

COURSE DESCRIPTIONS

NOTE: THESE COURSE DESCRIPTIONS INCLUDE THOSE MOST COMMONLY TAUGHT AT BCTC. PLEASE NOTE THAT THIS IS NOT AN EXHAUSTIVE LIST. SHOULD YOU REQUIRE MORE INFORMATION, OR NEED A DESCRIPTION FOR A COURSE NOT LISTED HERE, PLEASE REFER TO THE KCTCS 2006 - 2007 CATALOG.

ACCOUNTING

ACC 201 Financial Accounting I (3)

This course is designed to provide an introduction to financial accounting from the users' perspectives. Its primary purposes are to promote understanding of financial accounting information for decision-making purposes and to focus on financial accounting's role in communicating business results. Prerequisite: Sophomore standing.

ACC 202 Managerial Uses of Accounting Information (3)

An introduction to the use of accounting data within an organization to analyze and solve problems and to make planning and control decisions. This course is designed for non-accounting majors. Prerequisite: ACC 201 or BE 161 and BE 162.

ACC 211 Financial Accounting Lab (1)

A laboratory-based approach to introductory financial accounting applications, with the primary focus on the accounting cycle. The primary objective is to promote an understanding of how accounting information is identified, recorded, and processed for financial reporting. Prerequisite: ACC 201. Enrollment priority will be given to accounting and finance majors.

ACR 100 Refrigeration Fundamentals (3)

Introduces the fundamentals of refrigeration, refrigeration terms and the basic refrigeration cycle. Proper use of tools, test equipment, and materials is stressed. Environmental issues including refrigerant handling are discussed. Refrigerant piping and methods used to join them are taught. General and specific safety is emphasized. Prerequisites: None. Co-requisites: ACR 101.

ACR 101 Refrigeration Fundamentals Lab (2)

Develops proper hands-on techniques in the servicing and troubleshooting of basic systems. Proper use and care of tools, equipment, and materials is stressed. Enhances the skills and working knowledge of tubing, fitting, brazing and soldering. Safety will be emphasized. Prerequisites: None. Co-requisites: ACR 100. Components: Laboratory

ACR 102 HVAC Electricity (3)

This course introduces students to the basic physics of electricity. Students apply Ohm's law; measure resistance, voltage, ohms, watts and amps; construct various types of electrical circuits; select wire and fuse sizes; and learn to troubleshoot an electric motor and motor controls. Prerequisites: None. Components: Lecture

ACR 103 HVAC Electricity Lab (1)

Introduces students to the basic physics of electricity. Students apply Ohm's law; measure resistance, voltage, ohms, watts and amps; construct various types of electrical circuits; select wire and fuse sizes; and learn to troubleshoot an electric motor and motor controls. Corequisites: ACR 102. Components: Laboratory

ACR 112 Sheet Metal Fabrication (3)

The student will learn to make patterns and lay out and construct common sheet metal duct fittings. Prerequisites: None. Corequisite: ACR 113.

Components: Lecture

ACR 113 Sheet Metal Fabrication Lab (2)

The student will lay out, cut, construct and install common sheet metal duct fittings. Prerequisites: None. Corequisite: ACR 112. Components: Laboratory

ACR 130 Electrical Components (3)

Defines the electrical components of an air conditioning system. Different types of line voltages, wiring diagrams and solid state devices are included. Safety is emphasized. Prerequisites: ACR 102. Corequisite: ACR 131. Components: Lecture

ACR 131 Electrical Components Lab (2)

In the laboratory, students practice using the different types of line voltages, reading wiring diagrams and using solid state devices. Safety is emphasized. Prerequisite: ACR 102. Corequisite: ACR 130. Components: Laboratory

ACR 170 Heat Load/Duct Design (3)

Introduces the fundamentals needed to calculate heat gain and heat loss, thereby determining air conditioner/furnace size. This information will be used to calculate the correct duct size. Procedures to lay out a duct system as outlined in ACCA MANUAL D are presented. Prerequisites: None. Components: Lecture

ACR 198 Practicum (2)

Practicum provides supervised on-the-job work experience related to the student's educational objectives. Students participating in Practicum do not receive compensation. Prerequisites: Permission of the Instructor. Components: Independent Study

ACR 199 Cooperative Education Program (2)

Co-op provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Cooperative Education program receive compensation for their work. Prerequisites: Permission of the Instructor. Components: Co-Op

AIR FORCE STUDIES

AFS 111 Aerospace Studies I (1)

A course designed to provide the student with a basic understanding of the nature and principles of war, national power, and the Department of Defense role in the organization of national security. The student also develops leadership abilities by participating in a military organization, the cadet corps, which offers a wide variety of situations demanding effective leadership. Corequisite: AFS 112

AFS 112 Leadership Laboratory I (1)

A course designed for development of basic skills required to be a manager, including communications, human relations, and administration of equal opportunity. Credit will not be granted toward the hours requirements for the degree. Pass/fail only. Corequisite: AFS 111.

