

Emphasis is placed on, but not limited to the following residential installations, commercial installations, and the function of independent grounding elements. Upon completion, the students should be able to explain and design a simple grounding system.

## ENGINEERING (EGR)

**EGR 125 MODERN GRAPHICS FOR ENGINEERS 3 Hrs.**  
PREREQUISITE: None.

This course provides an introduction to manual and computer-assisted techniques of graphic communication employed by professional engineers. Topics include: lettering; instrumental and computer-aided drafting, technical sketching, orthographic projection, pictorial, sectional, and auxiliary views and dimensioning.

**EGR 156 COMPUTER METHODS FOR ENGINEERS 3 Hrs.**  
PREREQUISITE: MTH 115.

This course consists of engineering applications using the FORTRAN IV computer programming language.

## ENGLISH (ENG)

**ENG 080 ENGLISH LABORATORY 1-2 Hrs.**  
PREREQUISITE: None.

This course, which may be repeated as needed, provides students with a laboratory environment where they can receive help from qualified instructors on English assignments at the developmental level. Emphasis is placed on one-to-one guidance to supplement instruction in English courses. A student's success in this course is measured by success in those other English courses in which the student is enrolled.

**ENG 092 BASIC ENGLISH I 3-4 Hrs.**  
PREREQUISITE: None

This course is a review of basic writing skills and basic grammar. Emphasis is placed on the composing process of sentences and paragraphs in standard American written English. The student will demonstrate these skills chiefly through the writing of well-developed, multi-sentence paragraphs.

**ENG 093 BASIC ENGLISH II 3-4 Hrs.**  
PREREQUISITE: ENG 092 or equivalent placement score

This course is a review of composition skills and grammar. Emphasis is placed on coherence and the use of a variety of sentence structures in the composing process and on standard American written English usage. The student will demonstrate these skills chiefly through the writing of paragraph blocks and short essays.

**ENG 097 PHONICS 1-2 Hrs.**  
PREREQUISITE: None.

This course provides help to students who are experiencing English-language difficulties associated with sound. Emphasis is placed on the sounds of English words, intonation, differentiating accents, pronunciation, and listening skills. The student's grade will reflect the degree of improvement demonstrated by that student from the beginning to the end of the semester.

**COM 100 INTRODUCTORY TECHNICAL ENGLISH I 3 Hrs.**  
PREREQUISITE: ENG 092 or equivalent placement score.

This course is designed to enhance reading and writing skills for the workplace. Emphasis is placed on technical reading, job-related vocabulary, sentence writing, punctuation, and spelling with substantial focus on occupational performance requirements. Upon com-

pletion, the student should be able to identify main ideas with supporting details and produce mechanically correct short writings appropriate to the workplace.

**ENG 101 ENGLISH COMPOSITION I 3 Hrs.**  
PREREQUISITE: ENG 093 or equivalent placement score.

English Composition I provides instruction and practice in the writing of at least six (6) extended compositions and the development of analytical and critical reading skills and basic reference and documentation skills in the composition process. English Composition I may include instruction and practice in library usage.

**ENG 102 ENGLISH COMPOSITION II 3 Hrs.**  
PREREQUISITE: A grade of C or better in ENG 101.

English Composition II provides instruction and practice in the writing of six (6) formal, analytical essays, at least one of which is a research project using outside sources and/or references effectively and legally. Additionally, English Composition II provides instruction in the development of analytical and critical reading skills in the composition process. English Composition II may include instruction and practice in library usage.

**ENG 130 TECHNICAL REPORT WRITING 3 Hrs.**  
PREREQUISITE: ENG 101.

This course provides instruction in the production of technical and/or scientific reports. Emphasis is placed on research, objectivity, organization, composition, documentation, and presentation of the report. The student will demonstrate the ability to produce a written technical or scientific report by following the prescribed process and format.

**ENG 225 EARLY ENGLISH LITERATURE 3 Hrs.**  
PREREQUISITE: A grade of C or better in ENG 102.

This course begins with the Anglo-Saxon period and ends with the publication of *Paradise Lost* and includes extensive treatment of Chaucer, Shakespeare, and Milton, as well as other important early authors including a significant number of early American writers. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate these works to their historical and literary contexts, and understand relevant criticism and research.

**ENG 226 MODERN LITERATURE IN ENGLISH 3 Hrs.**  
PREREQUISITE: A grade of C or better in ENG 102.

This is a survey course of eighteenth- and nineteenth-century literature written in English. It includes roughly equal treatment of Enlightenment, Romantic, and Victorian literature in both England and America. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate these works to their historical and literary contexts, and understand relevant criticism and research.

**ENG 227 TWENTIETH CENTURY LITERATURE IN ENGLISH 3 Hrs.**  
PREREQUISITE: A grade of C or better in ENG 102.

Coverage of this course starts with the beginning of the 20th century and ends with the present. This course will cover standard literary texts from both England and America, with an inclusion of literature, which reflects the globalization of English in the 20th Century. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate these works to their historical and literary contexts, and understand relevant criticism and research.

- ENG 246 CREATIVE WRITING I** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 102.  
This course provides instruction and practice in the writing of critical analysis of imaginative forms of literature. Emphasis is placed on originality in the creative writing process, and this course may include instruction on publishing. The student will compose a significant body of imaginative literature, which may be read by or to the class.
- ENG 247 CREATIVE WRITING II** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 246.  
A continuation of ENG 246, this course provides instruction and practice in the writing of critical analysis of imaginative forms of literature. Emphasis is placed on originality in the creative writing process, and this course may include instruction on publishing. The student will compose a significant body of imaginative literature, which may be read by or to the class.
- ENG 248 CREATIVE WRITING III** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 247.  
A continuation of ENG 247, this course provides instruction and practice in the writing of critical analysis of imaginative forms of literature. Emphasis is placed on originality in the creative writing process, and this course may include instruction on publishing. The student will compose a significant body of imaginative literature, which may be read by or to the class.
- ENG 249 CREATIVE WRITING IV** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 248.  
A continuation of ENG 248, this course provides instruction and practice in the writing of critical analysis of imaginative forms of literature. Emphasis is placed on originality in the creative writing process, and this course may include instruction on publishing. The student will compose a significant body of imaginative literature, which may be read by or to the class.
- ENG 251 AMERICAN LITERATURE I** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 102.  
This course is a survey of American literature from its inception to the middle of the nineteenth century. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, the student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.
- ENG 252 AMERICAN LITERATURE II** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 102.  
This course is a survey of American literature from the middle of the nineteenth century to the present. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion, the student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.
- ENG 261 ENGLISH LITERATURE I** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 102.  
This course is a survey of English literature from the Anglo-Saxon period to the Romantic Age. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, the student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.
- ENG 262 ENGLISH LITERATURE II** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 102.  
This course is a survey of English literature from the Romantic Age to the present. Emphasis is placed on representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, the student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.
- ENG 271 WORLD LITERATURE I** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 102.  
This course is a study of selected literary masterpieces from Homer to the Renaissance. Emphasis is placed on major representative works and writers of this period on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, students will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.
- ENG 272 WORLD LITERATURE II** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 102.  
This course is a study of selected literary masterpieces from the Renaissance to the present. Emphasis is placed on major representative works and writers of this period and on the literary, cultural, historical, and philosophical forces that shaped these works and that are reflected in them. Upon completion and in written compositions, the student will be able to interpret the aesthetic and thematic aspects of these works, relate the works to their historical and literary contexts, and understand relevant criticism and research.
- ENG 273 GREAT WORLD MASTERPIECES I** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 102.  
This course is a survey of the significant literature of Western civilization, beginning with ancient Greece and continuing through the Renaissance. Emphasis is placed on representative works and writers, on the ideas that shaped and that are reflected in these works, and on the literary periods and movements during which these works were produced. The student will demonstrate through tests and literary critiques with appropriate research and documentation an understanding of these works.
- ENG 274 GREAT WORLD MASTERPIECES II** 3 Hrs.  
PREREQUISITE: A grade of C or better in ENG 102.  
This course is a survey of the significant literature of Western civilization, beginning with the Renaissance and continuing through the present. Emphasis is placed on representative works and writers, on the ideas that shaped and that are reflected in these works, and on the literary periods and movements during which these works were produced. The student will demonstrate through tests and literary critiques with appropriate research and documentation an understanding of these works.
- ENG 299 DIRECTED STUDIES IN LANGUAGE AND LITERATURE** 1-3 Hrs.  
PREREQUISITE: Permission of Instructor.  
This course, which may be repeated for credit so long as the topics differ, provides the student the opportunity to study an English-language or literary topic

chosen by the student in consultation with the instructor. Emphasis is placed on the student's investigating the topic and reporting the results of the investigation. The student will demonstrate knowledge of the topic through either a written or an oral presentation.

## EMERGENCY MEDICINE (EMS)

### EMERGENCY MEDICAL TRAINING I (Basic)

#### EMS 105 FIRST RESPONDER 3 Hrs.

PREREQUISITE: None

This course provides theory in emergency procedures as contained in the current National Standard Training Curriculum (NSTC) for the First Responder. The course is an introduction to the emergency medical services system and provides fundamentals for students to improve the quality of emergency care provided as the first person to an emergency scene until emergency medical services arrive. Completion of specific student competencies, as outlined in the current NSTC for the First Responder, are required for successful course completion.

#### EMS 107 EMERGENCY VEHICLE OPERATOR AMBULANCE 1 Hr.

PREREQUISITE: Must present a valid driver's license as required by program.

