SECTION 11

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 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
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 Senior Vice President of Academic Affairs.

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

ACCOUNTING (ACCT)

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.

ACCT 201. PRINCIPLES OF ACCOUNTING I. 3 Hrs.
Covers the fundamentals of accounting; the accounting cycle; journals and ledgers; working papers; financial statements; types of accounts; analysis of financial statements; fundamentals of budgeting; and an introduction to internal controls. (Prerequisite: Placement test) [Common Professional Component Course]

ACCT 202. PRINCIPLES OF ACCOUNTING II. 3 Hrs.
Continuation of ACCT 201. Introduction to Partnership accounting procedures; Corporation accounting procedures; bond accounting; capital stock accounts; asset accounting procedures; introduction to manufacturing accounting. (Prerequisite: ACCT 201) [Common Professional Component Course]

ACCT 310. ACCOUNTING INFORMATION SYSTEMS. 3 Hrs.
This course is an examination of accounting information systems within a context of computerized technology. The course focuses on accounting terms, concepts, and technology found within the accounting information systems environment; accounting cycles and control of accounting information systems; theory and practices relating to systems development; and reporting practices related to accounting information systems. (Prerequisite: ACCT 201)

ACCT 311. INTERMEDIATE ACCOUNTING I. 3 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: B or higher in ACCT 201 and 202, and MATH 126)

ACCT 312. INTERMEDIATE ACCOUNTING II. 3 Hrs.
Continuation of ACCT 311. Topics covered include noncurrent assets, equity, flow of funds and ratio analysis. (Prerequisite: ACCT 311)

ACCT 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)

ACCT 353. FEDERAL INCOME TAX ACCOUNTING I. 3 Hrs.
Tax theory and practice with special emphasis on individual income taxation; the federal tax code and regulations; and, federal tax forms.

ACCT 354. FEDERAL INCOME TAX ACCOUNTING II. 3 Hrs.
This course focuses on income taxation of corporations, estates, trusts, and partnerships. Tax considerations in establishing business organizations, reorganizations, and liquidations. (Prerequisites: ACCT 202)

ACCT 360. FRAUD EXAMINATION. 3 Hrs.
Delve into the world of white-collar crime and forensic accounting. Study methods of detection prevention and investigation.

ACCT 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)

ACCT 405. AUDITING. **3 Hrs.**
Study of auditing theory and practice, generally accepted auditing standards, the audit plan, internal control evaluation, statistical sampling and testing procedures; and auditor's reports. (Prerequisites: ACCT 312)

ACCT 410. GOVERNMENT/NOTFORPROFIT 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)

ACCT 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, and Admission to BSBA or BASBA Program)

APPLIED TECHNOLOGY/PROCESS TECHNOLOGY (ATPT)

Course descriptions are provided under **Process Technology**.

ART

ART 101. ART APPRECIATION. **3 Hrs.**
Visual arts and artists, periods, societies, cultures; design and composition; media, materials, and techniques.

ART 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.

ART 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)

ART 111. DRAWING 1. **3 Hrs.**
This course provides the foundation for observational drawing and the basic elements of art and design. Emphasis will be placed on value, form, line, composition and perspective. Various black and white media and techniques will be introduced.

ART 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)

ART 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.

ART 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)

ART 162. WATERCOLOR. **3 Hrs.**
Introduction to materials and techniques used in watercolor; composition, color theory, and personal expression. (6 studio hours per week) (Prerequisite: ART 111 or ART 121)

ART 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)

ART 214. PAINTING 2. **3 Hrs.**
Continuation of painting. Building increased skill in technical and personal expression using either oils or acrylics. (6 studio hours per week) (Prerequisite: ART 213)

ART 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)

ART 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.

ART 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.

ART 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

ART 240. CERAMICS 1. **3 Hrs.**
Techniques of hand building, clay and glaze formulation, gas and electric kiln use; introduction to throwing on potter's wheel. (6 studio hours per week)

ART 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) On Demand

ART 242. WOODCARVING. **3 Hrs.**
Sculpturing in wood; direct carving, assemblage, lamination, wood bending, joints, and finishes. (6 studio hours per week) (Prerequisite: ART 240)

ART 243. BRONZE CASTING. **3 Hrs.**
Casting bronze statuary using lost wax process. Introduction to ceramic molding techniques.
(6 studio hours per week) (Prerequisite: ART 240)

ART 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)

ART 245. BRONZE CASTING 2. **3 Hrs.**
This course is a continuation of ART 243 and will aid the student in more proficient creating of cast bronze sculpture through a better understanding of the processes and techniques used.

ART 251. ART WELDING. **3 Hrs.**
Students will learn basic welding and cutting techniques in the creation of welded steel sculptures using stock steel and found steel objects.

ART 314. ADVANCED PAINTING. 3 Hrs.
This course builds on the skills and techniques developed in Painting 2. Emphasis will be placed on the creation of a body of work through exploration, contemporary media, and an individual voice. (Prerequisites: Art 111, Art 214)

ART 315. ART SKILLS AND INSTRUCTIONAL STRATEGIES K-6. 3 Hrs.
Provides experience in two and three-dimensional media employed in public school (K6), 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)

ART 340. ADVANCED CERAMICS. 3 Hrs.
This course is a continuation of Ceramics 2, where students will refine and increase their skills in throwing functional pottery, glazing their wares, and firing both the electric and gas kilns as well as increase their sensitivity to design elements as they relate to ceramics.

ART 343. ADVANCED BRONZE CASTING. 3 Hrs.
This course is a continuation of Bronze Casting 2. Students will use skills learned in previous semesters to create well-crafted finished bronze sculptures.

ART 351. FOUND OBJECT WELDED SCULPTURE. 3 Hrs.
This course is a continuation of ART 251 Art Welding. Students will use steel found objects to fabricate free standing sculptures using a flux core MIG welder.

ART 360. CONTEMPORARY ART HISTORY. 3 Hrs.
This course explores the various artistic movements from 1945 to the present. Emphasis will be placed on critical theory, historical context, and familiarity with images and artists.

ASTRONOMY (ASTR)

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)

BIOLOGY (BIOL)

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)

BIOL 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)

BIOL 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)

BIOL 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)

BIOL 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)

BIOL 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)

BIOL 109. ANATOMY AND PHYSIOLOGY FOR ALLIED HEALTH. **4 Hrs.**
This class is a survey class in human anatomy and physiology for those students entering the Allied Heath 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)

BIOL 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.

BIOL 113. ANATOMY AND PHYSIOLOGY FOR ALLIED HEALTH LAB. **1 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)

BIOL 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)

BIOL 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 microorganisms, 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)

BIOL 201. MICROBILOGY LABORATORY 1 Hr.
Biology 201 is designed to accompany Biology 200 (Microbiology) lecture to practical laboratory experiences for students requiring a basic medical microbiology course to meet program requirements or as a science elective. Topics include staining procedures, observations and study of fixed specimens using the microscope, and culturing and identifying living microorganisms. (2 laboratory hours per week) (Prerequisites: BIOL 107 and 108; or BIOL 101/103 and 102/104) (Prerequisite/Co-requisite: BIOL 200) To be offered in Spring Semester only.

BIOL 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) Offered only In the Fall Semester of odd numbered years.

BIOL 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)

BIOL 371. PRINCIPLES OF GENETICS. 4 Hrs.
Introduction to genetics principles, including common terms used in genetics, basic concepts (DNA structure and function, Mendelian genetics, genetics of eukaryotes and procaryotes, recombinant DNA technology) and practical experience in techniques used in genetics research. (3 lecture hours and 3 lab hours per week) (Prerequisites: BIOL 101/103; BIOL 102/104; CHEM 115 or consent) Offered only In the Fall Semester of even numbered years.

BIOL 436. GENERAL ANIMAL PHYSIOLOGY. 3 Hrs.
In-depth current treatment of physiological principles which operate at various levels of biological organization in animals of diverse taxonomic relationships, with emphasis on vertebrate physiology. (3 lecture hours per week) (Prerequisites: BIOL 101/103; BIOL 102/104) Offered in Spring Semester of even numbered years

BIOL 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. (3 lecture hours per week) (Prerequisites: BIOL 371 or the following: BIOL 101/103, BIOL 102/104, and consent of instructor) Offered in the Spring Semester of even numbered years.

BUSINESS TECHNOLOGY (BTEC)

BTEC 115. BEGINNING KEYBOARDING. 3 Hrs.
Using Microsoft Word, students are taught keyboard touch control and techniques to build basic speed and accuracy. Emphasis is on formatting e-mails, reports, letters, memos, tables, and other kinds of personal and business communications. (EDGE credit available)

BTEC 116. INTERMEDIATE KEYBOARDING. 3 Hrs.
This is a sequel course to BTEC 115. This course uses Microsoft Word and continues the development of basic keyboarding skills. The course focuses on formatting various kinds of business correspondence, reports, tables, electronic forms, and desktop publishing projects from arranged, unarranged, handwritten,

and rough-draft sources with an emphasis on speed and accuracy. International formatting, legal, medical, and employment documents are covered. (Prerequisite: CS 101)

BTEC 204. ADVANCED EXCEL. 3 Hrs.
Using Microsoft Excel, students are taught Excel advanced spreadsheet formatting. Topics include advanced formulas and logical functions, mathematical computations, data analysis, lookups, scenarios, goal seek, chart presentations, pivot tables and charts, data imports, exporting, and linking multiple workbooks, with an emphasis on critical thinking, problem solving, and decision making for marketing, finance, accounting, economics, and management. (Prerequisite: BTEC 275)

BTEC 206. ADVANCED ACCESS. 3 Hrs.
Using Microsoft Access, students are taught advanced Access data management to create fields, tables, queries, calculations, charts, forms and reports, data imports, exporting, and relationship databases, with an emphasis on critical thinking, problem solving, and decision making for marketing, finance, accounting, economics, and management. (Prerequisite: BTEC 275)

BTEC 210. COMPUTERIZED ACCOUNTING. 3 Hrs.
This course covers small business accounting using computerized software. Topics include creating a chart of accounts, recording customer and vendor transactions, processing payroll, and printing reports. In addition, setting up a new company is covered as well as advanced topics such as exporting to Excel software, ratios, and using the audit trail with an emphasis on analysis of business transactions and accounting reports. (Prerequisite: CS 101)

BTEC 235. MICROSOFT WORD/WINDOWS. 3 Hrs.
Using Microsoft Word, students are taught how to create and customize documents; format text and paragraphs; use themes, SmartArt and styles, manipulate text; control pagination; work with visual content; structure and organize content using Quick Parts, tables and lists; calculate with equations; modify tables and charts; insert and format references and captions; merge documents and data sources; compare and merge document versions; insert, modify, and delete comments; prepare documents for sharing, control document security, and create web pages. (Prerequisite: CS 101)

BTEC 253. MEDICAL TERMINOLOGY. 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.

BTEC 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)

BTEC 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. (Prerequisites: BTEC 253 and CS 101)

BTEC 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)

BTEC 265. MULTIMEDIA PRESENTATIONS. 3 Hrs.
This course is designed to provide students with the use of multimedia information and communication capabilities available via the Internet. Students learn how to locate, access, and retrieve a variety of media including text, images, audio, and video, as well as how to develop web resources including social networking. (Prerequisite: CS 101)

BTEC 270. INTRODUCTION TO WEB PAGE DESIGN. 3 Hrs.
This course introduces students to the fundamentals of web development with an emphasis on good design practices and effective troubleshooting techniques. Web design software tools are used to create and manage dynamic web sites. Topics include formatting text with CSS, working with images, hyperlinks, using tables and forms, creating web page layouts, publishing a web site and social networking tools. (Prerequisite: CS 101)

BTEC 275. ADVANCED MICROCOMPUTER APPLICATIONS FOR BUSINESS. 3 Hrs.
This course is an advanced integration of Microsoft Office 2013 using Excel, Access, Word, PowerPoint, the Internet and social networking with an emphasis on advanced business applications using critical thinking, problem solving, and decision making. [Common Professional Component Course] (Prerequisite: BTEC 235)

BTEC 295. PROFESSIONAL DEVELOPMENT SEMINAR. 3 Hrs.
This course provides students with an opportunity to explore business procedures and practices used in the 21st century workplace. Topics include international business practices, technology, electronic customer service, conflict resolution, Internet research, personnel training and professional growth, conferences, critical thinking, problem solving, decision making and various business communication competencies with an emphasis on using Microsoft Office. This course is the capstone for the Business Technology (BTEC) AAS degree and requires capstone assessment project and exam. Capstone Course for AAS in Business Technology. Requires departmental assessment project and exam. (Prerequisite: BTEC 275)

CERTIFIED NURSING ASSISTANT (CNA)

CNA 101. CERTIFIED NURSING ASSISTANT. 7 Hrs.
This entry level course onto the nursing career ladder is designed to meet the WV State Requirements to prepare the student to work in a long-term care facility and sit for the State's certification examination to be a Certified Nursing Assistant. Additional hours have been incorporated to train students to work in any health care facility as a nursing assistant (hospital, home health, assisted living. This course includes 52 hours of classroom instruction, 62 hours of clinical instruction at an approved long term care facility, and 36.5 hours of lab skills practice.

CHEMICAL TECH (CTEC)

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)

CTEC 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)

CHEM 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)

CHEM 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)

CHEM 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)

CHEM 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)

CHEM 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.)

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

CHEM 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)

CHEM 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)

CHEM 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)

CHEM 410. INTRODUCTORY BIOCHEMISTRY. 3 Hrs.
Introduction to chemistry of cellular constituents (proteins, amino acids, carbohydrates, lipids, nucleic acids, enzymes and coenzymes) and their metabolism in animals and plants.(Prerequisite: CHEM 115, CHEM 116, CHEM 233/235 or equivalent or Consent) Offered in the Spring Semester of odd numbered years.

CHEM 412. INTRODUCTION TO BIOCHEMISTRY WET LABORATORY. 1 Hr.
Introduction to Biochemistry Wet Laboratory. Classic and modern laboratory techniques in biochemistry. (Prerequisite or Co-requisite: CHEM 410 or Consent) Offered in the Spring Semester of odd numbered years.

CHILD DEVELOPMENT (CDEV)

CDEV 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: Placement test or ENGL 101)

CDEV 155. GUIDING YOUNG CHILDREN. 3 Hrs.
Investigates developmentally and individually appropriate guidance of young children's behavior. Discusses common misbehavior, and mistaken behavior, in early childhood settings and non-punitive strategies for addressing the behavior. Addresses discussing children's behavior with parents and caregivers. (Prerequisite: Placement test or ENGL 101)

CDEV 205. YOUNG CHILDREN WITH SPECIAL NEEDS. 3 Hrs.
An introduction to young children with special needs addressing legal and ethical considerations, family and community involvement in meeting the needs of exceptional children. Includes assessment, identification, and planning to meet the needs of all children. (Prerequisite: Placement test or ENGL 101)

CDEV 210. CURRICULUM AND STRATEGIES FOR EARLY CHILDHOOD PROGRAMS. 3 Hrs.
Explores curricula associated with early childhood programs, organizing and preparing experiences for young children including creative play, and integrating experiences in early childhood programs. (Prerequisite: Placement test or ENGL 101)

CDEV 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. (Prerequisite: Placement test or ENGL 101)

CDEV 242. PRESCHOOL DEVELOPMENT. 3 Hrs.
Explores the social-emotional, cognitive, and physical development of children from 3 to 6 years. Examines models and international perspectives. Apply knowledge of preschoolers to curricular choices. Discuss home, school, and community connections. (Prerequisite: Placement test or ENGL 101)

CDEV 243. INFANT AND TODDLER DEVELOPMENT. 3 Hrs.
Explores the social-emotional, cognitive, and physical development of children from prenatal period through age two. Relates the significance of relationships. Apply knowledge of young children to the guidance and care of infants and toddlers. (Prerequisite: Placement test or ENGL 101)

CDEV 251. CHILD DEVELOPMENT CAPSTONE 1. 4 Hrs.
Practicum experience in a setting related to professional goals of Child Development student. Capstone Course. (Departmental approval required. (Co-requisite: CDEV 255)

CDEV 255. CHILD DEVELOPMENT SEMINAR. 3 Hrs.
Weekly seminar focusing on students' practicum experiences and other topics and issues that are timely to the profession. Concurrent enrollment with CDEV 251 required. (Co-requisite: CDEV 251)

CDEV 320. ETHICS AND ADMINISTRATION 1. 3 Hrs.
Background and ethics issues related to administering early childhood programs. Emphasizes managing

operations and budget, meeting state regulations, and licensing requirements and building programs.

CDEV 325. ETHICS AND ADMINISTRATION 2. 3 Hrs.
Background and ethics issues related to administering early childhood programs. Emphasizes relationships with parents, relationships with community, and supervision of personnel. Focus on building programs.

CDEV 332. SCIENCE EXPLORATION FOR PRE-K. 3 Hrs.
Developmentally appropriate methods of teaching science for preschoolers, toddlers, and infants.