AFS 113 Aerospace Studies I (1)

A course designed to provide the student with a basic understanding of the contribution of aerospace power to the total U.S. strategic offensive and defensive military posture. The student also develops leadership abilities by participating in a military organization, the cadet corps, which offers a wide variety of situations demanding effective leadership. Prerequisite: AFS 111

AFS 114 Leadership Laboratory 1 (1)
A continuation of AFS 113. A course designed to develop managerial skills including superior/subordinate relationships, communications, customs and courtesies, basic drill movements and career progression requirements. Credit will not be granted toward the hours requirements for the degree. Pass/fail only. Corequisite: AFS 113.

AFS 211 Aerospace Studies II (1)
Introduces the study of air power from a historical perspective; focuses on the development of air power into a primary element of national security. Leadership experience is continued through active participation in the cadet corps. Lecture, 1 hour; leadership, laboratory, one hour. Prerequisite: AFS 111, 113 or PAS approval.

AFS 212 Leadership Laboratory II (1)
A course designed for development of advanced skills required to be a manager/leader, including leadership studies, public speaking, group dynamics, motivation and preparation for field training. Credit will not be granted toward the hours requirements for the degree. Pass/fail only. Corequisite: AFS 211.

AFS 213 Aerospace Studies II (1)
Provides a foundation for understanding how air power has been employed in military and non-military operations to support national objectives. Examines the changing mission of the defense establishment, with particular emphasis on the United States Air Force. Leadership experience is continued through participation in the cadet corps. Lecture, one hour; leadership laboratory, one hour per week. Prerequisite: AFS 111, 113 or PAS approval.

AFS 214 Leadership Laboratory II (1)
A continuation of AFS 213. A course designed to develop supervisory management skills to include communications, techniques of critique, social actions, personnel evaluation procedures, problem solving, role playing and field training preparation. Credit will not be granted toward the hours requirements for the degree. Pass/fail only. Corequisite: AFS 213.

AFRICAN AMERICAN STUDIES

AAS 260 Afro-American History to 1865 (3)
A study of the Black experience in America through the Civil War. An examination of the African heritage, slavery, and the growth of the Black institutions. (Same as HIS 260.)

AAS 261 Afro-American History 1865- Present (3)
This course traces the Black experience from Reconstruction to the Civil Rights Movement of the 1960's. The rise of segregation and the ghetto and aspects of race relations are examined. (Same as HIS 261.)

AAS 264 Major Black Writers (3)
A cross-cultural and historical approach to written and oral works by major Black authors of Africa, the Caribbean and the United States. The course includes writers such as Chinua Achebe (Africa), Wilson Harris (Caribbean), and Toni Morrison (USA). (Same as ENG 264.)

AMERICAN MILITARY STUDIES

AMS 101 Introduction to the Army (2)
This introductory level course is designed to give students an appreciation for the role the Army currently plays in our society. The course covers the history of the Army and the roles and relationships of the Army within our society. The course also covers some of the basic

skills necessary for today's leaders to include oral presentation, time management, map reading, basic rifle marksmanship and squad tactics.

AMS 102 Introduction to Leadership (2)
This course is designed to acquaint the student with the fundamental skills necessary to be a leader, both in military and civilian context. Course also covers basic military map reading skills.

AMS 211 Advanced Leadership I (2)
This course focuses on both theoretical and practical aspects of leadership. Students will examine topics such as written and oral communication, effective listening, assertiveness, personality, adult development, motivation, and organizational culture and change.

AMS 212 Advanced Leadership II (2)
This course focuses principally on officership, providing an extensive examination of the unique purpose, roles, and obligations of commissioned officers. It includes a detailed investigation of the origin or our institutional values and their practical application in decision making and leadership.