The Emergency Vehicle Operator Course Ambulance provides the student with training as contained in the current National Standard Training Curriculum (NSTC) for the Emergency Vehicle Operator Course (EVOC) Ambulance. The course provides the knowledge and skill practice necessary for individuals to learn how to safely operate all types of ambulances. Topics include introduction to the NSTC for ambulance operators; legal aspects of ambulance operation; communication and reporting; roles and responsibilities; ambulance types and operation, ambulance inspection, maintenance, and repair; navigation and route planning; basic maneuvers and normal operating situations; operations in emergency mode and unusual situations, special considerations in safety; and the run. Completion of specific student competencies, utilizing NSTC guidelines, are required for successful completion of this course. NOTE: To qualify for licensure status as an ambulance driver in the State of Alabama, students must successfully complete this course and meet additional requirements as required by the Alabama Department of Public Health.

#### EMS 116 EMS BASIC THEORY AND LABORATORY 6 Hrs.

PREREQUISITE: Admission to the EMT- Basic Program.

COREQUISITE: EMS 117

This course is required to apply for certification as an EMT basic. This course provides students with insights into the theory and application of concepts related to the profession of emergency medical services. Specific topics include: EMS preparatory, airway maintenance, patient assessment, treating trauma patients, various medical procedures, treating infants and children, and various EMS operations. This course is based on the Emergency Medical Technician-Basic National Standard Curriculum.

#### EMS 117 EMS BASIC CLINICAL COMPETENCIES 1 Hrs.

PREREQUISITE: Admission to the EMT- Basic Program.

COREQUISITE: EMS 116

This course is required to apply for certification as an EMT basic. This course provides students with clinical education experiences to enhance knowledge and

skills learned in the EMS 116, EMS Basic Theory and Lab. This course helps student prepare for the National Registry Exam.

#### EMS 280 BASIC LIFE SUPPORT INSTRUCTOR 1 Hr.

PREREQUISITE: Successful completion, within the past 12 months, of all areas of basic life support training (CPR).

This course provides students with concepts as related to areas of basic life support instruction. Topics include history, concepts, and systems of emergency cardiac care; cardiopulmonary physiology, dysfunction, and actions for survival; introduction to the performance of CPR; foreign body airway obstruction management; pediatric basic life support; special techniques/resuscitation situations, pitfalls, and complications; teaching and learning in basic life support; teaching strategies; and basic provider course organizations. Student will also successfully participate in practice teaching of a cardiopulmonary resuscitation (CPR) class prior to course completion. Students successfully completing this course will receive appropriate documentation of course completion.

#### EMS 282 BASIC TRAUMA LIFE SUPPORT INSTRUCTOR 1 Hr.

PREREQUISITE: EMS 267 and/or as required by program.

This course provides students with theory and practice in the techniques of teaching Basic Trauma Life Support (BTLIS). The course is taught to provide instructor training in trauma care and management in accordance with national standards. Students will also successfully participate in practice teaching of a BTLIS provider course prior to course completion. Students successfully completing this course will receive appropriate documentation of course completion.

### EMT-P (Paramedic)

#### EMP 189 APPLIED ANATOMY AND PHYSIOLOGY FOR THE PARAMEDIC 4 Hrs.

PREREQUISITE: Admission to the EMT-Paramedic Program.

This course introduces human anatomy and physiology and includes concepts related to basic chemistry; fluid, electrolyte, and acid-based balance; functions of cell, tissues, organs, and systems; pathophysiology; and associated medical terminology. Emphasis is placed on applying content to signs, symptoms, and treatments; and situations commonly seen by paramedics. Upon completion, the student should be able to demonstrate a basic understanding of the structure and function of the human body.

#### EMP 191 PARAMEDIC PREPARATORY 2 Hrs.

PREREQUISITE: Admission to the EMT-Paramedic Program.

COREQUISITE: Approved anatomy and physiology course(s).

NOTE: HPS-110, Introduction to Health Care, may be substituted for this course.

This course introduces issues related to the practice of prehospital advanced life support as a career, with a focus on issues common to all health care professions. Content areas include: paramedic roles and responsibilities, well-being of the paramedic, illness and injury prevention, medical-legal-ethical issues, therapeutic communications, and medical terminology. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

- EMP 192 PARAMEDIC OPERATIONS 3 Hrs.**  
 PREREQUISITE: Admission to the EMT- Paramedic Program.  
 COREQUISITE: Approved anatomy and physiology course(s).  
 This course focuses on the operational knowledge and skills needed for safe and effective patient care within the paramedic's scope of practice. Content areas include: pathophysiology, life span development, ambulance operations, medical incident command, rescue awareness and operations, hazardous materials incidents, crime scene awareness, and Alabama EMS laws and rules. Upon completion, the student will have demonstrated competency in those respective component of the National Standard Curriculum for the EMT- Paramedic and requirements set forth by the Alabama Department of Public Health.
- EMP 193 PATIENT ASSESSMENT AND MANAGEMENT 3 Hrs.**  
 PREREQUISITE: Admission to the EMT- Paramedic Program.  
 COREQUISITE: Approved anatomy and physiology course(s).  
 This course provides the knowledge and skills needed to perform a comprehensive patient assessment, make initial management decisions, and to communicate assessment findings and patient care verbally and in writing. Content areas include: airway management, history taking, techniques of the physical examination, patient assessment, clinical decision making, communications, documentation, and assessment based management. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.
- EMP 194 PARAMEDIC GENERAL PHAMACOLOGY 2 Hrs.**  
 PREREQUISITE: Admission to the EMT- Paramedic Program.  
 COREQUISITE: Approved anatomy and physiology course(s).  
 NOTE: HPS-104, General Pharmacology for the Health Sciences, may be substituted for this course.  
 This course introduces basic pharmacological agents and concepts, with an emphasis on drug classifications and the knowledge and skills required for safe, effective medication administration. Content areas include: general principles of pharmacology and pharmacologic pathophysiology; venous and intraosseous access techniques, the metric and apothecary system; computation of dosage and solution problems, administration of pharmacologic agents; and nasogastric tube placement. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.
- EMP 195 ADVANCED TRAUMA MANAGEMENT A 6 Hrs.**  
 PREREQUISITE: Admission to the EMT- Paramedic Program.  
 COREQUISITE: Approved anatomy and physiology course(s), approved for clinical studies.  
 NOTE: The combination of EMP- 196, Advanced Trauma Management-B, and EMP-197, Clinical Competencies-I will substitute for this course.  
 This course relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for trauma patients. Content areas include the pathophysiology, assessment, and management of trauma as related to: trauma systems; mechanisms of injury; hemorrhage and shock; soft tissue injuries; burns; and head, facial, spinal, thoracic, abdominal, and musculoskeletal trauma. Theory and skills are applied to a variety of patient situations in the clinical setting, with a focus on patient assessment, trauma management, advanced airway management, I.V./I.O. initiation and medication administration. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT- Paramedic and requirements set forth by the Alabama Department of Public Health.
- EMP 198 MEDICAL PATIENT MANAGEMENT I 3 Hrs.**  
 PREREQUISITE: Admission to the EMT- Paramedic Program.  
 COREQUISITE: Approved anatomy and physiology course(s).  
 This course relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for specific medical conditions. Content areas include: pulmonology, neurology, gastroenterology, renal/urology, toxicology, hematology, environmental conditions, infectious and communicable diseases, abuse and assault, patients with special challenges, and acute interventions for the chronic care patient. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.
- EMP 199 CARDIOVASCULAR ELECTROPHYSIOLOGY 3 Hrs.**  
 PREREQUISITE: Admission to the EMT- Paramedic Program.  
 COREQUISITE: Approved anatomy and physiology course(s).  
 This course introduces the cardiovascular system, cardiovascular electrophysiology, and electrocardiographic monitoring. Content areas include: cardiovascular anatomy and physiology, cardiovascular electrophysiology, electrocardiographic monitoring, rhythm analysis, and prehospital 12-lead electrocardiogram monitoring and interpretation. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT- Paramedic and requirements set forth by the Alabama Department of Public Health.
- EMP 200 MEDICAL PATIENT MANAGEMENT IIA 6 Hrs.**  
 PREREQUISITE: Admission to the EMT- Paramedic Program.  
 COREQUISITE: Approved anatomy and physiology course(s), approved for clinical studies.  
 NOTE: The combination of EMP-201, Medical Patient Management-IIB, and EMP-202, Clinical Competencies-II will substitute for this course.  
 This course relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for specific medical conditions. Content areas include: endocrinology, allergies and anaphylaxis, behavioral/psychiatric conditions, gynecology, obstetrics, neonatology, pediatrics, and geriatrics. In the clinical setting, theory and skills are applied to a variety of medical situations across the life span of the patient, with a focus on communication with and management of cardiac, acute care, psychiatric/behavioral, obstetrical, newborn, pediatric, geriatric, and acute interventions for chronic care patients, and patients with special challenges. Upon completion, the student will have demonstrated competency in those respective compo-

nents of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

**EMP 203 CARDIOVASCULAR PATIENT MANAGEMENT**

**3 Hrs.**

**PREREQUISITE:** Admission to the EMT- Paramedic Program, EMP-199.

**COREQUISITE:** Approved anatomy and physiology course(s).

This course relates pathophysiology and assessment findings to the formulation of field impressions and implementation of treatment plans for specific cardiovascular conditions. Content areas include: assessment of the cardiovascular patient, pathophysiology of cardiovascular disease, and techniques of management including appropriate pharmacologic agents and electrical therapy. Upon completion, the student will have demonstrated competency in those respective components of the National Standard Curriculum for the EMT-Paramedic and requirements set forth by the Alabama Department of Public Health.

**EMP 204 TRANSITION TO PARAMEDIC PRACTICE**

**3 Hrs.**

**PREREQUISITE:** Admission to the EMT- Paramedic Program.

**COREQUISITE:** Approved anatomy and physiology course(s).

This course is designed to meet additional state and local educational requirements for paramedic practice. Content may include: prehospital protocols, transfer medications, topics in critical care and transport, system presentation, and/or national standard certification courses as dictated by local needs or state requirement. Upon completion, the student should have met all ancillary educational requirements set forth by the Alabama Department of Public Health and local employers.