CDEV 335. CREATIVE EXPERIENCES. 3 Hrs.
Examines theories of play and creative expression in early childhood education. Study of methods for integrating play, art, construction, music, movement, dance, and drama with content standards throughout the curriculum.

CDEV 336. EARLY SOCIAL STUDIES. 3 Hrs.
Theories and methods of social studies education in early childhood education.

CDEV 405. PRACTICUM IN EARLY CHILDHOOD. 3 Hrs.
Advanced practicum experience in a setting related to professional goals of child development student. Capstone course. (Corequisite: CDEV 406 Seminar.)

CDEV 406. SEMINAR IN EARLY CHILDHOOD. 4 Hrs.

Seminar focused on practicum experiences and topics relevant to early childhood professionals.

COMMUNICATION STUDIES (COMM)

COMM 111. FUNDAMENTALS OF SPEECH. 3 Hrs.
Principles of public communication; public speaking. (Prerequisite: Placement Test)

COMM 112. INTERPERSONAL COMMUNICATION. 3 Hrs.
One-to-one communication; strengths and weaknesses of one's own communication skills; approaches to conflict; listening; verbal and nonverbal interactions. (Prerequisite: Placement Test)

COMM 131. ORAL INTERPRETATION. 3 Hrs.
Theory and practice in interpreting literature orally; selection, analysis, and presentational techniques; poetry, prose, and drama are explored. (Prerequisite: COMM 111)

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

190	The Communication Process	(1)
191	Listening	(1)
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)

COMM 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.

COMM 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: COMM 210)

COMM 281. CONTEST SPEAKING: DEBATE. 1 Hr.
Concentrates on events that are prepared and memorized in advance.

COMM 282. CONTEST SPEAKING: PLATFORM. 1 Hr.
Concentrates on the events that are original but which are not completely prepared and memorized in advance: extemporaneous and impromptu.

COMM 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.

COMM 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.

COMM 295. SEMINARS IN COMMUNICATION. 1-3 Hrs.

COMM 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: ENGL 101, 102, COMM 111 or COMM 112)

COMM 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. (Prerequisite: ENGL 101, 102, COMM 111 or COMM 112)

COMM 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. (Prerequisite: ENGL 101, 102, COMM 111 or COMM 112)

COMM 308. NONVERBAL COMMUNICATION. 3 Hrs.
A study of nonverbal behavior as it occurs in personal, workplace, and cross-cultural settings. (Prerequisites: ENGL 101 and COMM 111 or 112)

COMM 310. ARGUMENTATION AND DEBATE 3 Hrs.
This course provides an overview of the principles of argumentation, logic, and reasoning, evidence, forms of debate, and decision making. Application of the principles will take the form of in-class debates. (Prerequisite: ENGL 101, 102, COMM 111)

COMM 316. INTERCULTURAL COMMUNICATION. 3 Hrs.
A comprehensive overview of communication in various cultures. (Prerequisites: 48 college credit hours and ENGL 101, 102, COMM 111 or COMM112)

COMM 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 and COMM 111)

COMM 460. COMMUNICATION SENIOR CAPSTONE. 1 Hr.
This course provides students with an opportunity to demonstrate comprehensive learning and application in Communication Studies. The course will also focus on final preparation for work and/or graduate school. (Prerequisite: 15 hours of upper division COMM courses)

COMPUTER AND INFORMATION TECHNOLOGY (CIT)

CIT 101. PC MANAGEMENT AND MAINTENANCE. 5 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 or concurrent)

CIT 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)

CIT 105. NETWORK FUNDAMENTALS. (Cisco #1) 5 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, sub-netting, data encapsulation, basic network design and troubleshooting. (Co-requisite: CIT 101 or concurrent)

CIT 106. ROUTERS & ROUTING FUNDAMENTALS (Cisco #2). 5 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)

CIT 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)

CIT 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)

CIT 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. (Prerequisite: CS101 or concurrent).

CIT 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. (Prerequisite: CS101 or concurrent).

CIT 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 Circuits, Parallel Circuits, Complex Circuits and Network Theorems. (Prerequisites: MATH 111 or 126 or concurrent) (Co-requisite: CIT 140L)

CIT 140L. ELECTRICITY & DIGITAL ELECTRONICS FUNDAMENTALS LAB. 1 Hr.
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)

CIT 205. INTERMEDIATE ROUTING & SWITCHING (Cisco #3). 5 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)

CIT 206. WAN THEORY & DESIGN (Cisco #4). 5 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)

CIT 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 114)

CIT 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: CS101 or concurrent).

CIT 260. CAPSTONE PROJECT. 2 Hrs.
Students will conduct a semester long major networking project. The project will include proper network design, documentation and an oral presentation. Capstone course. (Prerequisite: Grade of "C" or better in CIT 205. Co-requisites: CIT 206 and CIT 211 and CIT 240)

CIT 260L. CAPSTONE LABORATORY. 1 Hr.
Students will sit for at least one of the following IT industry certifications: Cisco CCNA, Microsoft MCP, CompTIA A+, Linux+, Server+, or Network+. Students must pass the certification to pass the class.

CIT 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)

CIT 305. ADVANCED ROUTING (Cisco #5). 5 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, multi-area OSPF, EIGRP, route optimization, BGP, scaling BGP, and security, (Prerequisite: Grade of "C" or better in CIT 206)

CIT 306. SECURE CONVERGED WAN's (Cisco #6). 5 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)

CIT 310. FUNDAMENTALS OF VOICE AND DATA CABLING. 5 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.

CIT 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.

CIT 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 114)

CIT 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)

CIT 333. MANAGING MS-SQL SERVER. 3 Hrs.
Managing MS-SQL Server will teach students to install, configure, maintain, and troubleshoot a Microsoft SQL Server.

CIT 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)

CIT 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, 114; Grade of A in CIT 211; Instructor permission)

CIT 405. MULTI-LAYER SWITCHED NETWORKS (Cisco #7). 5 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)

CIT 406. OPTIMIZING NETWORK TECHNOLGIES (Cisco #8). 5 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 AuotQoS, Implementing Wireless Scalability. (Prerequisite: CIT 305 and CIT 405)

CIT 410. AUTOMATING SYSTEM ADMINISTRATION. 3 Hrs.
Automating System Administration will teach students how to use a modern, cross-platform scripting language to automate complex and repetitive systems administrative tasks.

CIT 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)

CIT 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 114; co-requisite CIT 211)

CIT 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. Capstone course. (Prerequisites: STEM 420)

COMPUTER SCIENCE (CS)

CS 100. COMPUTER LITERACY. 3 Hrs.
Students will learn basic computer concepts relating to current operating systems, the Internet, setting up a home network, using multimedia and photo functions. Word processing, spreadsheet and presentation software will be covered.

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.

CS 102. SPREADSHEET APPLICATIONS. 2 Hrs.
Course teaches the use, design, and application of Excel spreadsheets from a technician viewpoint. Topics include: creating and using spreadsheets, predefined functions, graphs and charts, filters, and application design and development.

CS 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

CS 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)

CS 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.

CS 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. (Prerequisite: CS 101 or concurrent).

CS 122. COMPUTER PROGRAMMING 2. 3 Hrs.
Continuation of CS 121. Top-down design, modular programming, string processing, elementary data structures, basic disk I0 and recursion. (Prerequisite: CS 121)

CS 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.

CS 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 I0. Recommended for students preparing for programming in business. (Prerequisite: CS 121)

CS 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)

CS 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.

CS 129. WEB PAGE DESIGN. **3 Hrs.**
Students will learn how to create web sites using Adobe Dreamweaver by critical thinking, problem solving approaches involving hands-on projects. Students must pass an industry-standard external assessment. (Prerequisite: CS 101 or concurrent).

CS 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.

CS 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.

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

CS 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)

CS 215. RPG PROGRAMMING. **3 Hrs.**
Structure and syntax of language designed for report generation; auxiliary file creation; updating and generation of multistep reports. (Prerequisite: CS 209)

CS 220. WEB APPLICATION PROGRAMMING **3 Hrs.**
Students learn how to design, develop, and deployASP.NET web applications.

CS 221. ALGORITHM ANALYSIS. **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)

CS 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)

CS 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 basic of digital image editing with Photoshop. File formats, filters, layers, color correction, sharpening, transparency, color matching and drawing tools will be covered.

CS 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)

CS 260. COMPUTER SCIENCE CAPSTONE **3 Hrs.**
This course is the final capstone project for the CS degree. It is designed to give the student supervised experience in a real world software development. The student will undertake a real world project that will encompass all the different subject areas covered in the CS program. Students will also sit for an industry certification exam. (Prerequisites: CS 301, CS 220, and CS 221)

CS 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)

CS 300. COMPUTER GRAPHICS. **3 Hrs.**
Introduction to computer graphics; hardware; algorithms; support software; user interface; business application. (Prerequisites: CS 221 and MATH 128)

CS 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 121 or Instructor consent)

CS 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)

CS 303. ANIMATION FOR ADVERTISING. **3 Hrs.**
This course covers creating 3D advertisements for television, electronic signage and web applications using industry and standard software.

CS 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.

CS 309. OPERATING SYSTEMS **3 Hrs.**
Students learn the history and internal workings of operating systems software, the fundamentals of UNIX operating system, and learn the C programming language. (Prerequisites: “C” or better in CS 221 and MATH 128)

CS 318. DISCRETE MATH **3 Hrs.**
Topics include: Logic and set theory, functions, algorithms, recursion, combinatorics, and graphs. (Prerequisites: MATH 126, or MATH 112 or a satisfactory score on placement test)

CS 320. EXTENSIBLE MARKUP LANGUAGE (XML) **3 Hrs.**
This course teaches how to use extensible markup language (XML) to represent data and exchange data between separate systems with the use of serialization/deserialization and XML Stylesheet Language Transforms (XSLT). (Pre-requisites: CS 122)

CS 321. MOBILE APPLICATION DEVELOPMENT. **3 Hrs.**
This course teaches how to design, author, and publish applications for mobile devices such as smart phones and tablets. (Pre-requisites: CS 122)

CS 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 Action-Script, adding sound and video, and begin using advanced Action-Script. CS 323 covers more material than CS 123.

CS 327. FLASH INTERACTIVITY & GAMES. **3 Hrs.**
This course teaches interactivity, game programming and implementing mathematical functions within the Flash development environment. Sophisticated animated interfaces, Action-Script and virtual reality concepts are employed in an application driven approach. (Prerequisites: CS 123 or CS 323)

CS 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.

CS 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.

CS 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.

CS 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)

CS 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)

CS 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)

CS 404. WEB SERVICES **3 Hrs.**
Students learn the use of SOAP and REST technologies, and using the Internet as a platform for building distributed information systems. (Prerequisites: "C" or better in CS 220 and CS 221)

CS 420. ADVANCED WEB DEVELOPMENT **3 Hrs.**
Students learn the use of the Model/View/Controller (MVC) programming paradigm in web application development. (Prerequisites: "C" or better in CS 220 and CS 221)

CS 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.

CS 460. SENIOR PROJECT. **3 Hrs.**
Students will present a systems analysis and design project as a final senior project in Computer Information Systems. Capstone course. (Prerequisites: STEM 420)

CRIMINAL JUSTICE (CJ)

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.

CJ 112. CRIMINAL AND CONSTITUTIONAL LAW. **3 Hrs.**
Covers substantive criminal and constitutional laws and how they relate to the criminal justice system. Examination of case, common, and penal law in conjunction with the Bill of Rights.

CJ 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.

CJ 123. INTRODUCTION TO CORRECTIONS. **3 Hrs.**
A survey of the history of corrections, the philosophy of punishment, historical and contemporary correctional theories, and correctional institutions, services and programs with an emphasis on correctional policies.

CJ 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.

CJ 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 prepare data and provide courtroom information for prosecution purposes. (Prerequisite: ENGL 101 with grade C or better)

CJ 160. CRISIS/DOMESTIC COMMUNICATION. **3 Hrs**.
A course providing knowledge of crisis theory and the development of communication skills pertaining to intervention services for family violence, sexual assault and other crisis situations.

CJ 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. It examines 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. (Prerequisite: CJ 111 and SOC 101)

CJ 212. ETHICS IN CRIMINAL JUSTICE. 3 Hrs.
An introduction to fundamental ethical theory, doctrines, controversies, and the rules of moral judgment. Emphasis is place on reforms and unethical themes in criminal justice and criminal justice management. (Prerequisite: CJ 111 with a grade of C or better)

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

CJ 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 with a focus on rehabilitation.

CJ 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 who are women.

CJ 231. CRIMINAL INVESTIGATIONS. 3 Hrs.
Introduces the investigative procedures for concluding that a crime was committed. The course also introduces the processes of recognizing, collecting and preparing physical evidence for transmission to court and preparing an investigation report in the potential prosecution of a criminal case.

CJ 232. CRIMINOLOGY 3 Hrs.
This course provides and introduction to the sociological study of crime and criminal behavior, focusing on the various theories of crime causation. Criminological methods of inquiry and societal reactions to crime will also be addressed.

CJ 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. 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.

CJ 251. CRIMINALISTICS. 3 Hrs.
This course studies 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.

CJ 255. DRUGS IN AMERICA. 3 Hrs.
A course designed to provide an overview of drug issues in America, including an understanding of drugs and substance abuse, historical and contemporary responses to the drug problem, and the role of the criminal justice system in responding to substance abuse through prevention and treatment.

CJ 270. COURTROOM PROCEDURE. 3 Hrs.
An introduction and overview of courtroom procedures, to include the historical influences on the court system, the steps In the criminal justice system prior to trial (including investigation, arrest, and pre-trial proceedings), and the trial process itself and post-trial proceedings such as sentencing and appeals.

CJ 280. DEATH INVESTIGATIONS. 3 Hrs.
This course will cover the procedures in conducting death investigations from crime scene through courtroom trial of death investigations. Topics include the role of the medical examiner/coroner, cause and manner of death, identifying human remains, the autopsy and interpretation of various types of

injuries, equivocal death investigations and legal considerations In death cases.

CJ 290. PROFESSIONALISM IN CRIMINAL JUSTICE **3 Hrs.**
Provides instruction on the many facets of professional behavior within the Criminal Justice system. This course examines the nuances of establishing a professional identity associated with being a criminal justice practitioner. The capstone course for the Certificate in Criminal Justice.

CJ 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. (Serves as the capstone for the AAS degree and is to be taken the semester of graduation)

CJ 301. HISTORY OF CRIME AND PUNISHMENT. **3 Hrs.**
The development of the legal world with a focus on the history of criminal activity and punishment from recorded history through the modern age. (Prerequisite: CJ 111 with a grade of C or better)

CJ 302. DEVIANT BEHAVIOR. **3 Hrs.**
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.(Preq: SOC 101 and for CJ 302; Requires admission to the BASCJ program or signature of the program coordinator)

CJ 305. INTERVIEWING. **3 Hrs.**
This course concentrates on the theories and applications of law enforcement interviewing techniques. The learner examines the issues and impacts of proper and improper application of interviewing skills on the criminal justice system. It will also examine the management of crises within the criminal justice field. It looks at the response of the criminal justice field to major incidents and the management of those incidents. (Prerequisite: CJ 111 with a grade of C or better. Requires admission to BAS CJ Program or signature of program coordinator)

CJ 306. CRISIS MANAGEMENT **3 Hrs.**
This course will examine the role of criminal justice in the proper response to and management of crisis incidents. The course will focus on the Federal Emergency Management Agency's (FEMA) National Incident Management System (NIMS) and Incident Command System (ICS). The course will also explore appropriate responses for interacting with individuals experiencing a crisis, including the purpose of crisis intervention team models. (Prerequisites: CJ 111 with C or better. admission to BAS in Criminal Justice Program or signature of program coordinator.)

CJ 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 111 and 112. Requires admission to BAS CJ Program or signature of Program Coordinator)

CJ 315. POLICE TECHNOLOGY. **3 Hrs.**
This course will cover the history, current and future uses of technology in the criminal justice field. Attention will be given to technical aspects of various forms of technology, implementation and interoperability, and ethical and legal implications.(Prerequisite: CJ 111 with a grade of C or better. Requires admission to BAS CJ Program or signature of Program Coordinator)

CJ 320. 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. Examinees the executive's responsibilities, provides for implementation of command policy and studies the auxiliary services in support of police operations. (Prerequisites CJ 111 with a C or better. Admission to the BAS In

Criminal Justice Program or signature of the coordinator.)

CJ 321. EVIDENCE COLLECTIONS AND HANDLING. 3 Hrs.
This course will cover the proper ways to locate, identify, collect and process evidence at a crime scene, the proper way to request lab examinations and the proper ways to submit to a crime lab. (Prerequisite: CJ 111 with a grade of C or better. Requires admission to BAS CJ Program or signature of Program Coordinator)

CJ 330. FIREARMS AND BALLISTICS. 3 Hrs.
This course will examine the history of firearms as related to the criminal justice field. It will also examine firearms and ballistics evidence collection at crime scenes and their submission to crime labs for further testing. (Prerequisite: CJ 111 with a grade of C or better. Requires admission to BAS CJ Program or signature of Program Coordinator.)

