWS welding
inspection exam with the API 1104 Code Book.

280. CREATIVE WELDING. 4 HRS.

The focus of this course will be heating, bending, forming, and welding carbon steel to create
various artistic projects. The student will receive basic instruction in safety and welding as it
applies to each project. **This course will not meet any fine arts requirement.** F

281. METALLURGY. 3 HRS.

Properties of ferrous and non-ferrous metals; physical metallurgy of ferrous metals; producing
iron and steel; surface treatment; alloys of special steel; classification of steels.

291. FAB SHOP. 4 HRS.

This course is designed to introduce the student into a work environment depicting the actual
day-to-day operations of a fabrication shop. The student will incorporate the skills and knowledge
acquired to gain experience that is required to enter the workforce successfully. (Prerequisite:
Welding students in their final semester before graduation)