**EMP 205 PARAMEDIC TERMINAL COMPETENCIES**

**2 Hrs.**

**PREREQUISITE:** Admission to the EMT- Paramedic Program, approved anatomy and physiology course(s). This course is designed to review the National Standard Curriculum for the EMT- Paramedic and to assist students in preparation for the paramedic licensure examination. Emphasis is placed on validation of knowledge and skills through didactic review, skills lab performance, computer simulation, and practice testing. Upon completion, the student should be sufficiently prepared to sit for the paramedic licensure examination.

**EMP 206 PARAMEDIC FIELD PRECEPTORSHIP**

**6 Hrs.**

**PREREQUISITE:** Admission to the EMT- Paramedic Program.

Approved anatomy and physiology course(s), approved for clinical studies.

This course provides field experiences in the prehospital setting with advanced life support EMS units. Under the direct supervision of a field preceptor, students synthesize cognitive knowledge and skills developed in the skills laboratory and hospital clinical to provide safe and effective patient care in the prehospital environment. Upon completion, the student should have refined and validated his or her patient care practices to provide safe and effective patient care over a broad spectrum of patient situations and complaints.

**EMP 207 PARAMEDIC TEAM LEADER PRECEPTORSHIP**

**1 Hr.**

**PREREQUISITE:** Admission to the EMT- Paramedic Program, approved anatomy and physiology course(s). This course is designed to evaluate the student's ability to integrate didactic, psychomotor skills, clinical,

and field internship instruction to serve as a competent entry-level paramedic. This final evaluative (rather than instructional) course focuses on the student's professional attributes and integrative competence in clinical decision-making and team leadership in the pre-hospital setting. Upon completion, the student should have demonstrated adequate knowledge and skills, professional attitudes and attributes, clinical decision-making, and team leadership abilities to effectively function as a competent entry-level paramedic.

**REFRESHER COURSES (Continuing Education)**

**EMS 113 INFECTION CONTROL FOR HEALTH PROFESSIONALS**

**1 Hr.**

**PREREQUISITE:** None.

This course is designed for students planning to enter a health related field of study or public service occupations. The course focuses on the sources of communicable diseases and describes methods for prevention of transmission of bloodborne and airborne pathogens. Topics include prevention; universal precautions (body-substance isolation) and asepsis; immunization; exposure control; disposal; labeling; transmission; exposure determination; post-exposure reporting; and an exposure control plan. The course is taught following current guidelines set forth by the Occupational Safety and Health Administration (OSHA). Upon completion, the student should be able to participate in the clinical setting, identify potential sources of bloodborne and airborne pathogens, and use appropriate universal precautions.

**EMS 150 EMT-BASIC REFRESHER**

**2 Hrs.**

**PREREQUISITE:** Completion of a NSTC course for EMT-Basic or None.

This course provides the student with theory in review of the current National Standard Training Curriculum (NSTC) for the EMT-Basic. It also serves as a transition or bridge course when a new national curriculum is adopted. This course contains specific content areas as defined by the NSTC. The student is required to complete specific competencies, as outlined by the NSTC, for successful course completion.

**EMS 153 EMS DISPATCHER**

**3 Hrs.**

**PREREQUISITE:** None.

This course provides students with theory as contained in the National Training Curriculum (NSTC) for EMS Dispatcher.

This course is designed to prepare EMS dispatcher personnel to operate a telecommunication base station for the purpose of receiving request for emergency medical services and allocating community resources in a response to such request. Upon completion, the student should have an understanding of emergency medical services dispatch procedures and be able to effectively receive a call or dispatch appropriate personnel, utilizing a scenario in a simulated situation.

**EMS 190 EMT-INTERMEDIATE REFRESHER**

**2 Hrs.**

**PREREQUISITE:** Completion of a NSTC course for the EMT-Intermediate.

This course provides students with a review of material contained in the National Standard Training Curriculum (NSTC) for the EMT-Intermediate. It also serves as a transition or bridge course when a new national curriculum is adopted. This course contains specific content areas as defined by the NSTC and the Alabama Department of Public Health. The student is required to complete specific competencies according to the NSTC for successful course completion.

<b>EMS 265</b>	<b>PARAMEDIC REFRESHER</b>	<b>3 Hrs.</b>	<b>FSC 205</b>	<b>FIRE INSTRUCTOR I</b>	<b>3 Hrs.</b>
	PREREQUISITE: Completion of a NSTC course for the Paramedic or None.			PREREQUISITE: None.	
	This course provides students with a review of material contained in the current National Standard Training Curriculum (NSTC) for the Paramedic. It also serves as a transition or bridge course when a new national curriculum is adopted. This course contains specific content areas as defined by the NSTC. The student is required to complete specific competencies for successful course completion.			This course is a study of the instructor's roles and responsibilities; factors that influence the teaching/learning process; the techniques of planning, preparing, and presenting an effective lesson; training aids and their utilization; and the purpose and principles of testing and evaluation.	
<b>FIRE SCIENCE/FIRE SERVICES MANAGEMENT (FSC)</b>					
<b>FSC 100</b>	<b>BASIC FIREMANSHIP</b>	<b>2 Hrs.</b>	<b>FSC 206</b>	<b>FIRE INSTRUCTOR II</b>	<b>3 Hrs.</b>
	PREREQUISITE: None.			PREREQUISITE: FSC 205.	
	This course is an introduction to the basics of Fire Science, including fire chemistry, salvage, hydraulics, laying hose, laddering, and overhaul work.			This is a study of task and job analysis; behavioral/performance objectives; lesson plan and instructional material development; the teaching/learning process; methods of instruction and evaluation; and the use of references.	
<b>FSC 101</b>	<b>INTRODUCTION TO THE FIRE SERVICE</b>	<b>3 Hrs.</b>	<b>FSC 207</b>	<b>FIRE INSTRUCTOR III</b>	<b>3 Hrs.</b>
	PREREQUISITE: None.			PREREQUISITE: FSC 206.	
	This course is a survey of the philosophy and history of fire protection, loss of property and life by fire, review of municipal fire defenses, and the organization and function of federal, state, county, city, and private fire protection.			This is a study of occupational analysis; development of course instructional materials, evaluations, and training records and reports.	
<b>FSC 103</b>	<b>HAZARDOUS MATERIALS I</b>	<b>3 Hrs.</b>	<b>FSC 210</b>	<b>BUILDING CONSTRUCTION FOR THE FIRE SERVICE</b>	<b>3 Hrs.</b>
	PREREQUISITE: None.			PREREQUISITE: None.	
	This is a survey of fundamental facts and operations applicable to hazardous materials incidents. The emphasis is on storage, handling, standards, special equipment, toxicology, and monitoring.			This course highlights and assesses the problems and hazards to fire personnel when a building is attacked by fire or is under stress from other factors dealing with collapse.	
<b>FSC 104</b>	<b>HAZARDOUS MATERIALS II</b>	<b>3 Hrs.</b>	<b>FSC 211</b>	<b>BUILDING CONSTRUCTION AND RELATED CODES</b>	<b>3 Hrs.</b>
	PREREQUISITE: FSC 103.			PREREQUISITE: None.	
	This course is a continuation of the study of hazardous materials and application to specialized hazardous materials response teams. Emphasis is placed on specialized skills and equipment required to mitigate a hazardous materials incident.			This course includes a thorough examination of national, state, and local laws and ordinances which regulate and/or influence the field of fire prevention.	
<b>FSC 105</b>	<b>CHEMISTRY FOR THE FIRE SERVICE</b>	<b>3 Hrs.</b>	<b>FSC 220</b>	<b>FIRE EXTINGUISHMENT AGENTS</b>	<b>3 Hrs.</b>
	PREREQUISITE: None.			PREREQUISITE: None.	
	This is a survey of general chemistry as applied to the fire service. Emphasis is on fundamental facts, principles, theories, and applications.			This is a study of water supplies and services, principles of hydraulic calculations and tests, fire extinguishing chemicals, and the selection and use of extinguishing agents.	
<b>FSC 111</b>	<b>FIRE HYDRAULICS</b>	<b>3 Hrs.</b>	<b>FSC 230</b>	<b>THE ISO (AIA) STANDARDS</b>	<b>3 Hrs.</b>
	PREREQUISITE: None.			PREREQUISITE: None.	
	This course is a review of basic mathematics, hydraulic laws and formulae as applied to the fire service, water supply problems, and underwriters' requirement for pumps.			This course is a study of insurance theory and practice, the economics of the ISO grading system, and a city's fire defense and insurance rates. Included is a detailed analysis of a city's water supply, fire department, fire alarm, fire prevention, and other grading methods of fire defense.	
<b>FSC 120</b>	<b>FIRE HAZARDS</b>	<b>3 Hrs.</b>	<b>FSC 235</b>	<b>BREATHING APPARATUS SPECIALIST COURSE</b>	<b>3 Hrs.</b>
	PREREQUISITE: None.			PREREQUISITE: None.	
	The course includes the characteristics and behavior of fire; fire-hazard properties of solid, liquid, and gas materials; and the storage and handling of these materials.			This is an in-depth survey of respiratory hazards, search and rescue techniques, emergency procedures and routine care, and inspection procedures as related to the fire service. Extreme emphasis is placed upon understanding and handling personal and equipment limitations.	
<b>FSC 130</b>	<b>INTRODUCTION TO FIRE SUPPRESSION</b>	<b>3 Hrs.</b>	<b>FSC 240</b>	<b>FIRE CAUSE DETERMINATION</b>	<b>3 Hrs.</b>
	PREREQUISITE: None.			PREREQUISITE: None.	
	This course is a study of fire suppression, organization, fire suppression equipment, characteristics and behavior of fire, and fire hazard properties of ordinary materials.			This course covers the burning characteristics of combustibles, interpretation of clues, burn patterns leading to points of origin, identification of incendiary indications, sources of ignition an ignited materials, and preservation of fire scene evidence.	
<b>FSC 200</b>	<b>FIRE COMBAT TACTICS AND STRATEGY</b>	<b>3 Hrs.</b>	<b>FSC 241</b>	<b>ARSON INVESTIGATION</b>	<b>3 Hrs.</b>
	PREREQUISITE: None.			PREREQUISITE: None.	
	This course is a review of fire chemistry, equipment and manpower, basic fire fighting tactics and strategy, methods of attack, and pre-planning fire problems			This is an introduction to arson and incendiarism, arson laws, methods of determining fire causes, evidence, interviewing and detaining witnesses, procedures in handling juveniles, and court procedures.	