CJ 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. (Requires admission to BAS CJ Program or signature of Program Coordinator)

CJ 341. FINGERPRINTS AND TRACE EVIDENCE. 3 Hrs.
This course will examine the history of fingerprints as an identification procedure n the criminal justice field. The course will explore the collection procedures in collecting fingerprints and trace evidence at a crime scene. It will also cover processing of trace evidence for submission to crime labs for further testing. (Prerequisite: CJ 111 with a grade of C or better. Requires admission to BAS CJ Program or signature of Program Coordinator)

CJ 355. CRIME SCENE INVESTIGATIONS. 3 Hrs.
This course will cover the evolution of the crime scene investigations. It will cover how to conduct crime scene investigations from first response to court room presentation. It will also cover future trends in crime scene investigations. This may serve as a lab science for the CJ program. (Prerequisite: CJ 111 with a grade of C or better. Requires admission to BAS CJ Program or signature of Program Coordinator)

CJ 360. FRAUD EXAMINATION. 3 Hrs.
Delve into the world of white-collar crime and forensic accounting. Study methods of detection, prevention and investigation. (Prerequisite: CJ 111 with a grade of C or better. Requires admission to BAS CJ Program or signature of Program Coordinator)

CJ 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.

CJ 375. CRIME SCENE PHOTOGRAPHY. 3 Hrs.
Focus on developing skills in photographing a crime scene. Includes black and white film, and paper, and color films and paper use and developing of photos. Also includes tools and equipment taking basic crime scene photographs and chemical process used in processing crime scene photos. (Prerequisite: CJ 111 with a grade of C or better. Requires admission to BAS CJ Program or signature of Program Coordinator)

CJ 388. BLOODSTAIN PATTERNS. 4 Hrs.
A practice-oriented class on the techniques and methods of identifying and interpreting blood spatter evidence. Topics includes fundamentals of bloodstain evidence, low velocity impact and angular bloodstains, medium and high velocity bloodstains, significance of partially dried, clotted, aged, physically altered bloodstains and others. Course will serve as a one lab science course for BAS CJ program. (Requires admission to BAS CJ Program or signature of Program Coordinator. Must have taken CJ-355 and earned a C or better.)

CJ 405. ADVANCED CRIME SCENE MANAGEMENT. 3 Hrs.
This course will cover advanced crime scene management theories and practices, advanced digital crime scene management software and equipment, and case law and other legal considerations which impact securing and processing crime scenes. (Prerequisite: CJ 111, CJ 321, and CJ 355 with grade of C or better)

CJ 410. ADVANCED CRIME SCENE PHOTOGRAPHY. 3 Hrs.
This course concentrates on the use of the Single Lens Reflex (SLR) photographic equipment as it relates to the criminal justice field and crime scenes. The course also covers the proper ways to take, keep and store crime scene photographs with an emphasis on macro and other special photography techniques. (Requires admission to BAS CJ Program or signature of Program Coordinator)

CJ 440. RESEARCH METHODS IN CJ. 3 Hrs.
The student will explore concepts and research methods within the Criminal Justice field and how it relates to other social science. Emphasis will be place on the continued development of superior writing skills and statistical evaluations of information. (Prerequisites: CJ 111 and ENGL 102 with a grade of C or higher and MATH 126 or 211. Requires admission to BAS CJ Program or signature of Program Coordinator)

CJ 460. CAPSTONE. 2 Hrs.
Student will conduct a semester long project in the criminal justice field that will be concluded with a research report and oral presentation. Taken the semester of graduation. (Prerequisites: CJ 111 and ENGL 102 with a grade of C or better. Requires Program Coordinator signature)

DIVERSIFIED AGRICULTURE (DAGR)

DAGR 111. PROFESSIONS IN AGRICULTURE. 1 Hrs.
Intro DAGR course designed to expose students to a wide range of jobs in agriculture and related fields as well as grants and assistance programs available to producers. Students will learn about basic job tasks and hiring requirements. Online, offered every semester.

DAGR 112. SOIL SCIENCE. 4 Hrs.
Lecture/lab course designed to provide students with an understanding of soil formation and discusses basic physical, chemical, ecological and morphological properties that affect soil characteristics in managed and natural systems. This course requires indoor and outdoor labs as well as off campus field trips. On Campus and Blended- Offered Fall Semester

DAGR 122. PLANT SCIENCE AND PROPAGATION 3 Hrs.
Lecture course with hands on component designed as an introduction to the principals of plant structures, plant growth, general crop production, and plant multiplication methods. On Campus and Blended- Offered Summer Term

DAGR 124. ANIMAL PRODUCTION 3 Hrs.
Lecture course provides students with an introduction to animal and livestock industries, production systems, and markets. Students will be required to attend field trips to area animal production farms to see a variety of production methods. On Campus and Blended- Offered Spring Semester

DAGR 201. VEGETABLE CROPS. 3 Hrs.
Lecture course designed with hands on instructional components to introduce students to success fruit and vegetable production methods including, site selection, preparation, plant selection, growth requirements, management strategies, basic pest and diseases, harvest, storage, and preservation. On Campus and Blended- Offered Summer Term

DAGR 203. FORAGE CROPS. 3 Hrs.
Lecture course designed to provide students with an introduction to forages and grain crops and their morphology and development. Forage establishment, management, and utilization strategies for the MOV region will also be emphasized. Several field trips are require in this course. On Campus and Blended- Offered Fall Semester

DAGR 210. VALUE ADDED FOOD PROCESSING 3 Hrs.
Students will learn a variety of processing techniques for fresh fruits and vegetables that add value to the produce. Hands on instruction will be supplemented with online lectures.

DAGR 222. LANDSCAPE AND TURF MANAGEMENT 3 Hrs.
This lecture course designed to provide students with an introduction to the landscape and turf industry including planning, maintenance and management operations, equipment, and public relations. Several field trips are required for this course.

DAGR 223. GREENHOUSE MANAGEMENT. 3 Hrs.
Lecture course design to provide students with an in-depth understanding of the principles of greenhouses and controlled environments operation and management. Students will learn about greenhouse structural designs as well as components. Students will learn how environmental factors (i.e. substrates, fertilizers, water, light, etc.) are monitored and controlled in greenhouses to maximize production. On Campus and Blended- Offered Spring Semester

DAGR 224. PEST AND DISEASE MANAGEMENT 3 Hrs.
This course is designed to provide students with a knowledge of insects, major agricultural pests, and diseases, as well as their appropriate control methods.

DAGR 270. PROFESSIOANL FIELD EXPERIENCE 3 Hrs.
DAGR students will gain knowledge and work experience at an agricultural job.

DAGR 280. AGRICULTURAL BUSINESS PLANNING 1 Hr.
DAGR Capstone course. Should be completed during student's final semester in program. Students will use the knowledge they have gained in other Diversified Agriculture courses to complete an agricultural business plan and class presentation.

DRAFTING (DRAF)

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.

DRAF 103. MECHANICAL BLUEPRINT READING. 2 Hrs.
Reading of machine prints and drawings commonly used in industry and trades.

DRAF 111. FUNDAMENTALS OF DRAFTING USING AUTOCAD. 3 Hrs.
Graphic designs and drawings developed by use of computer. Drawings include orthographic, pictorial, electrical, auxiliary, isometric, mechanical and architectural.

DRAF 112. ADVANCED DRAFTING TECHNIQUES. 3 Hrs.
Continuation of DRAF 111. Working drawings, intersections, geometric space problems, and engineering drawings. (Prerequisite: DRAF 111 or DRAF 102 or DRAF 314)

DRAF 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 or DRAF 102 or DRAF 314)

DRAF 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)

DRAF 115. COMPUTERAIDED 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 or DRAF 102 or DRAF 314)

DRAF 116. 3D MODELING WITH AUTOCAD. 3 Hrs.
Introduction to customizing computer-aided drafting software using AutoCAD. Topics covered are 3D drawing, solid modeling, symbol libraries, slides, screen menus, icon menus and tablet menus. (Prerequisite: DRAF 111 or DRAF 102 or DRAF 314)

DRAF 122. FUNDAMENTALS OF 3D STUDIO MAX. 3 Hrs.
Students will learn the fundamentals of creating 3D models in an environment that is used in multiple fields of study such as Design, Engineering and Animation. (Prerequisite:DRAF 111 or DRAF 102 or DRAF 314).

DRAF 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 or DRAF 102 or DRAF 314)

DRAF 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. (Prerequisite: DRAF 111 or DRAF 102 or DRAF 314)

DRAF 220. FUNDAMENTALS OF MICROSTATION WITH 3D. 3 Hrs.
Graphic designs and drawings developed by use of computer. Drawings include orthographic, pictorial, electrical, auxiliary, isometric, mechanical and architectural. An introduction to 3D modeling using CAD is also covered.

DRAF 225. ADVANCED WORK WITH 3D STUDIO MAX. 3 Hrs.
This is a continuation of DRAF 122. Students will learn advanced techniques and uses of creating 3D models in an environment that is used in multiple fields of study such as Design, Engineering and Animation. (Prerequisite: DRAF 122)=

DRAF 226. 3D PARAMETRIC MODELING WITH INVENTOR. 3 Hrs.
Students will learn the fundamentals of creating 3D models using feature based modeling. This method starts with rough sketches that are transformed into intelligent models by applying dimensions and constraints. The model can then be refined by adjusting these constraints using engineering design data. (Prerequisite: DRAF 111 or DRAF 102 or DRAF 314)

DRAF 227. 3D MODELING AND SIMULATION WITH EON. 3 Hrs.
Students will learn the fundamentals of creating 3D models in an environment that is used in multiple fields of study such as Design, Engineering and Animation. Here they will also learn how to use these models in simulations that are used for training and marketing. (Prerequisite: DRAF 226)

DRAF 228. 3D ARCHITECTURAL DRAFTING. 3 Hrs.

Students will learn the fundamentals of creating 3D models in an architectural environment. Architectural drafting and design will be studied using 3D modeling that can be applied to many areas of engineering and construction. (Prerequisite: DRAF 116)

DRAF 229. AUTODESK REVIT. 3 Hrs.

Students will learn the fundamentals of creating 3D models in an architectural environment using Autodesk Revit. Architectural drafting and design will be studied using 3D modeling that can be applied to many areas of engineering and construction. (Prerequisite: DRAF 111 or DRAF 102 or DRAF 314)

DRAF 235. TOOLMACHINE DESIGN. 3 Hrs.
Advanced drafting; design and techniques used in planning and designing dies, jigs, and fixtures. (Prerequisite: DRAF 111 or DRAF 102 or DRAF 314)

DRAF 260. ENGINEERING TECHNOLOGY-DRAFTING OPTION CAPSTONE COURSE. 1 Hr.
This course serves as a culmination of the Engineering Technology – Drafting Option A.A.S. Degree program. A project is designed and completed that demonstrates competencies and skills learned within the courses of the program. Industry Standards Examinations are prepared for and taken. Capstone course.

DRAF 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.

DRAF 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.

ECONOMICS (ECON)

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. [Common Professional Component Course]

ECON 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. [Common Professional Component Course]

ECON 311. INTRODUCTION TO ECONOMIC DEVELOPMENT. 3 Hrs.
To present the concept of development in an evolutionary context with an emphasis on inclusiveness in a world of scarcity. Broad introduction to the principles and practices, tactics and techniques of local and regional economic development. (Prerequisites: ECON 201 and ECON 202)

ECON 320. MANAGERIAL ECONOMICS. 3 Hrs.
Managerial Economics is concerned with the application of economic principles and methodologies to business decision making. In this course students will increase their understanding of managerial economics and learn a variety of approaches that will allow them to solve business problems relating to costs, prices, revenues, profits, and competitive strategies. (Prerequisites: ECON 201, ECON 202)

ECON 331. FINANCIAL ECONOMICS. 3 Hrs.
This course emphasizes the financial system, financial institutions, central banks, monetary policy, foreign exchange rate and financial stability. The course studies the role of money and interest rates in the

operation of the U.S. economy. The aim is to give students an overview of the U.S. financial system and an understanding of the theory and practice of monetary policy. (Prerequisites: ECON 201, ECON 202)

ECON 413. ANALYSIS OF ENTERPRISES FOR ECONOMIC DEVELOP 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. (Prerequisites: ECON 201, ECON 202, ECON 311 or instructor's consent)

EDUCATION (EDUC)

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: Placement Test). (Co-requisites: 20 hours of field experience)

EDUC 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)

EDUC 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: Placement Test(Co-requisites: Field Experience)

EDUC 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: Placement Test)

EDUC 255. LANGUAGE ARTS & EMERGENT LITERACY. **3 Hrs.**
Focus on planning, selection, and use of programs for beginning readers. Includes study of strategies for oral skills and emergent literacy. Course will review evaluation strategies appropriate for early reading assessment.

EDUC 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)

EDUC 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 (Concurrent enrollment in EDUC 402 required)

EDUC 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)

EDUC 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)

EDUC 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)

EDUC 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. This class should be completed the semester prior to EDUC 401. (Prerequisites: Admission to Teacher Education Program) (Co-requisite: EDUC 330L)

EDUC 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. This class should be completed the semester prior to EDUC 401. (Prerequisite: Admission to Teacher Education Program) (Co-requisite: Enrollment in EDUC 330)

EDUC 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)

EDUC 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)

EDUC 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: EDUC 330 and EDUC 330L) (Co-requisites: EDUC 401L)

EDUC 401L. CLINICAL EXPERIENCE I. 0 Hrs.
A practicum offered on-site at a local Professional Development School in Early Childhood and Middle School Curriculum. Application and observation of curriculum design, instructional strategies, cooperative learning, planning models, teach, and technology are the focus of this experience. (Prerequisite: Admission to Teacher Education Program) (Co-requisite: Enrollment in EDUC 401)

EDUC 402. CURRICULUM IN EARLY EDUCATION 2 Hrs.
This class will focus on planning skills both in class and in the field experience. Interpersonal skills and decision-making skills will be exercised in team activities and experiences. Professional commitment, instructional skills, decision-making and diversity will be addressed both in the classroom activities and through field experiences. The application of technology will be emphasized and incorporate in class activities and in the field experience. (Prerequisites: Admission to Teacher Education Program) (Co-requisite: Field experience; enrollment in EDUC 302)

EDUC 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)

EDUC 404. STUDENT TEACHING - PRIMARY. 5 Hrs.
Eight weeks of full-time observation, planning, teaching and evaluation at the Primary (K-2) levels under the direct supervision of public school and college supervisors. (Prerequisite: Admission to Student Teaching

EDUC 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)

EDUC 406. STUDENT TEACHING IN MIDDLE SCHOOL MATH 5-8. 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)

EDUC 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)

EDUC 408. STUDENT TEACHING - INTERMEDIATE. 5 Hrs.
Eight weeks of full-time observation, planning, teaching, and evaluation at the Intermediate (3-6) levels under the direct supervision of public school and college supervisors. (Prerequisite: Admission to Student Teaching)

EDUC 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)

EDUC 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,or 409.)

ELECTRONICS (ELEC)

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)

ELEC 101L. ELECTRICITY & ELECTRONICS FUNDAMENTALS LAB. 1 Hr.
Application of concepts introduced in ELEC 101. (Co-requisite: ELEC 101)

ELEC 102. ELECTRICAL AND INSTRUMENTATION 1. 3 Hrs.
Provides an introduction to electrical theory, safety, Electrical & Instrumentation (E&I) testing and process technologies. Laboratory exercises are designed to provide hands-on practice of concepts.

ELEC 103. ELECTRICAL AND INSTRUMENTATION 2. 3 Hrs.
Study of flow, pressure, level, temperature, tubing conductors and drawings. Laboratory exercises are designed to provide hands-on practice of concepts.

ELEC 104. ELECTRICAL AND INSTRUMENTATION 3. **3 Hrs.**
Study of electronic components, hazardous locations, machine bending, and installation of tubing systems. Laboratory exercises are designed to provide hands-on practice of concepts.

ELEC 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)

ELEC 105L. DIRECT CURRENT CIRCUITS LAB. **1 Hr.**
Application of concepts introduced in ELEC 105. (Co-requisite: ELEC 105)

ELEC 115. RES/COMM ELECTRICAL 1. **3 Hrs.**
This course introduces students to the electrical trade through knowledge competencies and performance tasks. Topics include: hand bending, electrical theory, electrical test equipment, raceways, boxes, and fittings, conductors, and residential, commercial, and industrial wiring.

ELEC 116. RES/COMM ELECTRICAL 2. **3 Hrs.**
This course is a continuation of ELEC 115 with students expanding their knowledge competencies and performance capabilities within the electrical trade. Topics include: alternating current, motors, grounding, conductor installations, cable tray, and electric lighting.

ELEC 117. RES/COMM ELECTRICAL 3. **3 Hrs**.
This course is a continuation of ELEC 116 with students continuing to expand their knowledge competencies and performance capabilities within the electrical trade. Topics include: load calculations, hazardous locations, overcurrent protection, distribution equipment, and transformers.

ELEC 118. RES/COMM ELECTRICAL 4. **3 Hrs.**
This course is a continuation of ELEC 117 with students continuing to expand their knowledge competencies and performance capabilities within the electrical trade. Topics include: lighting applications, heat/freeze protection, motor maintenance, and high-voltage terminations/splices.

ELEC 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)

ELEC 120L. ALTERNATING CURRENT CIRCUITS LAB. **1 Hr.**
Application of concepts introduced in ELEC 120. (Co-requisite: ELEC 120)

ELEC 124. ANALOG CIRCUITS. **3 Hrs.**
Concepts covered include atomic structures, P-type and N-type materials, Rectification, Voltage Regulation, Signal Processing, Amplification, Filters, Harmonic Distortion, Power Supplies, Transistor Operation, Thyristor Applications and LEDs. Laboratory experiments are used to verify the topics covered in lecture. (Prerequisites: ELEC 101, 102, 105, or concurrent registration)

ELEC 133. INDUSTRIAL WIRING AND CODE. **2 Hrs.**
Industrial, commercial and residential electrical wiring, safety code, motor starters and controllers. (Co-requisite: ELEC 133L)

ELEC 133L. INDUSTRIAL WIRING AND CODE LAB. **1 Hr.**
Application of concepts introduced in ELEC 133. (Co-requisite: ELEC 133)

ELEC 202. ELECTRICAL AND INSTRUMENTATION 4. 3 Hrs.
Study of motor control, electrical distribution, transformer applications, hydraulic and pneumatic controls. Laboratory exercises are designed to provide hands-on practice of concepts.

ELEC 203. ELECTRICAL AND INSTRUMENTATION 5. 3 Hrs.
Study of emergency systems, control elements, transducers, and actuators. Laboratory exercises are designed to provide hands-on practice of concepts.

ELEC 204. ELECTRICAL AND INSTRUMENTATION 6. 3 Hrs.
Study of instrument calibration, loop checks, troubleshooting a loop, Programmable Logic Controllers (PLCs), and data networks. Laboratory exercises are designed to provide hands-on practice of concepts.

ELEC 210. ELECTRICAL CERTIFICATION. 1 Hr.
This is a review course for West Virginia Electrician Apprentice exam. Exams dates are scheduled through the State Fire Marshal's office. The first four chapters of the National Electric Code are reviewed.

ELEC 222. DIGITAL LOGIC CIRCUITS. 3 Hrs.
The analysis of digital logic circuits and systems with the help of truth table diagrams, Boolean Algebra and Karnaugh maps. Devices studied include: inverters, logic gates, memory, arithmetic and numbering circuits 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, Analog/Digital and Digital/Analog Conversion. (Prerequisites: ELEC 101 or ELEC 102, or ELEC 105)

ELEC 224. ET - ELECTRONICS CAPSTONE COURSE. 1 Hr.
This course serves as a culmination of the Engineering Technology – Electronics Option A.A.S. Degree Program. A project is designed and completed that demonstrates competencies and skills learned within the ELEC courses of the program.

ELEC 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)

ELEC 225L. ELECTRICAL MACHINERY LAB. 1 Hr.
Application of concepts introduced in ELEC 225. (Co-requisite: ELEC 225)

ELEC 234. SERVICE LEARNING EXPERIENCE. 3 Hrs.
This course combines student knowledge and abilities to perform work as an apprentice electrician on a construction site, under the supervision of the instructor.

ELEC 237. ANALOG AND DIGITAL CIRCUITS. 3 Hrs.
Provides an overview of Semiconductors, Signal Processing, Amplification, Boolean Algebra and Karnaugh maps, Truth Tables, Logic Gates, Memory, Encoders, Decoders, Analog/Digital and Digital/Analog Conversion. (Prerequisites: ELEC 101, 102, 105, or concurrent registration)

ELEC 260. E&I CAPSTONE COURSE. 1 Hr.
This course serves as a culmination of the Electrical & Instrumentation (E&I) Certificate program. A project is designed and completed that demonstrates competencies and skills learned within the Multi-Craft Technology (MTEC) and E&I courses of the program. NCCER and or NEC Examinations are prepared for and taken. Capstone course.

ELEC 324. ADVANCED ANALOG CIRCUITS. 3 Hrs.
Advanced theory and application of Voltage Regulation, Signal Processing, Amplification, Filters, Harmonic Distortion, Power Supplies, Transistor Operation, Thyristor Applications and Light Emitting Diodes LEDs). Laboratory experiments are used to verify the topics covered in lecture. (Prerequisites: ELEC 101, 102, 105, or concurrent registration)

ELEC 420. ADVANCED AUTOMATED SYSTEMS CONTROL. 3 Hrs.
Course topics include, Advanced Programmable Logic Controller (PLC) Programming and Applications, Variable Frequency Motor Drives, Robotics, Power Generation, Distribution and Transformation, Motor and Generator Theory and Telemetry. (Prerequisites: ELEC 101 or ELEC 102 or ELEC 105)

ELEC 422. ADVANCED DIGITAL LOGIC CIRCUITS. 3 Hrs.
Advanced applications of logic gates, memory, arithmetic and numbering circuits, encoders, and decoders, CPUs, storage media and A/D and D/A Conversion. (Prerequisites: ELEC 101 or ELEC 102 or ELEC 105)

ENGINEERING (ENGR)

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)

ENGR 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)

ENGR 120. ENGINEERING METHODS FOR TECHNICIANS 3 Hrs.
Roles and responsibilities of Engineering Technician s and Technologists, including the basic tools, problem-solving, computer and mathematical skills.

ENGR 124 PLCs, NETWORKS AND TELEMETRY FUND. 3 Hrs.
Provides an overview of Computer hardware, I/O, operating systems, communications, routing, addressing, telemetry devices and networking. (Pre-requisites: ELEC 101)

ENGR 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.

ENGR 220. FLUID, MECHANICAL, AND ELECTRICAL POWER SYSTEMS 3 Hrs.
Introduction to the elements of power transmission and the principles that guide the application of those elements in industry.

ENGR 228. EMBEDDED SYSTEMS PROGRAMMING 3 Hrs.
This course introduces embedded system controls. Included are an introduction to various hardware and softwa4re platforms. Student will create, deploy and troubleshoot a java embedded control program. (Prerequisites: CS 122 and ENGR 220)

ENGR 230 CONTROL SYSTEMS 3 Hrs.
Course topics include, Programmable Logic Controller (PLC) Programming and Applications, Variable Frequency Motor Drives, Robotics, Power Generation, Distribution and Transformation, Motor and Generator Theory and Telemetry. Laboratory exercises are included in this course.

ENGR 234 ADVANCED CONTROL SYSTEMS 3 Hrs.
A continuation of ELEC 220, topics include Advanced Programmable Logic Controller (PLC) Programming and Applications, Variable Frequency Motor Drives, Robotics, Discrete Control Systems, Programming. (Pre-requisites: ELEC 101, ENGR 230)

ENGR 240. HEATING AND COOLING SYSTEMS 1 **3 Hrs.**
This course introduces students to the Heating, Ventilation, Air Conditioning and Refrigeration Systems. Topics include: heating and cooling load calculation, introduction to cooling, introduction to heating, and air distribution systems, furnaces, boilers and air conditioning systems. (Prerequisites: ENGR 120 Engineering Methods for Technicians, Math 112 Tech Math 2)

ENGR 241. HEATING AND COOLING SYSTEMS 2 **3 Hrs.**
This course continues instruction of Heating, Ventilation, Air Conditioning and Refrigeration Systems introduces in Heating and Cooling Systems 1. Topics include: heating and cooling load calculation, advanced heating and cooling systems, commercial air handlers and commercial building comfort control systems. (Prerequisites: EAMT 240 Heating and Cooling Systems 1)

ENGR 250 BUILDING AUTOMATION CONTROLS **3 Hrs.**
This course introduces building automation controls. Included are operator access to room sensors, alarms, schedules, trends and reports. Students will create, deploy and troubleshoot a control program. (Prerequisites: EAMT 240 Heating and Cooling Systems 1, ELEC 220 Automated Systems Control)

ENGR 280. SPECIALIZED TECHNOLOGIES. **4 Hrs.**
This course discusses the theory of operation and application of various state-of-the-art technologies as they apply to modern technological fields. Communications, Automation, Controls, Sustainability and Current Innovations are examined. (Pre-requisites: ELEC 101, CS 121)

ENGLISH (ENGL)

ENGL 101. COMPOSITION 1. **3 Hrs.**
Students write a minimum of twenty formally-evaluated pages in order to expand skills necessary to express ideas and feelings effectively in expository essays centered on rhetorical patterns and strengthening critical thinking skills. 4,000-5,000 words evaluated writing. (Prerequisite: Placement Test)

ENGL 101L. COMPOSITION 1 LAB. **0 Hrs.**
This lab provides structured learning support for English 101, offering tailored instruction in the specifics of the writing process; grammar, punctuation, and sentence structure; various forms of documentation; and the traditional rhetorical modes. (Prerequisite: Placement test) (Corequisite: ENGL 101)

ENGL 102. COMPOSITION 2. **3 Hrs.**
Enhancing skills for writing research-based informative and/or argumentation papers using analysis, synthesis, drawing conclusions from credible sources. Refining research skills, documenting, citing. Employing traditional rhetorical patterns to create an argument. 4,000-5,000 words evaluated writing. (Prerequisite: Grade of C or better in ENGL 101 or ENGL 107)

ENGL 103. ENGLISH GRAMMAR, USAGE, AND STYLE. **3 Hrs.**
Study of syntax, grammar, word forms, punctuation, various accepted writing styles. Designed for people who will be writing professionally or want to reinforce correct grammar, punctuation, usage, and to work within different writing contexts. (Prerequisite: Placement test)

ENGL 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 18 or Placement test)

ENGL 107L. TECHNICAL WRITING 1 LAB. **0 Hrs.**
This lab provides structured learning support for Technical Writing 1, offering tailored instruction in the specifics of English 107; the writing process, grammar, punctuation, sentence structure; and various

writing approaches used in a technical environment. (Prerequisite: Placement test) (Corequisite ENGL 107)

ENGL 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 nontechnical materials. Requires strong grammar and usage skills. (Prerequisite: ENGL 101 or ENGL 107 or permission of instructor)

ENGL 131. TYPES OF LITERATURE 1. **3 Hrs.**
A genre approach with an emphasis on the development of critical reading and writing skills through the definition, analysis, and personal experience of poetry and drama. (Prerequisite: Grade of C or better in ENGL 101)

ENGL 132. TYPES OF LITERATURE 2. **3 Hrs.**
A genre approach with an emphasis on the development of critical reading and writing skills through the definition, analysis, and personal experience of the short story, novella, and/or novel. (Prerequisite: Grade of C or better in ENGL 101)

ENGL 210. INTRODUCTION TO CREATIVE WRITING **3 Hrs.**
An open enrollment introduction to writing in different literary forms – poetry, fiction, creative nonfiction, and plays. Includes development of clarity, originality, and personal style.

ENGL 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; the basics of seeking an audience.

ENGL 214. CREATIVE WRITING: CREATIVE NONFICTION. **3 Hrs.**
An open enrollment introduction to the writing of creative nonfiction, including literary journalism, personal essay, characterization and scene, detail and description, distinctive voice and point of view, and memoir.

ENGL 215. CREATIVE WRITING: FICTION. **3 Hrs.**
An open-enrollment introduction to the writing of fiction.

ENGL 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)

ENGL 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)

ENGL 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)

ENGL 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)

ENGL 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)

ENGL 257. INTRODUCTION TO SCIENCE FICTION. 3 Hrs.
An exploration of the development of science fiction and fantasy through the study of representative works. (Prerequisite: Grade of C or better in ENGL 101)

ENGL 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)

ENGL 261. ENGLISH LITERATURE 1. 3 Hrs.
Representative works from the Middle Ages to the Eighteenth Century; Beowulf, Chaucer, Shakespeare, and others. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 262. ENGLISH LITERATURE 2. 3 Hrs.
Representative works from the Romantic period through the twentieth century. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 285. GENDER IN LITERATURE. 3 Hrs.
Exploration of multiple definitions and understandings of gender roles and labels, often accompanied by stereotypes, as portrayed in a variety of literary genres, films, and other materials. How personal and cultural assumptions interact with individual interpretation and perception of what are often considered archetypal roles. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 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.)

ENGL 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. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 320. MEDIEVAL LITERATURE. 3 Hrs.
This course examines works written primarily in the British Isles in the period between 500-1500. Exact topics will vary but may include Old and Middle English texts, the Arthurian legends, religious writings, and Chaucer and his contemporaries. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 325. SHAKESPEARE. 3 Hrs.
Shakespeare's comedies, tragedies, and histories are covered. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 330. MILTON. 3 Hrs.
Milton's poems and selected prose are discussed as well as the literary context of Neoclassicism. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 334. SCIENTIFIC AND TECHNICAL WRITING.
Upper-level course requiring the study of readings, practices, technical/scientific writing conventions: uses of graphics, professional vocabulary, audience analysis, research techniques, parameters and professional requirements for scientific or technical content and secondary research writing. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 335. THE ROMANTIC MOVEMENT. 3 Hrs.
An upper-division survey of the works of the major Romantic writers. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 340. THE VICTORIAN ERA. 3 Hrs.
An upper-division concentration on major Victorian writers and an overview of cultural and literary criticism of the time. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 345. MODERN AND POST MODERN LITERATURE. 3 Hrs.
Examines the influence of culture and thought on the themes, styles, literary devices and approaches of Modern and Post Modern authors. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 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) Fall only

ENGL 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)

ENGL 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 judgments practiced. Study of diversity and use of adolescent literature emphasized. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 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.

ENGL 410. REGIONAL LITERATURE. 3 Hrs.
A study of regional essayists, short story writers, poets, novelists, dramatists, and writers of creative nonfiction in relation to ideological and cultural background, style, and subject matter. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 415. AMERICAN VOICES. 3 Hrs.
Students examine literature by one or more American authors representative of particular movements, eras, genres, styles, themes, cultures, or other relevant perspectives. Focus may vary each semester. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 420. SINGLE AUTHOR. 3 Hrs.
This course provides in-depth study of a single author's literary work. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 425. TOPICS IN CONTEMPORARY GLOBAL LITERATURE. 3 Hrs.

Specialized topics, which may vary per semester, will provide students with the opportunity to discuss, interpret, compare, and critique contemporary literature by international authors. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 430. COMPARATIVE LITERATURE. 3 Hrs.
Using literary texts, "Comparative Literature" promotes studying intercultural relations that cross national

boundaries, multicultural relationship, and the interactions between literature, the arts, the sciences, technology, history, political science, philosophy, and linguistic boundaries and other disciplines. (Prerequisite: ENGL 101 or 107 with grade of "C" or permission of instructor)

ENGL 444. WRITER'S WORKSHOP.
Offers opportunity to create, shape, and polish poetry, fiction, screen plays, drama, creative non-fiction. Focus on elements essential to good writing. Stresses both creativity and practical skills, such as manuscript preparation, critiquing, editing, and marketing. (Prerequisite: Grade of C or better in ENGL 101 and ENGL 102 or permission of instructor.)

ENGL 450. LITERARY CRITICISM. **3 Hrs.**
The study of literary criticism from Aristotle to the present. (Prerequisites: Grade of C or better in ENGL 101 or permission of instructor)

ENTREPRENEURSHIP (ENT)

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.

ENT 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.

ENT 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.

ENT 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)

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.

ENVR 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.

FINANCE AND BANKING (FIN)

FIN 101. PERSONAL FINANCE. **3 Hrs.**
This course introduces the basic tools of money management and personal finance. The course aims to prepare the student to live better financially. Topics include budgeting, managing checking and savings accounts, obtaining loans and credit.

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.

FIN 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)

FIN 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)

FIN 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)

FIN 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)

FIN 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.

FOREIGN LANGUAGES (FLAN)

CLASSICS (CLAS)

CLAS 101. ELEMENTARY LATIN 1 3 Hrs.
Students will study Classical Latin grammar and vocabulary through the reading of stories. Attention is also given to proper pronunciation, writing, and the study of ancient Roman culture.

CLAS 103. ELEMENTARY ANCIENT GREEK 1 3 Hrs.
Students will study ancient Greek grammar and vocabulary through the reading of Classical Attic, Septuagint, and Koiné Greek selections. Attention is also given to proper pronunciation, writing in Greek, and the study of the Athenian, Spartan, and broader Hellenistic cultures.

CLAS 297. SPECIAL TOPICS. 3 Hrs.
Special courses in foreign languages which are not taught on a regular basis.

FRENCH (FREN)

FREN 101. ELEMENTARY FRENCH 1. 3 Hrs.
Students will acquire beginning skills in speaking, reading, writing, and listening to the language. A cultural component is included in the course.