- FSC 250 FIRE PREVENTION INSPECTION** 3 Hrs.  
PREREQUISITE: None.  
This is a study of the organization and function of the fire prevention team. Course content includes inspections, survey and mapping procedures, recognition of fire hazards, and public relations as affected by fire prevention.
- FSC 260 SPECIAL SERVICE HAZARDS** 3 Hrs.  
PREREQUISITE: None.  
This is a study of electrical transmissions and related equipment appliances, radiation hazards, flammable metals, and riots, disaster and civil defense organizations, and hazard plans.
- FSC 270 FIRE PROTECTION SYSTEMS** 3 Hrs.  
PREREQUISITE: None.  
This is a study of portable fire extinguishing equipment, sprinkler systems, protection systems for special hazards, and fire alarms and detection systems.
- FSC 280 FIRE APPARATUS AND EQUIPMENT** 3 Hrs.  
PREREQUISITE: None.  
This is a study of driving laws, techniques, construction and operation of pumping engines, ladder trucks, aerial platforms, specialized equipment and apparatus maintenance.
- FSC 285 INDUSTRIAL FIRE PROTECTION** 3 Hrs.  
PREREQUISITE: None.  
This is an introduction to fire protection in industrial plants, which includes the study of practices and procedures involved in establishing and managing an in-plant fire protection plan.
- FSC 292 ELEMENTS OF SUPERVISION/FIRE SERVICE SUPERVISION** 3 Hrs.  
PREREQUISITE: None.  
This course covers the responsibility of supervisors, organization, human relations, grievance training, rating, promotion, quality-quantity control and management-employee relations.
- FSC 293 FIRE SERVICE ADMINISTRATION** 3 Hrs.  
PREREQUISITE: None.  
This is a study of the principles, practices and objectives of fire administration, of fire defenses and insurance rates, of personnel management, and of records, reports, and evaluation.
- FSC 294 FIRE DEPARTMENT MANAGEMENT** 3 Hrs.  
PREREQUISITE: None.  
This is an introduction to planning, budgeting organization, staffing, evaluation, and public relations of fire departments.
- FSC 297 SELECTED TOPICS IN FIRE SERVICE OPERATIONS** 1-3 Hrs.  
PREREQUISITE: None.  
This course provides directed reading and discussion of selected topics related to fire service operations. The course may be repeated for credit.
- FSC 299 LEGAL ASPECTS OF THE FIRE SERVICE** 3 Hrs.  
PREREQUISITE: None.  
This is an introduction to the overall legal duties, responsibilities and limitations placed upon the fire service professional. It includes the study and practical application of civil and criminal procedures based upon current state and federal codes.

## FRENCH (FRN)

- FRN 101 INTRODUCTORY FRENCH I** 4 Hrs.  
PREREQUISITE: None.  
This course provides an introduction to French. Topics include the development of basic communica-

tion skills and the acquisition of basic knowledge of the cultures of French-speaking areas.

- FRN 102 INTRODUCTORY FRENCH II** 4 Hrs.  
PREREQUISITE: FRN 101.

This continuation course includes the development of basic communication skills and the acquisition of basic knowledge of the cultures of French-speaking areas.

## GEOGRAPHY (GEO)

- GEO 100 WORLD REGIONAL GEOGRAPHY** 3 Hrs.  
PREREQUISITE: ENG 093 or equivalent placement in ENG 101

This course surveys various countries and major regions of the world with respect to location and landscape, world importance, political status, population, type of economy, and its external and internal organization problems and potentials.

- GEO 200 GEOGRAPHY OF NORTH AMERICA** 3 Hrs.  
PREREQUISITE: GEO 100.

This course is a survey of the geography of the United States and Canada with special emphasis on land usage, mineral resources, industrial development, and social and economic adaptation of man and the natural environment.

## GEOLOGY (GLY)

- GLY 101 INTRODUCTION TO GEOLOGY I** 4 Hrs.  
PREREQUISITE: None.

Introduction to Geology I is the first in a two part sequence dealing with the structure of the earth including materials, internal and external processes, deformation, energy, and plate tectonics. Laboratory is required.

- GLY 102 INTRODUCTION TO GEOLOGY II** 4 Hrs.  
PREREQUISITE: GLY 101 and/or None.

Introduction to Geology II is the second in a two part sequence dealing with a historical perspective of the earth. Topics include items such as geologic time, earth's origin, evolution of continents and ocean basins, minerals, energy resources, planetary geology, and mountain building. Laboratory is required.

## HEALTH EDUCATION (HED)

- HED 199 ECOLOGICAL APPROACH TO HEALTH AND FITNESS** 3 Hrs.  
PREREQUISITE: None.

This course examines a myriad of factors influencing health and fitness behavior. Intrapersonal, interpersonal, institutional, community, and public policy factors are examined.

- HED 221 PERSONAL HEALTH** 3 Hrs.  
PREREQUISITE: None.

This course introduces principles and practices of personal and family health; it includes human reproduction, growth and development, psychological dimensions of health, human sexuality, nutrition and fitness, aging, death and dying.

- HED 231 FIRST AID** 3 Hrs.  
PREREQUISITE: None.

This course provides instruction to the immediate, temporary care which should be given to the victims of accidents and sudden illness. It also includes standard and advanced requirements of the American Red Cross, and/or the American Heart Association. CPR training is also included.

**HED 277 CPR RECERTIFICATION 1 Hr.**  
**PREREQUISITE:** Prior certification in CPR.  
 In this course, instruction and review of up-dated information concerning cardio-pulmonary resuscitation (CPR) is presented. The student must satisfactorily execute skills needed to meet requirements for recertification in Basic Cardiac Life Support (BCLS) as required by the American Heart Association.

**HED 299 SPECIAL TOPICS: STRESS MANAGEMENT 2 Hrs.**  
**PREREQUISITE:** None  
 This course will permit the student to focus on, examine, and address current specific issues and topics in the general area of health and disease. Stress management techniques will be described and evaluated and the relationship between stress and disease will be discussed.

## HEALTH INFORMATION TECHNOLOGIES (HIT)

**HIT 230 MEDICAL CODING SYSTEMS I 3 Hrs.**  
**PREREQUISITE:** BIO 120 and BIO 150.  
 This course is intended to develop an understanding of coding and classification systems in order to assign valid diagnostic and procedure codes. Instruction includes description of classification and nomenclature systems; coding diagnoses and procedures; sequencing codes; analyzing actual medical records to identify data elements to be coded; and validating coded clinical information. Student competency includes demonstration of coding principles, and applications (manual and/or computer assisted).

**HIT 232 MEDICAL CODING SYSTEMS II 3 Hrs.**  
**PREREQUISITE:** HIT 230.  
 This course is a continuation of Medical Coding Systems I which is intended to develop an understanding of coding and classification systems in order to assign valid diagnostic and procedure codes. Instruction includes coding diagnoses and procedures; sequencing codes; analyzing actual medical records to identify data elements to be coded; validating coded clinical information, DRG assignment and case mix/severity of illness data. Student competency includes demonstration of coding principles and applications (manual and/or computer assisted).

**HIT 260 PROFESSIONAL PRACTICE EXPERIENCE 3 Hrs.**  
**PREREQUISITE:** HIT 232.  
 This course allows the student to correlate the experience of previous courses with on-site and on-campus laboratory learning experience. Emphasis is placed on application of all previous course work and orientation to all aspects of practice in a health information management department of a health care facility. Student competency is demonstrated by application of skills covered in theory and laboratory classes.

## HEAVY EQUIPMENT OPERATOR (HEO)

**HEO 111 INTRODUCTION TO HEAVY EQUIPMENT 6 Hrs.**  
**PREREQUISITE:** None.  
 This course presents the fundamentals of heavy equipment operation. Topics include personal, fire, and shop safety; identification, use and maintenance of tools, and an introduction to the major pieces of equipment. Upon completion, the student will understand safety procedures and the functions of major pieces of heavy equipment.

**HEO 114 BULLDOZER OPERATION 6 Hrs.**  
**PREREQUISITE:** None.  
 This course covers safety, principles of operation and maintenance of bulldozers. Topics include operator maintenance, servicing, and operation in both actual and simulated conditions. Upon completion, the student will have gained skills necessary to operate bulldozers.

**HEO 115 MOTOR GRADER OPERATOR 6 Hrs.**  
**PREREQUISITE:** None.  
 This course covers safety, principles of operation and maintenance of motor graders. Topics include operator maintenance, servicing, and operation in both actual and simulated conditions. Upon completion, the student will have gained skills necessary to operate motor graders.

**HEO 116 EXCAVATOR AND BACKHOE OPERATION 6 Hrs.**  
**PREREQUISITE:** None.  
 This course covers safety, principles of operation and maintenance of excavators and backhoes. Topics include operator maintenance, servicing, and operation in both actual and simulated conditions. Upon completion, the student will have gained skills needed to operate excavators and backhoes.