FREN 102. ELEMENTARY FRENCH 2. **3 Hrs.**
Continuation of FREN 101. Students will develop a greater mastery of speaking, reading, writing, and listening than in the beginning course. A cultural component is included in the course (Prerequisite: FREN 101 or equivalent)

FREN 203. INTERMEDIATE FRENCH 1. **3 Hrs.**
Continuation of FREN 102. Students will focus on deeper vocabulary development and the mastery of intermediate sentence patterns through reading and speaking. (Prerequisite FREN 102 or equivalent)

FREN 204. INTERMEDIATE FRENCH 2. **3 Hrs.**
Continuation of FREN 102. Students will focus on deeper vocabulary development and the mastery of intermediate sentence patterns through reading and speaking. (Prerequisite FREN 102 or equivalent)

GERMAN (GERM)

GERM 101. ELEMENTARY GERMAN 1. **3 Hrs.**
Students will acquire beginning skills in speaking, reading, writing, and listening to the language. A cultural component is also included in the course

GERM 102. ELEMENTARY GERMAN 2. **3 Hrs.**
Continuation of GERM 101. Students will develop a greater mastery of speaking, reading, writing, and listening than in the beginning course. A cultural component is also included in the course. (Prerequisite: GERM 101 or equivalent)

GERM 203. INTERMEDIATE GERMAN 1. **3 Hrs.**
Continuation of GERM 102. Students will focus on deeper vocabulary development and the mastery of intermediate sentence patterns through reading and speaking. (Prerequisite GERM 102 or equivalent)

GERM 204. INTERMEDIATE GERMAN 2. **3 Hrs.**
Continuation of GERM 203. Students will focus on deeper vocabulary development and the mastery of intermediate sentence patterns through reading and speaking. (Prerequisite GERM 203 or equivalent)

JAPANESE (JAPN)

JAPN 101. ELEMENTARY JAPANESE 1. **3 Hrs.**
Students will acquire beginning skills in speaking, reading, writing katakana, and listening to the language. A cultural component is also included in the course

JAPN 102. ELEMENTARY JAPANESE 2. **3 Hrs.**
Continuation of JAPN 101. Students will develop a greater mastery of speaking, reading, writing (hiragana), and listening than in the beginning course. A cultural component is also included in the course.(Prerequisite: JAPN 101 or equivalent)

JAPN 203. INTERMEDIATE JAPANESE 1. **3 Hrs.**
Continuation of JAPN 102. Students will focus on deeper vocabulary development and the mastery of intermediate sentence patterns through reading and speaking. Kanji will be introduced. (Prerequisite JAPN 102 or equivalent)

JAPN 204. INTERMEDIATE JAPANESE 2. **3 Hrs.**
Continuation of JAPN 203. Students will focus on deeper vocabulary development and the mastery of intermediate sentence patterns through reading and speaking. (Prerequisite JAPN 203 or equivalent)

SPANISH (SPAN)

SPAN 101. ELEMENTARY SPANISH 1. 3 Hrs.
Students will acquire beginning skills in speaking, reading, writing, and listening to the language. A cultural component is also included in the course

SPAN 102. ELEMENTARY SPANISH 2. 3 Hrs.
Continuation of SPAN 101. Students will develop a greater mastery of speaking, reading, writing, and listening than in the beginning course. A cultural component is also included in the course. (Prerequisite: SPAN 101 or equivalent)

SPAN 103. SPANISH FOR FIRST RESPONDERS. 3 Hrs.
This course concentrates on communicating in Spanish in emergency situations by phrases, questions and answers, and commands.

SPAN 203. INTERMEDIATE SPANISH 1. 3 Hrs.
A continuation of SPAN 102. Students will focus on deeper vocabulary development and the mastery of intermediate sentence patterns through reading and speaking. (Prerequisite SPAN 102 or equivalent)

SPAN 204. INTERMEDIATE SPANISH 2. 3 Hrs.
Continuation of SPAN 203. Students will focus on deeper vocabulary development and the mastery of intermediate sentence patterns through reading and speaking. (Prerequisite SPAN 203 or equivalent)

SPAN 295. SEMINAR IN SPANISH. 1-3 Hrs.
(Prerequisite: Foreign Languages Departmental consent)

GENERAL BUSINESS (GBUS)

GBUS 101. INTRODUCTION TO BUSINESS. 3 Hrs.
A study of forms of business organizations and the functions performed within the typical business organization. Includes introduction to accounting, business law, economics, finance, management, and marketing. Covers history of American business, forms of business ownership, and business ethics and social responsibility. [Common Professional Component Course]

GBUS 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)

GBUS 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. [Common Professional Component Course]

GBUS 240. BUSINESS CAPSTONE AAS 2 Hrs.
This is the capstone course for all Associate in Applied Science in Business Administration majors. Outcomes include development of a career planning portfolio and completions of the Major Fields Test for Associate Degree. Topics to be explored include self-management, personal finance, human relations, workplace ethics, diversity and accountability. Capstone course. (Prerequisites: GBUS 101 and BTEC 275)

GBUS 300. PRINCIPLES OF MANAGEMENT INFORMATION SYSTEMS 3 Hrs.
The course provides an overall picture of how technology is used to assist businesses in making informed decisions. It covers the important features of management information structure and technology to business and managerial applications. Topics covered include database management, responsibilities of

Information Technology personnel and interaction with functional managers, analysis of organizational communications using online and web-based technology, e-commerce, decision support, project management, and other software solutions to business problems. [Common Professional Component CPC course for BSBA majors] (Prerequisites: CS 101, MGMT 220)

GBUS 304. ADVANCED EXCEL. 3 Hrs.
Using Microsoft Excel, students are taught Excel advanced spreadsheet formatting. Topics include advanced formulas and logical functions, mathematical computations, data analysis, lookups, scenarios, goal seek, chart presentations, pivot tables and charts, data imports, exporting, and linking multiple workbooks, with an emphasis on critical thinking, problem solving, and decision making for marketing, finance, accounting, economics, and management. Additional "advanced hands-on projects and tests" are required. (Prerequisite: BTEC 275)

GBUS 306. ADVANCED ACCESS. 3 Hrs.
Using Microsoft Access, students are taught advanced Access data management to create fields, tables, queries, calculations, charts, forms and reports, data imports, exporting, and relationship databases, with an emphasis on critical thinking, problem solving, and decision making for marketing, finance, accounting, economics, and management. Additional "advanced hands-on projects and tests" are required. (Prerequisite: BTEC 375)

GBUS 310. BUSINESS LAW I. 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. [Common Professional Component Course]

GBUS 325. QUANTITATIVE BUSINESS ANALYSIS. 3 Hrs.
The objective of this course is to understand the concept and process of quantitative analysis in theory and practice as applied to a business. Students learn the basics of mathematical models and their use in analysis and decision making in functional areas of business. Content areas include techniques like Linear Programming (Graphical, Corner point, Simplex, sensitivity analysis), Basic concepts of probability, commonly used probability distributions and Decision Theory. Broad survey of other topics like Network models, Game theory, dynamic programming, AHP, Inventory, Forecasting. Common Professional Component Course for BSBA majors. (Prerequisite: MATH 211)

GBUS 370. PRINCIPLES OF PURCHASING. 3 Hrs.
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)

GBUS 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 230)

GBUS 372. CONTRACT ADMINISTRATION. 3 Hrs.
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)

GBUS 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. [Common Professional Component Course.] (Prerequisite: Senior Status)

GBUS 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. (Prerequisite: GBUS 412.)

GBUS 412. BUSINESS LAW II. 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. (Prerequisite: Admission to BSBA or BASBA or instructor's consent, GBUS 310 and MGMT 220) [Common Professional Component Course for BSBA]

GBUS 415. MANAGERIAL BUSINESS ETHICS. 3 Hrs.
This course will focus on both theoretical constructs and frameworks of ethical behavior and practical application of ethics in today's business world. Students will review literature on ethical standards and read extensive case analysis on companies who have demonstrated poor social responsibility. Areas of study will include personal values, serving and providing value to stakeholders, and what it means for a company to be a good corporate citizen. (Prerequisites: MGMT 220 and admission to BSBA or BASBA)

GBUS 440. BUSINESS POLICY. 3 Hrs.
The capstone experience must be taken only in the last semester of a BSBA or BASBA. Course integrates common Professional Component (CPC) and uses case studies and simulations. Major Fields Test (MFT) is required. (Prerequisites: Senior status, Admission to BSBA or BASBA, and open only to students in their last semester) Common Professional Component Course for BSBA and BASBA. Capstone Course Senior status, Admission to BSBA or BASBA, and open only to students in their last semester.

GEOGRAPHY (GEOG)

GEOG 102. WORLD GEOGRAPHY. 3 Hrs.
Students will study the spatial relationship between geographic features such as climate, natural vegetation, topography, natural resources and physical landscapes; along with political, social, economic, globalization, and cultural systems within world regions.

GEOG 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, along with political, social, economic, and cultural systems in the United States and Canada.

GEOLOGY (GEOL)

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)

GEOL 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)

GEOL 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)

GEOL 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)

GEOL 105. ENVIRONMENTAL GEOLOGY 4 Hrs.
And introduction to the study of the Earth's processes and interconnections between the humans and Earth. The physical, chemical, and biological processes that shape Earth will be studied in conjunction with environmental issues. The study of Earth's subsystems (the lithosphere, biosphere, hydrosphere, and atmosphere) and the human impact on the subsystems. The laboratory work will emphasize; minerals and rocks, interpretation of maps, and geologic processes. (Co-requisites: GEOL 105L. 2 laboratory hours per week, 3 lecture hours per week)

GEOL 105L. ENVIRONMENTAL GEOLOGY LAB 0 Hrs.
This course is the laboratory associated with GEOL 105. Topics covered in this laboratory course may include the following: study of rocks and minerals, plate tectonics, structural maps, geologic maps, soil maps, topographic maps, contamination of waste, atmospheric processes related to pollution, costal processes, geologic hazards, movement of contamination through various mediums, ground and surface water, and mass wasting.

GEOL 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)

GEOL 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)

HEALTH, PHYSICAL EDUCATION AND RECREATION (HPER)

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.

HPER 111-159. 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
113 Beginning Tennis
114 Intermediate Tennis
115 Beginning Bowling
116 Advanced Bowling
119 Beginning Volleyball
120 Advanced Golf
121 Basic Judo
122 Advanced Judo
123 Karate
124 Basic Aikido
125 Shao-Lin Kung Fu
135 Life Saving
136 Beginning Yoga
159 Beginning Table Tennis

HPER 145. FITNESS – AEROBIC ACTIVITIES **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 place on personal assessment and program development in the areas of cardiovascular strength and endurance, muscular strength and endurance, flexibility, diet and nutrition, and relaxation.

HPER 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.

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

HPER 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.

HPER 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.

HPER 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.

HPER 315. INSTRUCTIONAL STRATEGIES - HPED. **3 Hrs.**
This course will provide the student with a philosophy of elementary physical education and health. 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)

HISTORY (HIST)

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.

HIST 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.

HIST 152. U.S. HISTORY THROUGH THE CIVIL WAR. 3 Hrs.
Examines the major issues in the nation's development from the beginning of colonization through the end of the Civil War, with an emphasis on the role of slavery and contact with Native Americans.

HIST 153. U.S. HISTORY FROM RECONSTRUCTION TO THE PRESENT. 3 Hrs.
Describes the history of the United States as it grew from a predominately rural, agrarian society at the conclusion of the Civil War to today's urban, industrial nation and world economic and military superpower.

HIST 201. RESEARCH METHODOLOGY 3 Hrs.
Introduces students to skills needed for the study of history, including library/archive research, use of the Internet, historiography and historical schools of thought, *The Chicago Manual of Style*, and discussions on careers for history majors.

HIST 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.

HIST 302. HISTORY OF AMERICAN INDIANS. 3 Hrs.
Migration to and settlement of North America, development of distinct cultures, encounters with Europeans; wars of survival and the twentieth century; all from the perspective of American Indians. (Prerequisites: HIST 152, and HIST 153

HIST 306. COLONIAL AMERICA 1607-1763. 3 Hrs.
Settlement of the individual British colonies; Native American contact, trade and conflict; evolving relationships with other colonies and Great Britain; establishing social, political, and economic institutions; race and gender. (Prerequisites: HIST 152)

HIST 310. AFRICAN-AMERICAN HISTORY. 3 Hrs.
Trace history of African-Americans from 1619 to the present; describe origins of slavery in Colonial America; examine opposition to slavery and racial inequality; describe results of Reconstruction; understand development of a unique African-American culture. (Prerequisites: HIST 152 and HIST 153)

HIST 340. AMERICAN CENTURY, 1919-1989. 3 Hrs.
Study of the political, economic, and social changes that swept the United States as the nation grew to a world power, from the conclusion of World War I through the end of the Cold War. (Prerequisites: HIST 153)

HIST 355. ANCIENT GREECE AND ROME. 3 Hrs.
The development of the Western World, with a focus on Ancient Greece and its surrounding cultures through the Roman Empire in the 5th century. (Prerequisites: ENGL 102, HIST 101, or Instructor's consent)

HIST 360. HISTORY OF CRIME AND PUNISHMENT. 3 Hrs.
The development of the legal world with a focus on the history of criminal activity and punishment from

recorded history through the modern age.

HIST 370. MODERN EAST ASIA. 3 Hrs.
An examination of the emergence of the Chinas, Koreas, and Japan since 1905. Their evolving role in the contemporary world. (Prerequisites: Six hours of history)

HIST 390. LEGENDS, LORE AND MYTHOLOGY 3Hrs.
This course exposes different historical aspects of mythology and development of legends and lore throughout mankind and advancement of mythological beliefs or legendary influence in a social and historical event.

HIST 410. REVOLUTIONARY AMERICA, 1763-1787. 3 Hrs.
Constitutional and economic causes of rebellions; major military campaigns and engagements, diplomatic and domestic political issues; impact on race and gender in war and peace; goals of self-government. (Prerequisites: HIST 152)

HIST 430. CIVIL WAR AND RECONSTRUCTION. 3 Hrs.
Causes as well as constitutional and diplomatic aspects of the Civil War; the role of race and gender in war and peace; and the economic and political aspects of Reconstruction. (Prerequisites: ENGL 102, HIST 152 and HIST 153)

HIST 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 and HIST 153)

HIST 463. EUROPE AND THE MIDDLE AGES. 3 Hrs.
Europe from the fall of the Roman Empire to the beginning of the Renaissance, with emphasis on religious, cultural, social, political, and economic advancement. (Prerequisites: ENGL 102, HIST 101, or Instructor consent)

HIST 465. RENAISSANCE AND REFORMATION. 3 Hrs.
The impact of the Renaissance upon economic and political developments in the 15th and 16th centuries. A study of the growth of the Protestant movement and the influence of the movement upon the New and Old World. (Prerequisites: ENGL 102, HIST 101, HIST 102 or Instructor's consent)

HIST 475. MODERN EUROPEAN HISTORY 1900- PRESENT. 3 Hrs.
Development of the modern Western world focusing on political, social, and economic developments through the Age of Imperialism carrying through the modern age. (Prerequisites: ENGL 102, HIST 102, or Instructor consent)

INDUSTRIAL ELECTRIAL/INSTRUMENTATION TECH (IDIT)

IDIT 101. ADVANCED INSTRUMENTATION 1 3 Hrs.
Comprehensive study of temperature and pressure instrumentation devices. Students will learn installation, calibration, and troubleshooting skills associated with various types of sensors, controllers, and recording devices relating to temperature and pressure parameters. (2 lecture; 2 lab)

IDIT 102. ADVANCED INSTRUMENTATION 2 3 Hrs.
Comprehensive study of flow and level instrumentation devices and procedures. Students will learn installation, calibration, and troubleshooting skills associated with various types of sensors, controllers, and recording devices relating to flow and level parameters.

IDIT 201. ADVANCED INSTRUMENTATION 3 **3 Hrs.**
Comprehensive study of analytical instrumentation devices and procedures. Students will learn installation, calibration, and troubleshooting skills associated with various types of analyzers, including pH and ORP meters, gas chromatographs, spectrophotometers, color, carbon, and optical analyzers (turbidity, opacity, etc.). (2 lecture; 2 lab)

IDIT 202. ADVANCED INSTRUMENTATION 4 **3 Hrs.**
Comprehensive study of Supervisory Control and Data Access (SCADA) systems, Distributed Control systems (DCS), and Programmable Control systems (PLC). Students will discuss the hardware, software, and telemetry systems involved with these control mechanisms. (2 lecture; 2 lab)

IDIT 260. ADVANCED INSTRUMENTATION CAPSTONE **1 Hr.**
Serves as the culmination of the Industrial Electrical/Instrumentation Technician program. Students will present a project related to the field of study.

INDUSTRIAL MAINTENANCE (IM)

IM 101. INDUSTRIAL MAINTENANCE 1. **3 Hrs.**
Provides an introduction to piping, valves installation, hydraulic and pneumatic testing. Laboratory exercises are designed to provide hands-on practice of concepts.

IM 102. INDUSTRIAL MAINTENANCE 2. **3 Hrs.**
Provides an introduction to bearings, steam systems, distillation towers, heaters, coolers and furnaces. Laboratory exercises are designed to provide hands-on practice of concepts.

IM 103. INDUSTRIAL MAINTENANCE 3. **3 Hrs.**
Provides an introduction to measuring tools, advanced trade math, bearing and coupling installation. Laboratory exercises are designed to provide hands-on practice of concepts.