**HEO 117 HEAVY EQUIPMENT TRANSPORTATION 3 Hrs.**  
**PREREQUISITE:** None.  
 This course introduces students to the principles of leading and transporting heavy equipment. Topics include loading and unloading techniques, tie-down and weight distribution, and safety precautions for over-the road hauling. Students develop skills needed in the loading and transporting heavy equipment.

**HEO 181/182 SPECIAL TOPICS IN HEAVY EQUIPMENT OPERATION 1-3 Hrs.**  
**PREREQUISITE:** None  
 These courses provide specialized instruction in various areas related to the heavy equipment operator industry. Emphasis is placed on meeting student's needs.

## HISTORY (HIS)

**HIS 101 WESTERN CIVILIZATION I 3 Hrs.**  
**PREREQUISITE:** ENG 093 or equivalent placement in ENG 101.

This course is a survey of social, intellectual, economic, and political developments, which have molded the modern western world. This course covers the ancient and medieval periods and concludes in the era of the Renaissance and Reformation.

**HIS 102 WESTERN CIVILIZATION II 3 Hrs.**  
**PREREQUISITE:** ENG 093 or equivalent placement in ENG 101

This course is a continuation of HIS 101; it surveys development of the modern western world from the era of the Renaissance and Reformation to the present.

**HIS 201 UNITED STATES HISTORY I 3 Hrs.**  
**PREREQUISITE:** ENG 093 or equivalent placement in ENG 101

This course surveys United States history during colonial, Revolutionary, early national and antebellum periods. It concludes with the Civil War and Reconstruction.

**HIS 202 UNITED STATES HISTORY II 3 Hrs.**  
**PREREQUISITE:** ENG 093 or equivalent placement in ENG 101

This course is a continuation of HIS 201; it surveys United States history from the Reconstruction era to the present.

**HIS 256 AFRICAN-AMERICAN HISTORY 3 Hrs.**  
**PREREQUISITE:** ENG 093 or equivalent placement in ENG 101  
 This course focuses on the experience of African-American people in the western hemisphere, particularly the United States. It surveys the period from the African origins of the slave trade during the period of exploration and colonization to the present. The course presents a comparison between the African experience in the United States and in Mexico and South America.

**HIS 299 DIRECTED STUDIES IN HISTORY 1-3 Hrs.**  
**PREREQUISITE:** ENG 093 or equivalent placement in ENG 101  
 This course affords the student the opportunity to study selected topics of a historical nature under the direction of an instructor either as part of class or on an individual basis. Internships with historical and preservation organizations, thesis development, and the analysis of secondary monographs are examples of activities for this course. HIS 299 may be repeated for credit.

### HOME ECONOMICS (HEC)

**HEC 140 PRINCIPLES OF NUTRITION 3 Hrs.**  
**PREREQUISITE:** None.  
 This course introduces students to the principles of nutrition and the role and functions of nutrients in man's food. Basic information concerning food selection and nutrition as a factor in health, ecology, and economy is included. Implications of nutrition for children may be stressed.

### HUMANITIES (HUM)

**HUM 298 DIRECTED STUDIES IN HUMANITIES 3 Hrs.**  
**PREREQUISITE:** ENG 093 or equivalent placement in ENG 101  
 This course provides an opportunity for the student to study selected topics in the area of the humanities under the supervision of a qualified instructor. The specific topics will be determined by the interests of the students and faculty and the course may be repeated for credit. This course is open to all students.

**HUM 299-01 PTK HONORS COURSE I 1 Hrs.**  
**PREREQUISITE:** None  
 This course provides an opportunity for the student to study selected topics in the area of the humanities under the supervision of a qualified instructor. The specific topics will be determined by the interests of the students and faculty and the course may be repeated for credit.

**HUM 299-02 PTK HONORS COURSE II 1 Hrs.**  
**PREREQUISITE:** None  
 This course provides an opportunity for the student to study selected topics in the area of the humanities under the supervision of a qualified instructor. The specific topics will be determined by the interests of the students and faculty and the course may be repeated for credit..

**HUM 298-03 PTK HONORS COURSE III 1 Hrs.**  
**PREREQUISITE:** None  
 This course provides an opportunity for the student to study selected topics in the area of the humanities under the supervision of a qualified instructor. The specific topics will be determined by the interests of the students and faculty and the course may be repeated for credit..

### INDUSTRIAL ELECTRONICS (ILT)

**ILT 100 APPLIED ELECTRONIC COMPUTATIONS 3 Hrs.**  
**PREREQUISITE:** None.  
 This course is an applied mathematics and algebra course for students in electronics or similar programs. Topics include decimals, fractions, negative numbers, powers and roots, the metric systems, logarithms, applied trigonometry, and algebra. Upon completion, the student will be able to perform applied mathematics calculations needed in electronics.

**ILT 106 CONCEPTS OF DIRECT CURRENT 5 Hrs.**  
**PREREQUISITE:** None  
 This course provides a study of basic concepts and application of direct current (DC). Specific topics include but are not limited to: an introduction to electrical theory, units and electrical measurement, DC electrical components, and constructing various types of DC circuits. Students gain hands-on experience through various laboratory problems. Emphasis is placed on the use of scientific calculators and the operation of common test equipment used to analyze and troubleshoot DC circuits and to prove the theories taught during classroom instruction.

**ILT 107 CONCEPTS OF ALTERNATING CURRENT 5 Hrs.**  
**PREREQUISITE:** None  
 This course provides a study of basic concepts and application of alternating current (AC). Specific topics include but are not limited to: an introduction to AC electrical theory, AC electrical measurements, and constructing and measuring various types of AC circuits. Students gain hands-on experience through various laboratory problems. Emphasis is placed on the use of scientific calculators and the operation of various test equipment used to analyze and troubleshoot AC circuits.

**ILT 111 CONCEPTS OF SOLID STATE ELECTRONICS 5 Hrs.**  
**PREREQUISITE:** ILT 107  
 This course is an introduction to semiconductor fundamentals and applications to the electronic devices. Course covers the basic operations and applications to include rectifier circuits, transistors, and thyristors. Coverage is given to safety, use, and care with hazardous materials and personal as well as material and environmental considerations. Upon completion, students will be able to construct and test for proper operation of various types of solid state devices.

**ILT 112 CONCEPTS OF DIGITAL ELECTRONICS 5 Hrs.**  
**PREREQUISITE:** ILT 113  
 This course provides instruction in digital electronics. Topics include: number systems and codes, a review of Boolean algebra, logic elements, digital circuits, programmable logic circuits, and memory and computing circuits. This course provides laboratory exercises to analyze, construct, test and troubleshoot digital circuits.

**ILT 113 CONCEPTS OF ELECTRONIC CIRCUITS 3 Hrs.**  
**PREREQUISITE:** ILT 107  
 This course covers the commonly utilized circuits found in all areas of electronics. These include various rectifiers, filters, voltage regulating circuits, operational amplifier circuits, ICs, and oscillator circuits. Upon completion, students will be able to construct and test various types of electronic circuits.

**ILT 115 ADVANCED INDUSTRIAL CONTROLS 3 Hrs.**  
**PREREQUISITE:** ILT 107  
**COREQUISITE:** ILT 116  
 This course emphasizes the fundamentals and applications of solid state motor starters. Topics include

- DC drives, AC variable frequency drives, thyristers, sequences circuits and closed loop control including PED process control. Upon completion, students should be able to apply principles of solid state motor starters.
- ILT 116 ADVANCED INDUSTRIAL CONTROLS LAB 2 Hrs.**  
 PREREQUISITE: ILT 107  
 COREQUISITE: ILT 115  
 This lab emphasis DC drives, AC variable frequency drives, thyristers, sequences circuits and closed loop control including PID process control. Upon completion, students should be able to apply principles of solid state motor starters.
- ILT 125 DIGITAL COMMUNICATIONS 3 Hrs.**  
 PREREQUISITE: None.  
 This course provides the electronics technician with sufficient background in data and digital communications to enter this rapidly expanding field. It includes telephone systems, error detection and correction, data link protocols, modems, multiple-channel systems, network architecture, fiber-optic communications, and data communications applications. Upon completion, the student should be able to describe the operation of various digital communications circuits and calculate all parameters.
- ILT 126 DIGITAL COMMUNICATIONS LAB 2 Hrs.**  
 PREREQUISITE: None.  
 This course provides experimentation to verify theories of digital communication. Upon completion of this course and Digital Communications, the student should be able to construct various digital communications circuits and make necessary measurements and adjustments.
- ILT 148 AUTOMATIC CONTROLS SYSTEMS 3 Hrs.**  
 PREREQUISITE: ILT 107  
 COREQUISITE: ILT 149  
 This course emphasizes automated control systems and sub-systems. Topics include robotics, programmable hydraulics, pneumatic, microprocessor, variable-speed drives, transducers, and related control circuitry with emphasis on troubleshooting the total system. Upon completion, the student should be able to apply principles of automated control systems.
- ILT 149 AUTOMATIC CONTROLS SYSTEMS LAB 2 Hrs.**  
 PREREQUISITE: ILT 107  
 COREQUISITE: ILT 148  
 This lab emphasizes robotics, programmable hydraulics/pneumatic, microprocessors, variable-speed drives, transducers, and related control circuitry with emphasis on troubleshooting the total system. Upon completion, the student should be able to apply principles of automated control systems.
- ILT 160 DC FUNDAMENTALS 3 Hrs.**  
 PREREQUISITE: As required by program  
 This course provides a study of atomic theory, direct current (DC), properties of conductors and insulators, direct current characteristics of series, parallel, and series parallel circuits. Inductors and capacitors are introduced and their effects on DC circuits are examined. Students are prepared to analyze complex DC circuits, solve for unknown circuits variables and to use basic electronic test equipment. This course also provides hands on laboratory exercises to analyze, construct, test, and troubleshoot direct current circuits. Emphasis is placed on the use of scientific calculator and the operation of common test equipment used to analyze and troubleshoot DC and to prove the theories taught during classroom instruction. This is a CORE course.
- ILT 161 AC FUNDAMENTALS 3 Hrs.**  
 PREREQUISITE: As determined by college  
 This course provides a study of theory of alternating current (AC). Students are prepared to analyze complex AC circuit configurations with resistor, capacitors, and inductors in series and parallel combinations. Upon completion, students should be able to describe AC circuits and explain the function of AC such as RLC, impedance, phase relationships, and power factor. This course also provides hands on laboratory exercises to analyze alternating current using a variety of circuit configurations with resistors, capacitors, and inductors in series and parallel combinations. Emphasis is placed on the operation of common test equipment used to analyze and troubleshoot AC circuits to prove the theories taught. This is a CORE course.
- ILT 164 CIRCUIT FABRICATION I 1**  
 PREREQUISITE: None  
 This course provides instruction in fabrication of functional circuits and is an introduction to device construction and fabrication. Utilizing discrete components, students will fabricate functional circuits. Topics include soldering, cable construction, coaxial cable connection and termination, component mounting cases, and chassis, printed circuit board design, layout, fabrication, and repair, as well as soldering techniques, care of tools, wire splicing, wire wrapping, connector maintenance, and related shop safety. Upon completion of this course, students should be able to perform basic circuit and project construction.
- ILT 166 MOTORS AND TRANSFORMERS I 3 Hrs.**  
 PREREQUISITE: ILT 107  
 This course covers motor operation, motor types, motor components, motor feeder and branch circuits. Topics include motor protection and motor control circuits. The lab enables to test motors, transformer types, and testing for input and output voltage. Upon completion, students should be able to test motors, transformer types, and testing for input and output voltage.
- ILT 167 AC/DC MACHINERY AND CONTROLS I 3 Hrs.**  
 PREREQUISITE: ILT 107  
 This course provides the student with knowledge in AC/DC machinery and controls. Topics include the characteristics and operating principles of the different types of AC/DC generators and motors, manual and automatic starters and controllers. The lab enables students to test, troubleshoot and repair AC/DC Machinery and controls. Upon completion, the student will be able to apply practical skills in AC/DC machinery.
- ILT 169 HYDRAULICS/PNEUMATICS 3 Hrs.**  
 PREREQUISITE: None  
 This course provides an introduction to hydraulics/pneumatics. Topics include hydraulic pumps, pneumatic compressors work and system components such as valves, filters, regulators, actuators, accumulators, and lubricators. The lab enables students to test, troubleshoot and repair hydraulic pumps, pneumatic compressors work and system components such as valves, filters, regulators, actuators, accumulators, and lubricators. Upon completion, students will be able to apply principles of hydraulic/pneumatics.
- ILT 180 SPECIAL TOPICS 3 Hrs.**  
 PREREQUISITE: None.  
 This course is designed to allow students an opportunity to study directly-related topics of particular interest which require the application of technical

- knowledge and technical skills. Emphasis is placed on the application of skills and knowledge with practical experiences. Upon completion, the student should be able to solve job related problems using technical skills and knowledge.
- ILT 194 PROGRAMMABLE LOGIC CONTROLLERS I 3 Hrs.**  
PREREQUISITE: ILT 107  
This course focuses on the use of PLCs. Topics include operation, programming procedures, fault isolation procedures, and methods of entering, executing, debugging, and changing programs. This lab enables students to practice operations, programming procedures, fault isolation procedures, and methods of entering, executing, debugging, and changing programs. Upon completion, students should be able to apply principles of operations and programming of programmable logic controllers.
- ILT 195 TROUBLESHOOTING TECHNIQUES I 3 Hrs.**  
PREREQUISITE: ILT 107  
This course focuses on the systematic approach to solving problems. Emphasis is placed on the instrument failures and their interaction with process downtime. Upon completion, students will be able to solve problems on a process simulator or in an actual setting.
- ILT 197 MOTOR CONTROLS I 3 Hrs.**  
PREREQUISITE: ILT 107  
This course covers the use of motor control symbols, magnetic motor starters, running overload protection, push-button stations, sizing of magnetic motor starters and overload protection, and complex ladder diagrams of motor control circuits. Topics include sizing magnetic starters and overload protection, the use of push-button stations, ladder diagrams, and magnetic motor starters in control of electric motors, wye-delta starting, part start winding, and resistor starting and electric starting devices. Upon overload protection, interpret ladder diagrams using push-button stations and understand complex motor control diagrams.
- ILT 201 INDUSTRIAL ELECTRONICS 3 Hrs.**  
PREREQUISITE: None.  
This course covers applications of electronics in the industry with a major emphasis on microprocessors as applied to data acquisition and machine control. Topics include A/D and D/A conversion, signal conditioning, sensors and transducers, control devices, stepper motors, and microprocessor interfacing. Upon completion, the student should be able to describe the operation of various sensors, signal conditioning, A/D and D/A conversion, and control devices, as well as, perform necessary calculations.
- ILT 202 INDUSTRIAL ELECTRONICS LAB 2 Hrs.**  
PREREQUISITE: None.  
This course demonstrates the concepts, devices, and applications of electronics in industrial processes. Upon completion, the student should be able to construct, evaluate, and calibrate basic industrial sensing, and control circuits.
- ILT 205 MICROPROCESSORS 3 Hrs.**  
PREREQUISITE: None.  
This course introduces microprocessors and explores their applications. The course emphasizes programming and interfacing the microprocessor chip. Upon completion, the student should be able to perform binary arithmetic, perform computer arithmetic, describe the basic operation procedures for a microprocessor system, and write programs for a basic microprocessor.
- ILT 206 MICROPROCESSORS LAB 2 Hrs.**  
PREREQUISITE: None.  
This course provides familiarization of microprocessor instruction sets. Experiments in programming and interfacing provide an understanding of microprocessor theory. Upon completion, the student should be able to program and interface a basic microprocessor system.
- ILT 207 MICROCONTROLLER FUNDAMENTALS 3 Hrs.**  
PREREQUISITE: None.  
Microcontroller fundamentals focuses on microcontrollers embedded systems typically used in industrial process and control environments. A survey of industrial microcontrollers from small scale to large scale integration solutions and their programming methods as it relates to motor controllers, HVAC control systems, automotive and avionic control systems, robotic interfacing, and data acquisition and communications systems will be conducted. Students completing this course will be able to identify key components of a microcontroller embedded system and create specific programming requirements using the native programming language of the microcontroller.
- ILT 211 TROUBLESHOOTING TECHNIQUES 3 Hrs.**  
PREREQUISITE: None.  
This course focuses on the systematic approach to solving problems. Emphasis is placed on instrument failures and their interaction with process down-time. Upon completion, the student should be able to solve problems on a process simulator or in an actual setting.
- ILT 216 INDUSTRIAL ROBOTICS 3 Hrs.**  
PREREQUISITE: ILT 107  
COREQUISITE: ILT 217  
This course covers principles of electro-mechanical devices. Topics include the principles, concepts, and techniques involved in interfacing microcomputers to various electro-mechanical devices to produce geographical movement. Upon completion, the student should be able to apply the principles of electro-mechanical devices.
- ILT 217 INDUSTRIAL ROBOTICS LAB 2 Hrs.**  
PREREQUISITE: ILT 107  
COREQUISITE: ILT 216  
This lab covers the principles, concepts, and techniques involved in interfacing microcomputers to various electro-mechanical devices to produce geographical movement. Upon completion, the student should be able to apply the principles of electro-mechanical devices.
- ILT 220 ELECTRO-OPTICS 3 Hrs.**  
PREREQUISITE: None.  
This course provides a study of fiber optics principles. Topics include optical components, the physics of light, radiation measurements, fiber optic applications, light sources, optic receivers, transmitters and sensors, fiber optic systems, data transfer systems concepts, and systems troubleshooting. Upon completion, the student should be able to apply principles of fiber optics.
- ILT 221 ELECTRO-OPTICS LAB 2 Hrs.**  
PREREQUISITE: None.  
This lab enables students to apply principles of fiber optics.
- ILT 222 ADVANCED PROGRAMMABLE LOGIC CONTROLLERS 3 Hrs.**  
PREREQUISITE: ILT 194  
COREQUISITE: ILT 223  
This course focuses on advanced PLCs. Topics include operations, programming procedures, fault isolation

procedures, and methods of entering, executing, debugging, and changing programs. Upon completion, the student should be able to apply principles of operations and programming of advanced PLCs.