IM 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)

IM 201. INDUSTRIAL MAINTENANCE 4. **3 Hrs.**
Topics include setting base plates, pre-alignment, belt, seal, and chain installation. Laboratory exercises are designed to provide hands-on practice of concepts.

IM 202. INDUSTRIAL MAINTENANCE 5. **3 Hrs.**
Topics include preventative and predictive maintenance, advanced blueprint reading and compressor systems. Laboratory exercises are designed to provide hands-on practice of concepts.

IM 203. INDUSTRIAL MAINTENANCE 6. **3 Hrs.**
Topics include laser alignment, troubleshooting and repairing hydraulic systems, troubleshooting and repairing pumps. Laboratory exercises are designed to provide hands-on practice of concepts.

IM 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)

IM 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)

IM 260. INDUSTRIAL MAINTENANCE CAPSTONE COURSE **1 Hr.**
This course serves as a culmination of the Industrial Maintenance Certificate program. A project is designed and completed that demonstrates competencies and skills learned within the MTEC and IM courses of the program. NCCER Examinations are prepared for and taken. Capstone course.

INDUSTRIAL SAFETY TECHNOLOGY (IST)

IST 112. CONSTRUCTION SAFETY **3 Hrs.**
Course covers general knowledge of various OSHA standards and how they apply to the construction industry. Successful completion will result in the issuance of an OSHA 30 hour card.

IST 120. FIRE & LIFE SAFETY **3 Hrs.**
Covers aspects of fire anatomy and behavior, characteristics of flammable materials, fire protection in buildings, codes and regulations, fire extinguishing and detection systems, emergency planning, evacuation and emergency action plans.

IST 130. INDUSTRAIL HYGIENE **2 Hrs.**
Concentrates on the recognition, evaluation and control of employee-related workplace health hazards.

IST 230. DESIGNING FOR OSHA **1 Hr.**
Applying OSHA standards to real-life situations through hands-on experiences and tabletop exercises.

IST 240. HAZWOPER 40 **3 Hrs.**
HAZardous Waste OPerations and Emergency Response covers clean-up operations, voluntary clean-up operations, emergency response operations, and storage, disposal, or treatment of hazardous substances or uncontrolled hazardous waste sites.

IST 242. HAZWOPER REFRESHER **1 Hr.**
This course is an annual refresher to HAZWOPER 40. Reviews topics covered in HAZWOPER 40. Required annually to maintain HAZWOPER certification.

IST 250. SAFETY MANAGEMENT **3 Hrs.**
Examines workplace safety training and development, recordkeeping requirements, incident investigations, and reporting.

IST 260. SAFETY CAPSTONE **1 Hr.**
This course serves as a culmination of the IST program. Students will work in collaboration with safety/health practitioners to identify, evaluate, and control safety/health hazards in an industrial or construction setting.

IST 270. AWARE **1 Hr.**
Designed to educate on the recognition, avoidance, and prevention of hazards specific to the Oil/gas industry. Program is accredited by the IADC RigPass program and meets SafeLandUSA endorsement criteria.

INDUSTRIAL TECHNOLOGY (INDT)

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.

INDT 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)

INDT 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.

INDT 120. INDUSTRIAL SAFETY. 2 Hrs.
Concentrates on high hazard tasks and industries from a safety compliance perspective.

INDT 143. SAFETY, HEALTH AND ENVIRONMENT. 3 Hrs.
Examines the recognition, evaluation, control, and legislative compliance of hazardous materials through effective safety management.

INDT 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.

INDT 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)

INDT 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.

INDT 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.

INDT 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.

INDT 260. INDUSTRIAL ET CAPSTONE. 1 Hr.
This course serves as a culmination of the Engineering Technology – Industrial Option A.A.S. Degree program. A project is designed and completed that demonstrates competencies and skills learned within the courses of the program. Industry Standards Examinations are prepared for and taken. Capstone course.

INDT 270. PLANT LAYOUT AND MATERIAL FLOW. 3 Hrs.
Introduction to arrangement of a manufacturing facility relating material flow to proper equipment arrangement.

INDT 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.

INDT 312. DESIGNING FOR OSHA. 1 Hr.
Review of OSHA regulations and the impact on workplace design.

INDT 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.

INDT 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.

INDT 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.

INDT 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)

INDT 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)

INDT 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)

INDT 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.

INDT 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)

INDT 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. Capstone course.(Prerequisites: INDT 420, INDT 422, INDT 424 and senior status)

JOURNALISM (JOUR)

JOUR 101. INTRODUCTION TO MASS COMMUNICATIONS. 3 Hrs.
Critical overview of mass media including publishing, advertising, newspaper, public relations, magazines, broadcasting.

JOUR 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.

JOUR 110. BASIC NEWSWRITING. 3 Hrs.
Introduction to the fundamentals of covering and writing news. Reporters must acquire skills to identify a story and its essential elements, gather information efficiently, place it in a meaningful context, and write concise and compelling accounts, as well as learning the basics of design and layout.

JOUR 117. INTRO TO SOCIAL MEDIA MANAGEMENT 3 Hrs.
Introduction to Social Media is a three-credit survey course that acquaints students with contemporary social media issues by examining the content, theory and evolution of social media. The course emphasizes the ever changing social media atmosphere and the mass amount of social media outlets available to businesses. The history, development and current structure of social media are all covered. Whatever the outlet, this course is most concerned with creating an understanding of how social media operates and of how past and present social media strategies have succeeded in creating virality. Students will develop critical analysis skills while becoming proficient social media users.

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

JOUR 217. ADVANCED SOCIAL MEDIA MANAGEMENT 3 Hrs.
Social Media management is a three-credit survey course that engages students in social media and society issue by developing methods of analysis and critical understanding. The class will draw from a range of sources including cultural studies, media anthropology, and communication theory to understand the impact of social media on today's world. Copyright law, social media effectiveness, and the analysis of good and bad types of social communication will be covered. Students will develop guidelines for using social media on personal and professional accounts while cultivating, curating, and monitoring those accounts. Students will further develop basic social media and communication skills while learning the landscape and best practices.

JOUR 219. FUNDAMENTALS OF RADIO PRODUCTION 3 Hrs.
This course is an introduction to radio broadcasting focusing on development, function and artistry. It includes studio practices, procedures and demonstrations as related to radio applications. Hands-on production experience reinforces theoretical material.

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

JOUR 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)

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

JOUR 237. SOCIAL MEDIA CAMPAIGNS 3 Hrs.
Social Media Campaigns engages students in actual social media by conducting original research, construction a campaign plan, producing original materials for the campaign, and tracking the campaign's success. Students will use their existing knowledge of social media best practices to implement their campaign and track the organic growth of it.

JOUR 240. MULTIMEDIA REPORTING. 3 Hrs.
To build upon the fundamentals of gathering, organizing, evaluating and writing objective reports/broadcasts, and to provide them with an understanding of what a career in the age of digital journalism entails. (Pre-requisites: JOUR 215, JOUR 318, JOUR 220, JOUR 360)

JOUR 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)

JOUR 319. BROADCAST NEWS WRITING. 3 Hrs.
Broadcast Journalism is concerned with HOW meaning is created through pictures and/or sound. Broadcast Journalism is a medium for the ear and/or the eye. Whereas as a print journalist writes for the eye, to be read, the broadcast journalist writes for the ear, to be heard and in television, for the eye, to be seen. This course will enable you as developing journalists to acquire the necessary critical thinking skills you will need to best convey broadcast messages to diverse audiences.

JOUR 329. SPORTS NEWS WRITING. 3 Hrs.
Take me out to the ballgame, but make sure I have a pencil and paper in hand. This course teaches broadcasters how to analyze and write content for covering sporting events. (Prerequisites: JOUR 219)

JOUR 330. FUNDAMENTALS OF PUBLIC RELATIONS. 3 Hrs.
Discover the relationship between public relations practitioners and the news media, and how it is utilized to shape public perceptions. This course introduces students to the basics of target audiences, messages, special events, and how they all fit into a cohesive program as part of the promotional mix of an organization. (Prerequisites: JOUR 215 and JOUR 318)

JOUR 339. REPORTING PUBLIC AFFAIRS. 3 Hrs.
This course is an introduction to public affairs reporting, including coverage of local government, public schools, courts, crime, and social services. Students cover anything from town government and school board meetings to trials and the police beat. (Prerequisites: JOUR 219)

JOUR 349. SPORTS REPORTING. 3 Hrs.
Play ball – no just tell how it is played in this course that demonstrates sports reporting, including trends and philosophies of sports writing, writing for varying styles of sports, interviewing, features, columns, and legal aspects of sports reporting. (Prerequisites: JOUR 219, JOUR 329)

JOUR 359. RADIO REPORTING. 3 Hrs.
Radio presents a unique partnership between the reporter and the listener – as you describe the scene, the listener must imagine it. Writing for radio must be crisp, clear, concise and evocative all at the same time. (Prerequisites: JOUR 219, JOUR 339)

JOUR 360. DIGITAL IMAGING. 3 Hrs.
Methodologies and techniques for using both traditional photography and the computer in creating and manipulating digital imagery. Students will explore a variety of creative techniques for producing, editing, and altering images using computers, software, and digital tools. Emphasis will be on using Photoshop as a tool in the process of image creation, manipulation, and enhancement for visual expression and communication. (Prerequisites: JOUR 220)

JOUR 410. GRAPHIC DESIGN. 3 Hrs.
Creative and practical aspects of typography, layout, and design; preparation of comprehensive and camera ready layouts with use of desktop publishing.

JOUR 419. ADVANCED RADIO PRODUCTION. 3 Hrs.
Students learn the theory and techniques of sophisticated audio production, including analog and digital multi-track recording, mixing, signal processing, live remote recording, digital editing, creative sound production, and sound design. (Prerequisites: JOUR 219)

JOUR 425. VIDEO PRODUCTION 3 Hrs.
Video production, also known as videography, is the process of capturing video by capturing moving images, and creating combinations of parts of the video in live production and post-production. (Prerequisites: JOUR 219, JOUR 419)

JOUR 437. PUBLIC RELATIONS WRITING/CASE STUDIES 3 Hrs.
Discover how to become an effective writer in a variety of formats expected of public relations practitioners. This course introduces students to not only writing, but also a study of cases and situations designed to help students develop agility in applying effective public relations practices. (Prerequisites: JOUR 330)

JOUR 439. PUBLIC REALTIONS CAMPAIGN MANAGEMENT 3 Hrs.
Students will conduct original research, construct a comprehensive campaign plan, and produce public relations collateral material that could be used to implement their campaign. This course culminates with the pitching of a campaign to a client. (Prerequisites: JOUR 330, JOUR 437)

LANGUAGE ARTS (LA)

LA 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; ENGL 403; admission to Teacher Education) (Co-requisite: Field Experience)

LA 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; LA 301) (Co-requisite: Field Experience) Spring only

LEGAL STUDIES (LS)

LS 101. INTRODUCTION TO LEGAL STUDIES. 3 Hrs.
This course will explore the world of law, its functions, roles and elements. It will cover an introductory look at the legal systems and its functions in the United States.

LS 210. LEGAL RESEARCH AND WRITING 1. 3 Hrs.
In this course the student will learn how to research and analyze legal problems and to convey that legal analysis of a problem into a written form that adheres to the conventions of the legal profession.

LS 215. LAW OFFICE MANAGEMENT 3 Hrs.
This course will cover the fundamentals of law office management. This course is designed to familiarize the legal assistant with the practical inner workings of a law office, including an understanding of law office procedures.

LS 220. LEGAL RESEARCH AND WRITING 2. **3 Hrs.**
The student will build on their knowledge of conducting legal research and being able to convey that information in various written legal documents. Serves as the capstone for the CAS. (Prerequisite: LS 210)

LS 231. LEGAL ETHICS & PROFESSIONAL RESPONSIBILITY **3 Hrs.**
In this course the student is to evaluate the main philosophical theories of ethics and law, probe central moral and legal issues, examine the practical application of such theories and issues, and analyze the interrelationship between ethics and law.

LS 240. CIVIL PROCEDURES. **3 Hrs.**
This course provides an introduction to the civil adjudicative process, primarily that of the federal and state courts, including jurisdiction, pleadings, discovery, dispositive motions and trial procedures.

LS 291. INTERNSHIP. **3 Hrs.**
This course provides a work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts in a legal setting. Serves as the capstone for the AAS.

LS 295. LEGAL PROFESSIONAL DEVELOPMENT **3 Hrs.**
The course incorporates all course work in the AAS program through creation of a professional portfolio. The course works on skills related to legal professionalism and career development.

LS 311. TORTS. **3 Hrs.**
The purpose of this course is to provide a comprehensive overview of the major areas of tort law, including basic intentional torts, defamation and privacy, negligence, strict (or absolute) liability, product liability, and nuisance and to understand the concepts relevant to all torts. (Requires Admission into BAS LS Program or Program Coordinator signature)

LS 315. CONTRACTS. **3 Hrs.**
This course provides an introduction to the principles of contract law, including the formation, performance and interpretation of contracts, and the consequences of failure to perform contracts. (Requires Admission into BAS LS Program or Program Coordinator signature)

LS 320. PROPERTY AND PROBATE **3 Hrs.**
This course is an overview of ownership and process of transferring assets. Topics include real and personal property, trusts, wills and gifts, administration of decedent's estates, probate procedure, federal and state estate and income taxes, and fiduciary accounting and responsibilities.

LS 330. EVIDENCE **3 Hrs.**
This course provides a systematic study of the rules of evidence and emphasizes the role and importance of these rules to any legal action. The course specifically emphasizes how the paralegal assist the attorney in recognizing and identifying admissible evidence and the challenges to admissibility of evidence. (Requires Admission into BAS LS Program or Program Coordinator signature)

LS 335. FAMILY LAW **3 Hrs.**
This course provides the student with practical and procedural aspects of family law practice. Areas explored include matrimonial law, divorce, alimony, child custody, adoption, paternity, abortion and family violence. (Requires Admission into BAS LS Program or Program Coordinator signature)

LS 460. CAPSTONE. **2 Hrs.**
This course provides the student with an opportunity for students to review, enhance and demonstrate their knowledge and practical application of the law in legal office setting. Capstone course. (Requires Program Coordinator signature and is to be taken semester of graduation)

MAINFRAME COMPUTER TECHNOLOGY (MCT)

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

MCT 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)

MCT 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)

MCT 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)

MCT 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)

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

MANAGEMENT (MGMT)

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.

MGMT 220. PRINCIPLES OF MANAGEMENT. 3 Hrs.
Principles of Management includes the functions of planning, organizing, staffing, and leading, and controlling for organizations in the global environment. Ethics, diversity, technology, future trends, and practical application of principles are included. (Prerequisite: GBUS 101) [Common Professional Component Course]

MGMT 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 220)

MGMT 322. ORGANIZATIONAL BEHAVIOR. 3 Hrs.
Students analyze how behavior impacts the success of a business at the organization level, department/team level, and individual level. Organizations are recognized as social systems and the relationships among all employees and supervisors enable students to be better employees and better managers. Students also learn about authority, communications, performance appraisal, discipline, informal organizations, job satisfaction, and motivation. (Prerequisite: MGMT 220)

MGMT 333. HUMAN RESOURCE MANAGEMENT. 3 Hrs.
The organization and role of the personnel function in business and nonbusiness 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 220)

MGMT 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 220)

MGMT 401. PRODUCTION AND OPERATIONS MANAGEMENT. 3 Hrs.
Students in this course are introduced to the functions of operations management, including designing, planning, organizing, scheduling, and controlling and its relationship with other functional areas of the business enterprise. (Prerequisites: MGMT 220 and GBUS 325) [Common Professional Component Course for BSBA]

MGMT 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)

MGMT 230. PRINCIPLES OF MARKETING. 3 Hrs.
Analysis of the flow of goods and services from the producer to the consumer. Includes target marketing and segmentation, analysis of market research and marketing information systems to provide data for decision making regarding the 4 Ps: Product, Promotion, Pricing, and Placement/Distribution. Includes international marketing, business ethics and social responsibility, and marketing management overview. [Common Professional Component Course for BSBA and BASBA] (Prerequisite: GBUS 101)

MGMT 341. ADVERTISING. 3 Hrs.
An analysis of the principles and practices businesses adapt as part of their promotional mix options, including advertising using traditional media, media selections and implementation, and sales promotions. Students will analyze and practice using social media and online advertising options. All forms of promotional communications will be explored from the perspective of the consumer, business and macro-environment. (Prerequisite: MKTG 230)

MGMT 351. PRINCIPLES OF RETAILING. 3 Hrs.
A comprehensive analysis of retailing enterprises in all business arenas. Students will learn the role retail stores play in the economy and review all issues related to managing a retail business from site selection, HR, IT, customer relationship management, in-store merchandising, visual merchandising and design, buying and pricing strategies, and financial analysis related to retailing. 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 230)

MGMT 360. BUSINESS MARKETING. 3 Hrs.
An examination of the process of marketing to business, Institutional and governmental entities, with a focus on business buyers and development of appropriate marketing strategies for goods and services. (Prerequisite: MKTG 230)

MGMT 371. BUSINESS LOGISTICS. 3 Hrs.
Logistics is a course in advanced logistical concepts. It is designed to provide the student with an in depth

foundation in logistics. Students will understand the role procurement and specifically logistics, plays in achieving the goals of a government facility, private company, manufacturing firm, or a small or large business firm. Students completing this course will obtain skills in research, analysis, writing, speaking, listening, and observing. (Prerequisite: MKTG 230)

MGMT 401. MARKETING RESEARCH. 3 Hrs.
This course is an introduction to research methods which will emphasis the collection, analysis, and interpretation of data that will guide marketing managers toward making effective decisions for planning and controlling the activities of business and service organizations. In addition, students will be able to analyze the effectiveness of the research design, data collection, and analysis of information provided by other researchers in order to make informed decisions about the usefulness of information provided. A team project for a business client is required. (Prerequisite: MKTG 230 and MATH 211)

MGMT 403. MARKETING MANAGEMENT. 3 Hrs.
An analysis of the principles and practices businesses adopt as part of their promotional mix options including advertising using traditional and social media, media selection and implementation, and sales promotions. Students will analyze and practice using social media and online advertising options. All forms of promotional communications will be explored from the perspective of the consumer, business, and macro-environment. (Prerequisite: MKTG 230)

MGMT 460. SALES MANAGEMENT. 3 Hrs.
An investigation of the functions and activities of sales managers. Topics include recruiting, organizing, training, compensating, leading, motivating, and managing the sales force. (Prerequisite: MKTG 230)

MATHEMATICS (MATH)

MATH 100. INTERMEDIATE ALGEBRA. 4 Hrs.
Laws of exponents, polynomial operations, factoring polynomials, solving quadratic equations, compound inequalities, algebraic fractions, rational exponents and radicals, 2x2 and 3x3 systems of linear equations; and complex numbers. (5 lecture hours per week.) (Prerequisite: ACT Math Score ≥ 19, ACT Math Score of 14-18 with concurrent enrollment in Math 100L, or satisfactory score on placement test, or consent) (Requires TI 84 graphing calculator)

MATH 100L. INTERMEDIATE ALGEBRA LAB. 0 Hrs.
Topics include study of real numbers, basic algebraic operations, solving linear equations and inequalities, graphing linear equations. Includes applications and activities to build skills in problem solving. (2 lab hours per week.) (Required for students who's ACT Math Score is between 14 -18, or a placement score indicating such. Requires concurrent enrollment in Math 100)

MATH 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)

MATH 107L. SHOP MATH 1 LAB. 0 Hrs.
Includes basic review of whole numbers and decimals; exponents, prime numbers, prime factorization and LCM, divisibility tests; addition, subtraction, multiplication and division of whole numbers, fractions, and decimals. Order of operations, ratio and proportion, percent's. (2 hours of lab per week) (Requires concurrent enrollment in Math 107)

MATH 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)

MATH 111. TECHNICAL MATH 1. **4 Hrs.**
Solving and graphing linear and quadratic equations; systems of equations; trigonometry of triangles; vectors; function concepts. (Prerequisite: ACT Math Score ≥ 19, or ACT Math Score of 14-18 with concurrent enrollment in Math 111L, or satisfactory Score on placement exam)

MATH 111L. TECHNICAL MATH 1 LAB. **0 Hrs.**
Topics include study of real numbers, basic algebraic operations, solving linear equations and inequalities, graphing linear equations. Includes applications and activities to build skills in problem solving. (Required for students who's ACT Math Score is between 14 -18, or a placement score indicating such. Requires concurrent enrollment in Math 111)

MATH 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)

MATH 120. QUANTITATIVE LITERACY **3 Hrs.**
Topics will included logic, problem solving, quantitative information in everyday life, probability, statistics, and mathematical modeling. (Prerequisite: Satisfactory score on a placement test or consent of instructor)

MATH 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: C or better or better in MATH 100 or satisfactory score on placement test)

MATH 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: C or better or better in MATH 100 or satisfactory score on placement test)

MATH 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: C or better or better in MATH 100 or satisfactory score on placement test)

MATH 141. FINITE MATH. **3 Hrs.**
Logic, sets, counting principles, vectors, matrices, probability theory, linear programming, applications. (Prerequisite: C or better in MATH 126) On Demand

MATH 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)

MATH 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 placement test)

MATH 156. CALCULUS 2. **4 Hrs.**
Continuation of MATH 155. 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)

MATH 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, chisquare test, regression and correlation. (Prerequisite: C or better in MATH 100 or satisfactory score on placement test)

MATH 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)

MATH 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; Stokes' Theorem; Fourier Series and Integrals. (Prerequisite: C or better in MATH 156)

MATH 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)

MATH 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, Math 211 and Admission to Teacher Ed Program) (Co-requisite: Field Experience)

MATH 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) Fall only

MATH 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)

MATH 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 or Admission to BAS Child Development.

MATH 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)

MATH 318. DISCRETE MATH 3 Hrs.
Topics include: logic and set theory, functions, algorithms, recursion, combinatorics, and graphs. (Prerequisites: MATH 126, MATH 112 or satisfactory score on placement test)

MECHANICAL TECHNOLOGY (MECH)

MECH 135. MANUFACTURING PROCESSES AND MATERIALS. 3 Hrs.
A survey of the fundamentals of manufacturing processes and materials. Materials testing and measuring equipment.

MECH 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)

MECH 201L. TECHNOLOGY FLUID MECHANICS LAB. 1 Hrs.
Coordinates exercises with lecture topics. F

MECH 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 non-coplanar forces; friction; equilibrium; construction free body diagrams. (Prerequisites: MATH 111 or MATH 128)

MECH 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)

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

MECH 260. MECHANICAL ET CAPSTONE 1 Hr.
This course serves as a culmination of the Engineering Technology – Mechanical Option A.A.S. Degree program. A project is designed and completed that demonstrates competencies and skills learned within the courses of the program. Industry Standards Examinations are prepared for and taken. Capstone course.

MULTI-CRAFT TECHNOLOGY (MTEC)

MTEC 102. INTRODUCTORY CRAFT SKILLS 2 Hrs.
Provides introduction to, safety, tools, blueprints and rigging. Laboratory exercises are designed to provide hands-on practice of concepts.

MTEC 103. INTRODUCTION TO MAINTENANCE TECHNOLOGIES 3 Hrs.
Topics include fasteners and anchors, oxyfuel cutting, gaskets, pumps and lubrication. Laboratory exercises are designed to provide hands-on practice of concepts.

MTEC 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.

MTEC 280. CAPSTONE COURSE. 1 Hr.
This course serves as a culmination of the MTEC A.A.S. program. A project is designed and completed that demonstrates competencies and skills learned within the MTEC, IM and E & I courses of the program. Capstone course.

MULTIDISCIPLINARY STUDIES (MDS)

MDS 460. FINE ARTS SEMINAR. 3 Hrs.
Senior level course that examines the interdisciplinary relationships among the visual and performing arts. Required for MDS minor in Fine Arts. (Prerequisite ART 101, MUSI 170, and THEA 101)

MDS 491. PROJECT PROPOSAL DEVELOPMENT 1 Hr.
Project Proposal Development provides guidance for students as they clarify goals and integrate knowledge from their three minors in planning an appropriate project to complete their Bachelor of Arts

degree in Multidisciplinary Studies. (Prerequisite for MDS 492)

MDS 492. SENIOR PROJECT. 3 Hrs.
The MDS degree requires students to select three minor areas of study. During the final semester of their senior year, they must complete MDS Senior Project course as a means to incorporate all three disciplines into a senior project and/or internship with a presentation and research paper. Capstone course. (Prerequisite Senior MDS status)

MUSIC (MUSI)

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.

MUSI 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, sight singing and keyboard harmony. (Prerequisites: MUSI 121 with grade of “C”)

MUSI 151. GUITAR FUNDAMENTALS. 1 Hr.
Fundamentals of tone production, hand position, tuning, basic chords, finger picking, playing simple folk songs, and reading musical notation.

MUSI 152. VOCAL TECHNIQUES. 1 Hr.
Fundamentals of singing; vocal production, breath control, style, interpretation, sight reading, diction, and literature.

MUSI 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.

MUSI 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 with a grade of “C” or audition)

MUSI 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)

MUSI 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)

MUSI 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 enjoyment of many types and styles of music. (Prerequisite: Placement test of English 101.)

MUSI 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)

MUSI 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)

MUSI 193. SYMPHONIC CHOIR. **1 Hr.**
Select choral group which performs with orchestra. Membership by audition. (May be repeated.)

MUSI 195. WIND ENSEMBLE. **1 Hr.**
An instrumental ensemble which studies and performs standard wind ensemble literature. (May be repeated) (Prerequisite: Permission)

MUSI 196. JAZZ ENSEMBLE. **1 Hr.**
An instrumental ensemble allowing the student to learn jazz styles and techniques. (May be repeated) (Prerequisite: Permission)

MUSI 198. CHAMBER ORCHESTRA. **1 Hr.**
An instrumental ensemble which studies and performs standard chamber orchestra works. (May be repeated) (Prerequisite: Permission)

MUSI 199. CHAMBER MUSIC. **1 Hr.**
Various small ensembles providing the student an opportunity to perform standard chamber music. (May be repeated) (Prerequisite: Permission)

MUSI 221. MUSIC THEORY 3. **4 Hrs.**
Continuation of MUSI 122. Examines Neapolitan 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. (Prerequisite: MUSI 122 with a grade of “C”)

MUSI 222. MUSIC THEORY 4. **4 Hrs.**
Course is final semester of the music theory sequence. Examines music of the late nineteenth century and beyond 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 with a grade of “C”)

MUSI 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)

MUSI 270. HISTORY OF WESTERN MUSIC 1. 3 Hrs.
This course surveys the music of Western Europe and the New World from the notated music and writings of the ancient Greeks through the Classical period.

MUSI 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.

MUSI 291. MUSICAL THEATRE WORKSHOP. 1-3 Hrs.
College musical theatre production. (Same as THEA 291; may be repeated)

MUSI 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 with a grade of "C")

MUSI 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 with a grade of "C")

MUSI 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)

MUSI 390. UPPER LEVEL APPLIED MUSIC. 1 Hr.
Advanced individual music instruction in voice, guitar, and al band, orchestra, and keyboard instruments. Student must enroll in lower level applied music study (Music 171-190) at WVU Parkersburg and successfully complete a qualifying jury examination. May be repeated for credit.

NURSING (NURS)

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)

NURS 132. DRUG AND DOSAGE CALCULATION I. 1 Hr.
This course is designed to enhance the nursing student's ability to read, interpret, and solve dosage calculation problems. Critical thinking skills are applied to medication situations to emphasize the

importance of accuracy and the avoidance of medication errors. (Pre-Requisite: Admission to Program. Pre/Co-Requisite BIOL 107, Co-Requisite NURS 133, NURS 134)

NURS 133. HEALTH ASSESSMENT AND DIAGNOSTICS I. 2 Hrs.
This course is designed to introduce the nursing student to the knowledge and skills required to perform a health assessment across the lifespan and to document appropriate findings. The nursing student will be introduced to normal lab values and basic diagnostic procedures. (Pre-Requisite: Admission to Program. Pre/Co-Requisite BIOL 107, Co-Requisite NURS 132, NURS 134)

NURS 134. INTRODUCTION TO NURSING CONCEPTS. 8 Hrs.
This foundational course is designed to introduce concepts to the beginning nursing student that will focus on maintaining health and promoting wellness throughout the lifespan. Concepts and core values basic to the foundation of nursing practice are presented. Classroom and laboratory experiences provide opportunity for understanding of the nursing process, clinical judgment and decision making. (Pre-Requisite: Admission to Program. Pre/Co-Requisite BIOL 107, Co-Requisite NURS 132, NURS 133)

NURS 142. DRUG AND DOSAGE CALCULATIONS II. 1 Hr.
This course expands the nursing student's ability to read, interpret, and solve increasingly complex dosage calculation problems. Critical thinking skills are applied to age and acuity specific variations in select populations. (Pre-requisite: BIOL 107, NURS 132, NURS 133, NURS 134. Pre/Co-Requisite BIOL 108, Co-Requisite NURS 143, NURS 144)

NURS 143. HEALTH ASSESSMENT AND DIAGNOSTICS II. 1 Hr.
This course is designed to focus on abnormal assessment and diagnostic findings. Modifications of assessment for select populations will be addressed. (Pre-requisite: BIOL 107, NURS 132, NURS 133, NURS 134. Pre/Co-Requisite BIOL 108, NURS 142, NURS 144)

NURS 144. NURSING CONCEPTS OF HEALTH AND ILLNESS I. 9 Hrs.
This course builds upon foundational concepts across the lifespan while introducing the concepts of the wellness-illness continuum and the individual and family response. Classroom and laboratory experiences provide opportunity for application of the nursing process and development of clinical judgment and decision making. (Pre-requisite: BIOL 107, NURS 132, NURS 133, NURS 134. Pre/Co-Requisite BIOL 108,Co-Requisite NURS 143, NURS 142)

NURS 234. NURSING CONCEPTS OF HEALTH AND ILLNESS II. 9 Hrs.
This course expands the concepts of the wellness-illness continuum, with emphasis on the expanding family and tertiary care within the community. Classroom and laboratory experiences provide opportunity for analysis within the nursing process and application of clinical judgment and decision making. (Prerequisite: BIOL 108, PSYC 101NURS 142, NURS 143, NURS 144. Pre/Co-requisite: BIOL 200; ENGL 101)

NURS 244. SYNTHESIS OF NURSING CONCEPTS. 9 Hrs.
This course together with the capstone course focuses on the integration of interrelated concepts across the wellness-illness continuum. Classroom and laboratory experiences provide opportunity for synthesis of the nursing process and integration of clinical judgment and decision making. Capstone course. (Pre-requisite: NURS 234, BIOL 200, ENGL 101.
Co-requisite: NURS 245)

NURS 245. PROFESSIONAL NURSING AND HEALTH SYSTEMS CONCEPTS. 3 Hrs.
This capstone course will focus on current issues in health care and the nursing profession and is designed to facilitate the transition from student to professional registered nurse. Topics of discussion will include national health policy and politics, ethical and bioethical issues, career development, application for state licensure and preparation for the NCLEX-RN examination. (Pre-requisite: NURS 234, BIOL 200, ENGL 101) (Co-requisite: NURS 244)

NURS 311. FRAMEWORK FOR PROFESSIONAL PRACTICE. 4 Hrs.
A theoretical basis for nursing practice is presented through an exploration of professional nursing role. Selected nursing theories will be explored. Emphasis of the course is on clear and appropriate oral and written communication consistent with American Psychological Association (APA) format. (Prerequisites: Admission into the RN-to-BSN Program)

NURS 320. HEALTH ASSESSMENT AND PROMOTION ACROSS THE LIFE SPAN. 3 Hrs.
The focus of this course is on health promotion across the lifespan. Concepts, theories and current research are explored in relation to health promotion, health behaviors, and behavioral change. (Prerequisites: Admission into the RN-to-BSN Program)

NURS 324. TRENDS AND ISSUES OF HEALTH CARE. 3 Hrs.
Opportunity for an exploration of selected current issues or concepts affecting nurses, nursing and/or health care. (Prerequisites: NURS 311, NURS 320)

NURS 330. INFORMATICS: CONCEPTS, APPLICATION & ISSUES. 3 Hrs.

Introduces the student to the language and technology of nursing. Ethical management of data, information, and knowledge are discussed. (Prerequisites: NURS 311, NURS 320)

NURS 431. LEGAL AND ETHICAL ISSUES IN NURSING. 3 Hrs.
Focuses on the complexity of moral, legal, and ethical issues in health care. (Prerequisites: NURS 324, NURS 330)

NURS 440. RESEARCH IN PROFESSIONAL NURSING. 3 Hrs.
The basic concepts of the research process will be introduced. Students will perform rapid critical appraisals, learn search strategies using various databases, and enhance their ability to analyze and synthesize research findings into clinical practice. (Prerequisites: NURS 324, NURS 330, MATH 211)

NURS 450. EVIDENCE-BASED PRACTICE IN PROFESSIONAL NURSING. 3 Hrs.
The application of an evidence-based approach to patient care will be promoted. The focus will be on enhancing the student's ability to read, comprehend, critically appraise and apply the best evidence to professional nursing practice. (Prerequisites: NURS 440, NURS 431)

NURS 451. LEADERSHIP AND MANAG IN PROFESSIONAL NURSING. 3 Hrs.
Focuses on leadership skills, knowledge, and creativity to promote and manage safe, holistic patient-centered care for diverse individuals, families, groups, and populations across the lifespan. (Prerequisites: NURS 440, NURS 431)

NURS 452. COMMUNITY AND POPULATION BASED HEALTH CARE 4 Hrs.
This final capstone course is designed to provide the baccalaureate nursing student with an opportunity for reflective synthesis of cognitive and affective concepts explored in the BSN completion program. Focuses on community and population-based health promotion, and disease/injury prevention. (Prerequisites: NURS 440, NURS 431)

NURS 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)

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)

PTEC 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: PTEC 101, PTEC 112) (12 hours clinical pharmacy)

PTEC 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 calculations for community, and institutional pharmacy. (Prerequisite: PTEC 101, PTEC 112)

PTEC 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)

PTEC 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: PTEC 112)

PTEC 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)

PHILOSOPHY (PHIL)

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."