- ILT 223 ADVANCED PROGRAMMABLE LOGIC CONTROLLERS LAB** 2 Hrs.  
 PREREQUISITE: ILT 194  
 COREQUISITE: ILT 222  
 This lab emphasizes advanced PLCs. Topics include operations, programming procedures, fault isolation procedures, and methods of entering, executing, debugging, and changing programs. Upon completion, the student should be able to apply principles of operations and programming of advanced PLCs.
- ILT 224 ELECTRONIC COMMUNICATIONS** 3 Hrs.  
 PREREQUISITE: None.  
 This course provides the student with knowledge in electronic circuits used in amplitude, frequency, and phase modulation communication systems. Topics include modulation and detection techniques, antennas and transmission lines. Upon completion, the student should be able to apply principles of filters, oscillators, classes of amplifiers, and resonance.
- ILT 225 ELECTRONIC COMMUNICATIONS LAB** 2 Hrs.  
 PREREQUISITE: None.  
 This lab focuses on electronic circuits used in amplitude, frequency, and phase modulation communication systems. Topics include modulation and detection techniques, antennas and transmission lines. Upon completion, the student should be able to apply principles of filters, oscillators, classes of amplifiers, and resonance.
- ILT 228 FCC GENERAL RADIOTELEPHONE LICENSE PREP** 3 Hrs.  
 PREREQUISITE: ILT 113  
 This course includes the information necessary for the successful completion of the Federal Communication Commission's General Radiotelephone License Examination. A comprehensive coverage of rules, regulations, and electronic theory is accomplished. Upon completion, the student should understand the preparation necessary to successfully complete the exam process.
- ILT 239 CERTIFICATION PREPARATION** 3 Hrs.  
 PREREQUISITE: ILT 112  
 This course includes the review necessary before attempting technician certification examinations given by various non-government certifying organizations and pre-employment tests given by employers. Upon completion of this course students should understand the preparations necessary to successfully complete the exam process.
- ILT 251 RF COMMUNICATIONS** 3 Hrs.  
 PREREQUISITE: None  
 This course provides a study of the transmission and receiving of analog communication signals that are used in radio, television, and radio frequency (F.F.) communication applications. Emphasis is placed on circuits that produce, transmit, and receive RF signals used in radio, television, and RF communication. Upon completion, students will be able to apply RF communication principles in the transmission and receiving of radio, television, and RF communication signals.
- ILT 252 DIGITAL COMMUNICATIONS** 3 Hrs.  
 PREREQUISITE: None  
 This course provides a study of the transmission and receiving digital communication signals that are used in radio, television, and digital communication applications. Emphasis is placed on circuits that produce, transmit, and receive digital signals used in radio, television, and digital communication. Upon completion, students will be able to apply digital communication principles in the transmission and receiving of radio, television, and digital communication signals.
- ILT 262 CERTIFICATION PREPARATION** 3 Hrs.  
 PREREQUISITE: ILT 112  
 This course provides an overview of electrical/electronics principles to prepare the student for the CET exam. Upon completion, students should be able to pass the CET exam and be classified as a national certified electronic technician.
- ILT 271 INDEPENDENT STUDY** 2 Hrs.  
 PREREQUISITE: None.  
 This course is designed to allow the student to independently study various topics related to instrumentation technology. Emphasis is placed on the refinement or advancement of a particular skill or skills. Upon completion, the student should be able to perform specific job related functions according to standard operating procedures.
- ILT 280 SPECIAL TOPICS** 3 Hrs.  
 PREREQUISITE: None.  
 This course is designed to allow students an opportunity to study directly-related topics of particular interest which require the application of technical knowledge and technical skills. Emphasis is placed on the application of skills and knowledge with practical experiences. Upon completion, the student should be able to solve job related problems using technical skills and knowledge.
- ILT 291 COOPERATIVE EDUCATION** 3 Hrs.  
 PREREQUISITE: None.  
 This course provides students work experience with a college-approved employer in an area directly related to the student's program of study. Emphasis is placed on integrating classroom experiences with work experience. Upon completion, the student should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.
- ILT 292 COOPERATIVE EDUCATION** 3 Hrs.  
 PREREQUISITE: None  
 This course provides students work experience with a college-approved employer in an area directly related to the student's program of study. Emphasis is placed on integrating classroom experiences with work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.
- ILT 293 COOPERATIVE EDUCATION** 3 Hrs.  
 PREREQUISITE: None  
 This course provides students work experience with a college-approved employer in an area directly related to the student's program of study. Emphasis is placed on integrating classroom experiences with work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.
- INDUSTRIAL MAINTENANCE TECHNOLOGY (INT)**
- INT 117 PRINCIPLES OF INDUSTRIAL MECHANICS** 3 Hrs.  
 PREREQUISITE: None  
 This course provides instruction in basic physics concepts applicable to mechanics of industrial production

equipment. Topics include the basic application of mechanical principles with emphasis on power transmission, specific mechanical components, alignment, and tension. Upon completion, students will be able to perform basic troubleshooting, repair and maintenance functions on industrial production equipment.

**INT 118 FUNDAMENTALS OF INDUSTRIAL HYDRAULICS AND PNEUMATICS 3 Hrs.**  
PREREQUISITE: None

This course includes the fundamental concepts and theories for the safe operation of hydraulic and pneumatic systems used with industrial production equipment. Topics include the physical concepts, theories, laws, air flow characteristics, actuators, valves, accumulators, symbols, circuitry, filters, servicing safety, and preventive maintenance and the application of these concepts to perform work. Upon completion, students should be able to service and perform preventive maintenance functions on hydraulic and pneumatic systems.

**INT 123 CONCEPTS OF SOLID STATE ELECTRONICS 5 Hrs.**  
PREREQUISITE: None.

This course is an introduction to semiconductor fundamentals and applications to the electronic devices. Course covers the basic operations and applications to include rectifier circuits, transistors, and thyristors. Coverage is given to safety, use, and care with hazardous materials and personal as well as material and environmental considerations. Upon completion students will be able to construct and test for proper operation of various types of solid state devices.

**INT 126 PREVENTIVE MAINTENANCE 3 Hrs.**  
PREREQUISITE: None

This course focuses on the concepts and applications of preventive maintenance. Topics include the introduction of alignment equipment, job safety, tool safety, preventive maintenance concepts, procedures, tasks, and predictive maintenance concepts. Upon course completion, students will demonstrate the ability to apply proper preventive maintenance and explain predictive maintenance concepts.

**INT 127 PRINCIPLES OF INDUSTRIAL PUMPS AND PIPING SYSTEMS 3 Hrs.**  
PREREQUISITE: None

This course provides instruction in the fundamental concepts of industrial pumps and piping systems. Topics include pump identification, operation, and installation, maintenance and troubleshooting, and piping systems, and their installation. Upon course completion, students will be able to install, maintain, and troubleshoot industrial pumps and piping systems.

**INT 151 MACHINE SHOP FUNDAMENTALS 3 Hrs.**  
PREREQUISITE: None.

This course focuses on metal cutting machines used to make parts and tools. Topics include lathes, mills, drills, and presses. Upon completion, the student will have the ability to use precision measurement instruments and to read mechanical drawings.

**INT 207 INDUSTRIAL AUTOMATIC CONTROLS 3 Hrs.**  
PREREQUISITE: None.

This course focuses on the function of automatic controllers in different modes: on-off, proportional, reset, derivative, ratio, and cascade. Topics include operation of pneumatic, electronic, and computer process control equipment; service of basic process equipment and instrumentation; correct operation and maintenance of valves and pumps; recognizing pat-

terns from data; developing and interpreting control charts; determining control limits; and performing root cause analysis. Upon completion, the student should be able to write start-up and shut-down procedures, operate, monitor, and control continuous and batch model plants.

**INT 221 DC FUNDAMENTALS 3 Hrs.**  
PREREQUISITE: None

This course provides a study of atomic theory, direct current (DC), properties of conductors and insulators, direct current characteristics of series, parallel, and series parallel circuits. Inductors and capacitors are introduced and their effects on DC circuits are examined. Students are prepared to analyze complex DC circuits, solve for unknown circuit variables and to use basic electronic test equipment.

**INT 223 AC FUNDAMENTALS 3 Hrs.**  
PREREQUISITE: None

This course provides a study of the theory of alternating current (AC). Students are prepared to analyze complex AC circuit configurations with resistor, capacitors, and inductors in series and parallel combinations. Upon completion, students should be able to design AC circuits and explain the function of alternating circuits such as RLC, impedance, phase relationships and power factor.

**INT 234 PRINCIPLES OF INDUSTRIAL MAINTENANCE WELDING AND METAL CUTTING TECHNIQUES 3 Hrs.**  
PREREQUISITE: None

This course provides instruction in the fundamentals of acetylene cutting and the basics of welding needed for the maintenance and repair of industrial production equipment. Topics include oxy-fuel safety, choice of cutting equipment, proper cutting angles, equipment setup, cutting plate and pipe, hand tools, types of metal welding machines, rod and welding joints, and common welding passes and beads. Upon course completion, students will demonstrate the ability to perform metal welding and cutting techniques necessary for repairing and maintaining industrial equipment.

**INT 260 MATHEMATICS FOR INDUSTRIAL TECHNICIANS 3 Hrs.**  
PREREQUISITE: None.

This course is designed to provide an understanding of basic mathematical concepts used in an industrial setting. Topics include the arithmetic of whole numbers, fractions, and decimals, basic ratio, proportion, and percent, and application problems in industrial maintenance.

**INT 261 BLUEPRINT READING FOR INDUSTRIAL TECHNICIANS 3 Hrs.**  
PREREQUISITE: None.

This course is designed to provide the student a comprehensive understanding of blueprint reading. Topics include identifying types of lines and symbols used in mechanical drawings; recognition and interpretation of various types of views, tolerance, and dimensions.

**INT 266 INDUSTRIAL MAINTENANCE CUTTING/WELDING 2 Hrs.**  
PREREQUISITE: None

This course provides instruction in the fundamentals of acetylene cutting and the basic SMAW (stick) welding. Topics covered are acetylene torch cutting equipment, safety and use; welding safety, welding hand tools, type of welding machines and welding rods, determining types of metal, welding passes, beads, and joints.

**INT 284 APPLIED PRINCIPLES OF PROGRAMMABLE CONTROLLERS** 2 Hrs.  
 PREREQUISITE: None  
 This course provides a comprehensive study in the theory and application of specific models of programmable logic controllers. Topics include hardware configuration, memory and addressing, detail function of software, instruction types, system troubleshooting, and simple programming techniques.

**INT 288 ADVANCED PRINCIPLES OF PROGRAMMABLE CONTROLLERS** 2 Hrs.  
 PREREQUISITE: None.  
 This course provides instruction in the advanced theory, application, and programming techniques of a specific programmable logic controller, including the hardware/software layout, addressing, communication, and machine interface. In addition, the course covers instruction in timing and memory considerations, and their effects on program and machine performance.