PHIL 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.

PHIL 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.

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

PHIL 347. ADVANCED ETHICS. 3 Hrs.
Provides a critical reexamination of current moral issues and studies the application of ethical theories, concepts, and principles. Topics may include abortion, capital punishment, euthanasia, global poverty, sexuality, and other Issues of social concern. Readings are drawn from contemporary and historical sources.

PHLEBOTOMY (PHLEB)

PHLEB 101. PHLEBOTOMY 7 Hrs.
This program prepares professionals to collect blood specimens for the purpose of laboratory analysis. Students become familiar with all aspects of blood collection and develop skills to perform venipuncture safely. Community laboratory practice included.

PHYSICAL SCIENCE (PSCI)

PSCI 101. FUNDAMENTALS OF PHYSICAL SCIENCE. 4 Hrs.
Introduction to the basic concepts of physics, chemistry, geology, oceanography, meteorology, and astronomy. Scientific data collection and analysis will be stressed in lab. (3 lecture hours and 2 lab hours per week.) F S

PSCI 107. ENERGY TECHNOLOGY 4 Hrs.
This course presents the knowledge and analytic tools needed to evaluate energy choices while discussing the latest energy technology innovations. The various vocational opportunities available to graduates of the EAMT and SET programs are reviewed.

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)

PSCI 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.)

PSCI 114. INTRODUCTION TO METEOROLOGY. 1 Hr.
This course covers the basic concepts of meteorology (weather and climate). The course is designed for students seeking the Bachelor of Arts Degree in Elementary Education General Science 5-9 Specialization.

PHYSICS (PHYS)

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)

PHYS 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)

PHYS 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)

PHYS 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 155)

PHYS 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 155, PHYS 111)

POLITICAL SCIENCE (POLS)

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.

POLS 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.

POLS 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.

POLS 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.

POLS 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.

POLS 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)

POLS 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.

PROCESS TECHNOLOGY (ATPT)

ATPT 130. INTRODUCTION TO PROCESS TECHNOLOGY. 2 Hrs.
Introduction to the job requirements and duties of a process technician including the physics, chemistry, equipment, safety, health and the environment for process industries

ATPT 131. PROCESS SAFETY, HEALTH & ENVIRONMENTAL. 3 Hrs.
Safety topics include all OSHA General Industry requirements. Course includes an introduction to the major environmental regulations affecting process industries. Successful completion will result in the issuance of an OSHA 30 Hour Safety Card.

ATPT 132. PROCESS QUALITY. 3 Hrs.
Introduces Total Quality Management concepts including customer service, effective communication, team skills, variance and operating consistency, process capability, continuous improvement, corrective/preventive action, SPC basics, data collection, control charts.

ATPT 140. PROCESS INSTRUMENTATION. 4 Hrs.
Introduces the process instrumentation that a process technician/operator utilizes in performing job functions. In addition, this course provides the student with rudimentary knowledge and troubleshooting assistance of process instrumentation. (Prerequisites: ATPT 130 grade of C or better)

ATPT 141. PROCESS TECHNOLOGY 1 - EQUIPMENT. 3 Hrs.
Course covers the various types of equipment used in the process environment and the interaction of the process operator/technician with it. An understanding of the operation, operator maintenance and trouble shooting is gained. (Prerequisites: ATPT 130 C or better and INDT 143 C or better)

ATPT 242. PROCESS TECHNOLOGY 2 - SYSTEMS. 3 Hrs.
Equipment roles and control methods are studied for each process system. Emphasis is on the safety of each of these systems and the role played by operator in maintaining the system safely. (Prerequisites: ATPT 140 grade of C or better, ATPT 141 grade of C or better and Math 111)

ATPT 244. PROCESS TECH 3 - OPERATIONS. 4 Hrs.
Equipment is studied for the role and control method within each process system. Emphasis is on the safety of each of these systems and the role played by operator in maintaining the system safely. (Prerequisite: ATPT 242) (Co-requisite: ATPT 260.

ATPT 260. PROCESS TECH CULMINATION. 1 Hr.
Culminating course work (capstone) around Process Technology Certification. Utilizing a needs assessment the student will develop the skills sets needed to achieve success in the process industry. Capstone course. (Co-requisite- ATPT 244)

PROFESSIONAL DEVELOPMENT (PDEV)

PDEV 220. 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. Flexible format.

PDEV 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. Flexible format.

PSYCHOLOGY (PSYC)

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.

PSYC 220. INTRODUCTION TO INDUSTRIAL PSYCHOLOGY. 3 Hrs.
This course provides an overview of the field of industrial psychology which includes testing, performance appraisal, training, leadership, job satisfaction, working conditions, organization, safety, stress and engineering psychology.

PSYC 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.

PSYC 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.

PSYC 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.

PSYC 281. ABNORMAL PSYCHOLOGY. 3 Hrs.
An introduction to abnormal behavior patterns: description, causes, and treatment. Focuses on major functional and organic disorders, theories related to mental disorders and methods of therapy. (Prerequisite: PSYC 101 or PSYC 241)

PSYC 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.

PSYC 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)

PSYC 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)

PSYC 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 101or 241 and 60 hrs.)

PSYC 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.)

PSYC 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)

PSYC 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.

PSYC 410. APPLIED ENVIRONMENTAL PSCHOLOGY. 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 & COMM 111) (Co-requisites: Application required)

PSYC 459. CAPSTONE SEMINAR – ADVANCED LEADERSHIP CERTIFICATE. 3 Hrs.
Provides students an opportunity to demonstrate knowledge, skills acquisition, and application of course information. Capstone course. (Restricted to Adv. Leadership certificate students only, taken semester of certificate completion – instructor permission only)

PSYC 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. Capstone course. (Prerequisite: Eligible to graduate with RBA) (Co-requisite: Emphasis in Psychology)

READING (READ)

READ 101. SPEED READING. 3 Hrs.
Increased reading speed; previewing; post viewing; maintaining attention; comprehension.

READ 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.

READ 302. TEACHING READING K6. 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)

READ 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, and LA 301 and READ 302 with grade of "C" or higher) (Co-requisite: Field Experience)

REAL ESTATE (REAL)

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.

REAL 302. REAL ESTATE LAW. 2 Hrs.
The law as it applies to real estate transactions from listing to closing.

REAL 303. REAL ESTATE FINANCE. 2 Hrs.
Procedures and problems with real estate loans and financing; investing in and managing property.

REAL 304. REAL ESTATE APPRAISAL. 2 Hrs.
Estimating value of real property; cost, income, and market data analysis.

RELIGION (RELI)

RELI 111. OLD TESTAMENT SURVEY. 3 Hrs.
The course is designed to help the student acquire a critical and appreciative knowledge of the historical, literary, and religious values of the Old Testament.

RELI 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.

RELI 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. The course provides an introduction to theological analysis.

RELI 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)

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 or PSCI 101 D) (Co-requisite: Field Experience)

SCI 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) Spring only

SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS (STEM)

STEM 260. CERTIFICATE CAPSTONE **1 Hr.**
Required prior to graduation and taken during final semester. Students must successfully complete an external industry-standard assessment in a STEM field to pass the course. Students additionally participate in capstone experience activities.

STEM 420. PROJECT MANAGEMENT **3 Hrs.**
This course covers how, when, and why to plan and implement all the stages of project management, from conception, planning, implementation, through to completion.

STEM 460. ADVANCED STEM CAPSTONE. **1-3 Hrs.**
Required prior to graduation and taken during final semester. Students must successfully complete an external industry-standard assessment in a STEM field to pass the course. Students additionally participate in advanced capstone experience activities. Capstone course.

SECURITY (SEC)

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.

SEC 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)

SEC 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: SEC 300)

SEC 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)

SEC 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, Novell NetWare and Mac OS. (Prerequisite: SEC 300)

SEC 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. (Prerequisite: SEC 300)

SEC 460. SECURITY CAPSTONE. 3 Hrs.
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. Capstone course. (Prerequisites or concurrent: SEC 410 and STEM 420)

SOCIAL STUDIES (SOST)

SOST 315. INSTRUCTIONAL STRATEGIES IN SOCIAL STUDIES. 3 Hrs.
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.)

SOST 316. INSTRUCTIONAL STRATEGIES FOR MIDDLE SCHOOL SOCIAL STUDIES. 2 Hrs.
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.) Fall only

SOCIOLOGY (SOC)

SOC 101. INTRODUCTION TO SOCIOLOGY. 3 Hrs.
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 socioeconomic classes. Students will gain insight into the social behavior of people in other cultures and adopt an attitude of cultural relativism.

SOC 105. INTRODUCTION TO ANTHROPOLOGY. 3 Hrs.
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.

SOC 107. SOCIAL PROBLEMS. 3 Hrs.
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.

SOC 151. SOCIOLOGY OF THE WORKPLACE. 3 Hrs.
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)

SOC 221. MARRIAGE AND THE FAMILY. 3 Hrs.
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.

SOC 223. DEATH AND DYING. 3 Hrs.
Sociological and anthropological perspectives on death and dying. Examines socio-psychological and structured factors supporting the beliefs and practices associated with the institution of death, both historically and in contemporary society.

SOC 232. CRIMINOLOGY. 3 Hrs.
This course provides an introduction to the sociological study of crime and criminal behavior, focusing on the various theories of crime causation. Criminological methods of inquiry and societal reactions to crime will also be addressed.

SOC 233. JUVENILE DELINQUENCY. 3 Hrs.
This course examines the nature, extent, and causes of juvenile delinquency. The course is structured to focus on the juvenile justice system, theoretical explanations of delinquency, and current research in the field of study.

SOC 235. RACE RELATIONS AND MINORITY GROUPS. 3 Hrs.
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.

SOC 302. DEVIANT BEHAVIOR. 3 Hrs.
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)

SOC 350. INTERNATIONAL CULTURE. 3 Hrs.
Sociological study of the social behavior and structure of an international culture. The course will examine beliefs, symbols, language, values, norms, folkways, and mores of various cultures. (Prerequisite: SOC 101)

SOC 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: SOC 101)

SOC 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)

SOC 390. WORLD CULTURES THROUGH FILM. 3 Hrs.
Cultural perspectives through international films with critical thinking discussions and writing components included. (Prerequisites: SOC 101 and ENGL 102)

SOC 405. 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)

STUDENT DEVELOPMENT (SDEV)

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.

SURGICAL TECHNOLOGY (ST)

ST 100. INTRODUCTION TO SURGICAL TECHNOLOGY. 6 Hrs.
This course is designed to introduce the student to the role, working environment, and required skills of the ST. Asepsis, sterile technique, and surgical case management are emphasized in structured campus laboratory and in the clinical setting. (Prerequisites: Admission to the program Co-requisites: ST 102, BIOL 109/113)

ST 102. SURGICAL INSTRUMENTATION, EQUIPMENT, AND SUPPLIES. 3 Hrs.
This course is designed to introduce students to the different classifications of instrumentation, equipment, and supplies required to perform surgical procedures. Assembly of instrumentation will help refine students' manual dexterity and anticipatory skills. (Prerequisites: Admission to the program Co-requisites: ST 100, BIOL109/113)

ST 110. PATIENT CARE CONCEPTS I. 6 Hrs.
Diagnostic and surgical procedures in various surgical specialties will be discussed. The clinical component will focus on developing skills in assisting team members and the organization of work by learning to use economy of time, motion, and materials. ST 110 will introduce incisions, diagnostic and surgical procedures in various surgical specialties. (Prerequisites: ST 100, ST 102 BIOL 109/113 Co-requisites: ST 113, BIOL 110, MATH 100)

ST 113. PATHOPHYSIOLOGY OF THE SURGICAL PATIENT. 3 Hrs.
This course will enable students to effectively communicate as a surgical team member utilizing medical terminology. Introduction to disease and tumors will be discussed. Surgically treatable diseases and disorders are emphasized. (Prerequisites: ST 100, ST 102, BIOL 109 Co-requisites: ST 110, BIOL 110, MATH 100)

ST 114. PHARMACOLOGY FOR THE SURGICAL TECHNOLOGIST. 3 Hrs.
This course is designed to introduce the surgical technology students to their role in handling of medications and solutions in the surgical setting. A discussion of medication use during the peri-operative period will assist the learner in understanding patient response to various medications. (Prerequisites: ST 110, ST 113, BIOL 110, MATH 100, ENGL 101, Co-requisite ST 211)

ST 211. PATIENT CARE CONCEPTS II. 8 Hrs.
This course is a continuation of ST 110. The ST 211 clinical component provides solo scrub experiences that promote anticipating needs and minimizing the patient's exposure to trauma. (Prerequisites: ST 113, ST 110, BIOL 110, MATH 100, ENGL 101 Co-requisites: ST 114)

ST 212. SURGICAL TECHNOLOGY CAPSTONE. 10 Hrs.
Independent first scrub roles and medication preparation in the clinical setting are emphasized. Students will display the manual dexterity and physical stamina required in the employment setting. Concentration will be directed toward anticipatory socialization and adaption to aid role transition from student to graduate. (Prerequisites: ST 211, ST 114)

ST 250. DISASTER PREPAREDNESS 3 Hrs.
Focus on current events involving man-made and natural disasters and what the surgical technologist's role is during these emergencies. Students will develop team building skills to be utilized if these

disasters were to occur in the local area. (Pre-requisites: Certificate in Surgical Technology and CST, BIOL 109, 113, 110)

ST 255. LEADERSHIP FOR THE SURGICAL TECHNOLOGIST 4 Hrs.
This course is designed to prepare the practicing surgical technologist for leadership roles. Emphasis will be on professional accountability and the importance of credentialing in the surgical technology practice. (Pre-requisites: Certificate in Surgical Technology and CST, BIOL 109, 113, 110)

THEATRE (THEA)

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.

THEA 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.

THEA 103. ORAL INTERPRETATION. 3 Hrs.
Theory and practice in interpreting literature orally; selection, analysis, and presentational techniques; poetry, prose, and drama are explored. (Prerequisite: COMM 111)

THEA 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. May be repeated.

THEA 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.

THEA 215. THEATRE MAKEUP. 3 Hrs.
A course designed to give the student an elementary command of theatre makeup through a study of the human face, light and shadow, color, equipment, construction and makeup types.

THEA 250. DRAMATIC LITERATURE. 3 Hrs.
Reading and discussion of a minimum of 10 major dramatic works.

THEA 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.

THEA 291. MUSICAL THEATRE WORKSHOP. 1-3 Hrs.
College musical theatre production. Credit for participation in a musical. (Same as MUSI 291; May be repeated)

THEA 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.

THEA 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)

WELD 111. BASIC OXYACETYLENE. **3 Hrs.**
Principles of oxyacetylene welding, cutting, and brazing. Nomenclature of the equipment, assembly, care, and safety.

WELD 121. BASIC SMAW. **3 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)

WELD 131. BASIC GTAW. **3 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)

WELD 132. ADVANCED GTAW. **3 Hrs.**
Pipe certification utilizing the gas tungsten arc welding process according to the ASME Code.

WELD 133. BASIC FCAW. **3 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.

WELD 134. BASIC GMAW. **3 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.

WELD 135. ADVANCED GMAW. **3 Hrs.**
Pipe certification utilizing the gas metal tungsten arc welding process according to ASME Code

WELD 136. ADVANCED FCAW. **3 Hrs.**
Pipe certification utilizing the flux core arc welding process according to the ASME Code

WELD 160. WELDING BLUEPRINT READING. **3 Hrs.**
Fundamentals of blueprint reading geared towards teaching students to decipher blueprints found in industrial settings.

WELD 171. WELDING THEORY. **2 Hrs.**
Theory of all ARC welding processes; equipment function and their use. Methods and procedures application.

WELD 221. ADVANCED SMAW. **3 Hrs.**
Bevel plate certification with the shielded metal arc welding process according to the AWS Code. (CBE course) (Prerequisite: WELD 122)

WELD 260. WELDING CAPSTONE. **2 Hr.**
This capstone course requires students to demonstrate the skills and knowledge acquired throughout the program. Successful completion of the identified external industry standard assessment(s) is required to graduate. Capstone course. (Prerequisite: Welding students in final semester before graduation)

WELD 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)

WELD 279. WELDING INSPECTION. 3 Hrs.
Teaches the student about inspection and prepares the student to take the AWS welding inspection exam with the API 1104 Code Book.

WELD 281. METALLURGY. . 3 Hrs.
Properties of ferrous and nonferrous metals; physical metallurgy of ferrous metals; producing iron and steel; surface treatment; alloys of special steel; classification of steels

WELD 291. FAB SHOP. 3 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)


PUSH