### INTERDISCIPLINARY STUDIES (IDS)

**IDS 100 CAREER PLANNING AND PERSONAL DEVELOPMENT** 3 Hrs.  
 PREREQUISITE: None.  
 This course is designed to provide an awareness of and preparation for the world of work. It provides direction in career planning by evaluating individual interest, values, skills, and personality needs to set career goals and establish strategies to achieve those goals.

**IDS 114 INTERDISCIPLINARY SEMINAR: CURRENT TOPICS IN HUMAN CONCERNS** 1-2 Hrs.  
 PREREQUISITE: None.  
 This course is a seminar/discussion course designed to provide an opportunity for the student to conduct an in-depth investigation of selected topics. The particular topic selected will include issues from two or more disciplines and is determined by faculty and student interest. Classroom experiences emphasize and help develop skills in organizing and presenting information as well as explaining and defending ideas and conclusions. An oral seminar presentation is required. IDS 114 may be repeated for credit.

**IDS 200 COLLEGE SCHOLARS BOWL WORKSHOP** 1 Hr.  
 PREREQUISITE: None.  
 This course offers the student preparation, practice, and participation in the College Scholars Bowl Program and competition. IDS 200 may be repeated for credit.

**IDS 299 DIRECTED STUDIES IN LEADERSHIP** 1-2 Hrs.  
 PREREQUISITE: None.  
 This course provides training and experience in leadership techniques and practice. The student is required to serve in leadership positions on campus or in the community. IDS 299 may be repeated for credit.

### LIBRARY SCIENCE (LBS)

**LBS 101 INTRODUCTION TO LIBRARY USE II** 1 Hr.  
 PREREQUISITE: None.  
 This course provides instruction in the use of the library. Emphasis is placed on basic library skills, including use of library catalogs, reference sources, current information sources, and indexes.

**LBS 102 INTRODUCTION TO LIBRARY USE III** 1 Hr.  
 PREREQUISITE: None.  
 This course builds on basic library skills offered in LBS 101, with particular emphasis on library resources involved in writing the research paper.

### MACHINE TOOL TECHNOLOGY (MTT)

**MTT 100 MACHINING TECHNOLOGY I** 6 Hrs.  
 PREREQUISITE: None  
 This course introduces machining operations as they relate to the metalworking industry. Topics include machine shop safety, measuring tools, lathes, drilling machines, saws, milling machines, bench grinders, and layout instruments. Upon completion, students will be able to perform the basic operation of measuring, layout, drilling, sawing, turning, and milling.

**MTT 103 MACHINING TECHNOLOGY II** 6 Hrs.  
 PREREQUISITE: None  
 This course provides additional instruction and practice in the use of measuring tools, lathes, milling machines, and grinders. Emphasis is placed on setup and operation of machine tools including the selection of work holding devices, speeds, feeds, cutting tools and coolants. Upon completion, students should be able to perform basic procedures of precision grinding and advanced operations of measuring, layout, drilling, sawing turning and milling.

**MTT 104 EDM AND METALLURGY** 3 Hrs.  
 PREREQUISITE: None  
 Students study the theory of operation and safety in operation of various EDM machines. Students learn metal characteristics, metal finishing and the heat treatment of metals.

**MTT 105 EDM AND METALLURGY LAB** 3 Hrs.  
 PREREQUISITE: None.  
 Students learn to set-up and safely operate an EDM machine. Students learn to identify safely heat treat different metals.

**MTT 107 MACHINING CALCULATIONS I** 3 Hrs.  
 PREREQUISITE: None  
 This course introduces basic calculations as they relate to machining occupations. Emphasis is placed on basic calculations and their applications in the machine shop. Upon completion, students should be able to perform basic shop calculations.

**MTT 108 MACHINE HANDBOOK FUNCTIONS I** 3 Hrs.  
 PREREQUISITE: None  
 This course covers the machinists' handbook. Emphasis is placed on formulas, tables, usage and related information. Upon completion, students should be able to use the handbook in the calculation and set up of machine tools.

**MTT 109 ORIENTATION TO COMPUTER ASSISTED MANUFACTURING** 3 Hrs.  
 PREREQUISITE: None.  
 This course is preparation for the more advanced CAM courses. Emphasis is placed on computer parts and accessories, DOS fundamentals, file management, graphics programming, and standard (CAM) machine codes. Upon completion, the student should be able to apply basic computer functions to machine tool projects.

**MTT 110 INTRODUCTION TO INJECTION MOLDING** 3 Hrs.  
 PREREQUISITE: None.  
 Students learn the fundamentals of injection molding operations, including molding terminology, machine part identification, operating safety, machine controls and machine startup and shutdown. Students are taught to identify common part defects such as short shots, flash, warp, surface defects, color changes and shrinkage. Students learn the properties of commonly used molding materials.

- MTT 126 BASIC BLUEPRINT READING FOR MACHINISTS** 3 Hrs.  
PREREQUISITE: None  
This course covers the basic principles of blueprint reading and sketching. Topics include multiview drawings; interpretation of conventional lines; and dimensions, notes, and thread notations. Upon completion, students should be able to interpret basic drawings, visualize parts, and make pictorial sketches.
- MTT 127 METROLOGY** 3 Hrs.  
PREREQUISITE: None  
This course introduces the use of precision measuring instruments. Emphasis is placed on the inspection of machine parts and use of a wide variety of measuring instruments. Upon completion students should be able to demonstrate correct use of measuring instruments.
- MTT 129 LATHE OPERATIONS** 6 Hrs.  
PREREQUISITE: None  
This course includes more advanced lathe practices such as taper turning, threading, boring, and set-up procedures. Emphasis is placed on safety procedures and the machinist responsibility in the set-up and operation of lathes. Upon completion, students should be able to apply lathe techniques to produce tool projects.
- MTT 131 INTERMEDIATE BLUEPRINT READING** 3 Hrs.  
PREREQUISITE: None.  
The purpose of this course is for students to further apply knowledge and skills with reading and interpreting blue prints for machining operations. Specific topics include: calculating missing dimensions from drawings, drawing different views of an object, knowledge of features and types of threads and fasteners used in mechanical objects, types of surface requirements on blueprints, and interpreting blueprints for casting and weldments.
- MTT 136 MILLING OPERATIONS** 6 Hrs.  
PREREQUISITE: None  
This course provides basic knowledge of milling machines. . Emphasis is placed on types of milling machines and their uses, cutting speed, feed calculations, and set-up procedures. Upon completion, students should be able to apply milling techniques to produce machine tool projects.
- MTT 146 PRECISION GRINDING MACHINES I** 6 Hrs.  
PREREQUISITE: None  
This course is the study of precision grinding machines and their operations. The course will also focus on the different types of grinding machines, different setup procedures, grinding wheel characteristics and selection, and surface finish requirements and characteristics.
- MTT 152 METALLURGY** 3 Hrs.  
PREREQUISITE: None.  
This course covers the production, properties, testing, classification, microstructure, and heat treating effects of ferrous and non-ferrous metals. Topics include the iron-carbon phase diagram, ITT diagram, ANSI code, quenching, senescing, and other processes concerning metallurgical transformations. Upon completion, the student should be able to understand the iron-carbon phase diagram, ITT diagram, microstructure images, and other phenomena concerning the behavior of metals.
- MTT 181/182/281/282 SPECIAL TOPICS IN MACHINE TOOL TECHNOLOGY** 1-3 Hrs.  
PREREQUISITE: None.  
This course is a guided independent study of special projects in machine tool technology. Emphasis is

placed on the student's needs. Upon completion, the student should be able to demonstrate skills developed to meet specific needs.

- MTT 291 COOPERATIVE EDUCATION IN MACHINE TOOL TECHNOLOGY** 3 Hrs.  
PREREQUISITE: None  
Students work on a part-time basis in a job directly related to machine tool technology. The employer and supervising instructor evaluate students' progress. Upon course completion, students will be able to apply skills and knowledge in an employment setting.

## MASS COMMUNICATIONS (MCM)

- MCM 100 INTRODUCTION TO MASS COMMUNICATION** 3 Hrs.  
This course provides the student with general study of mass communication and journalism. This course includes theory, development, regulation, operation, and effects upon society.
- MCM 113-114-115. 213-214-215 STUDENT PUBLICATIONS** 1-2 Hrs.  
PREREQUISITE: RDG 084 or equivalent placement score.  
These courses offer practical experience in journalism skills through working on the staff of student publications.
- MCM 120 INTRODUCTION TO JOURNALISM** 3 Hrs.  
PREREQUISITE: None.  
A first writing course in journalism, this course features journalistic style, copy reading, story types, headlines, typography, and page make-up.
- MCM 130 NEWS REPORTING** 3 Hrs.  
PREREQUISITE: RDG 084 or equivalent placement score.  
This course includes instruction and practice in news gathering and news writing techniques, including methodology, observation, interviews, and use of sources.
- MCM 200 NEWS PHOTOGRAPHY** 3 Hrs.  
PREREQUISITE: None.  
COREQUISITE: ENG 101  
This course includes practice in camera techniques, film developing, and print making for newspapers and other publications.
- MCM 230 SURVEY OF ADVERTISING** 3 Hrs.  
PREREQUISITE: None.  
COREQUISITE: ENG 101  
This course includes instruction in the structure and functions of the advertising agency and the elements of effective advertisement.
- MCM 240 INTRODUCTION TO PUBLIC RELATIONS** 3 Hrs.  
PREREQUISITE: None.  
COREQUISITE: ENG 101  
This course is an introduction to public relations techniques, including the grouping of publics, publication strategies, and preparation of publicity for various media.

## MATHEMATICS (MTH or MAH)

- MAH 101 INTRODUCTORY MATHEMATICS I** 3 Hrs.  
PREREQUISITE: None.  
This course is a comprehensive review of arithmetic with basic algebra designed to meet the needs of certificate and diploma programs. Topics include business and industry related arithmetic and geometric skills used in measurement, ratio and proportion, exponents and roots, applications of percent, linear