ANTHROPOLOGY

ANT 101 Introduction to Anthropology (3)
This course introduces the student to the study of human cultures, past and present. It offers a comprehensive introduction to anthropology, emphasizing the concepts and methods of the major sub-fields, i.e., cultural, biological, archaeology, and linguistics. V

ANT 130 Introduction to Comparative Religion (3)
Comparative study of major world and selected regional religions with emphasis on analysis of belief, ritual, artistic expression and social organization. Eastern and Western religions are considered. (Same as RS 130.) V

ANT 160 Cultural Diversity in the Modern World (3)
Directed at non-majors, this course is intended to introduce the student to the diversity of human cultural experience in the contemporary world. Goals of the course include gaining an appreciation for the common humanity and uniqueness of all cultures; to gain a sensitivity toward stereotypes and ethnocentrism, and to understand the distinctions between "race," ethnicity and racism. The course features extended descriptions of the cultural dynamics of the culture(s) with which the instructor has worked. V

ANT 220 Introduction to Cultural Anthropology (3)
The study of the lifeways and beliefs of different peoples. The objectives of the course are to foster an appreciation for the variety of cultural traditions found throughout the world, and to introduce students to anthropological concepts and methods of inquiry. V

ANT 221 Native People of North America (3)
A survey of the aboriginal Indian cultures of North America, and of the impact of four centuries of British, French, Spanish, and Russian contact on the Indian communities. The course will include consideration of the status of Indians in present-day North America. V

ANT 240 Introduction to Archaeology (3)
Introduces the theories, techniques, and strategies used by archaeologists to recover and interpret information about past cultures.

ANT 241 Origins of Old World Civilization (3) A survey of cultural developments in the Old World from the earliest times to the beginning stages of civilization. V

ANT 242 Origins of New World Civilization (3)
Survey of the origin and growth of ancient peoples of the Americas as revealed by archaeological data. V

ARCHITECTURAL TECHNOLOGY

ACH 100 Construction Documents I (3)
This is the first course of a four-semester studio sequence. Proper methods and fundamentals of architectural construction documents and residential construction will be introduced. Drafting conventions utilizing basic hand drafting tools and computer-aided drawing techniques will be studied. Lecture: 2 hours, laboratory: 3 hours.

ACH 110 Survey of the Architectural Profession (1)
In this course, the student will gain an understanding of the language of architecture and develop an appreciation for building design strategies through direct analysis. In addition, various career opportunities in architecture and related professions will be explored.

ACH 120 Theory and History of Architecture I (3)
The development of architecture as it is related to world culture with an emphasis on design, structure, materials, eco-social, and political factors are considered.

ACH 150 Construction Documents II (3)
This is the second course of a four-semester studio sequence. Students develop architectural construction documents for multi-level framed construction. Students will further develop an understanding of programming, schematics, design development, and construction document production using current computer-aided technology. Emphasis will be placed on building codes and related discipline coordination. Lecture: 2 hours, laboratory: 3 hours. Prerequisite: ACH 100 or consent of instructor.

ACH 160 Building Materials and Construction I (3)
The essentials of the theory of selected building materials (Construction Specifications Institute, Divisions 2-7) and their assembly in appropriate systems are presented with particular attention to component selection and behavior under various loads, climatic conditions and fire.

ACH 161 Building Materials and Construction II (3)
The essentials of the theory of selected building materials (Construction Specifications Institute, Divisions 7-16) and their assembly in appropriate systems are presented with particular attention to component selection and behavior under various loads, climatic conditions and fire.

ACH 170 Theory and History of Architecture II (3)
A survey of the architectural periods from the neo-classic to the present is presented. This course is a continuation of ACH 120.

ACH 175 Introduction to Systems (3)
An overview of the various systems found in buildings and the influences that shape architectural design and construction is presented.

ACH 180 Selected Topics in Architectural Technology (Topic) (1-3)
The subject matter of this course may vary from semester to semester as new technology is developed and new issues evolve and/or to address local architectural issues. This course may be repeated with different topics to a maximum of six credit hours. Prerequisite: Consent of instructor.

ACH 185 Computer-Aided Drafting I (3)
Students learn how computer hardware and software are used in preparing architectural documents. Lecture: 2 hour; laboratory: 3 hours.

ACH 194 Visual Composition (3)
In this course, the student will study the aesthetic principles found in both two-dimensional and three-dimensional compositions. These

principles will be applied in exercises involving drawing, model construction and creative writing. Lecture: 1 hour, laboratory: 4 hours.

ACH 200 Construction Documents III (3)
This is the third course of a four-semester studio sequence. Students study the methods by which commercial buildings are designed and constructed. Basic skills are developed relating to the implementation of determinants in this process such as program analysis, applicable codes, construction methods and materials as well as computer applications. Through the completion of a series of structured projects including the preparation of a set of architectural construction documents for a medium-sized building, students apply the knowledge necessary to achieve these goals. Lecture: 2 hours, laboratory: 3 hours. Prerequisite: ACH 150 and ACH 185 or consent of instructor.

ACH 225 Structures (3)
Students study structural materials and systems including the design of simple structural components. Prerequisite: ACH 175 and MAH 125, or consent of instructor.

ACH 250 Construction Documents IV (3)
This is the fourth course of a four-semester studio sequence. Students prepare a set of advanced construction documents using current computer-aided drafting techniques. Emphasis will be placed on design principles and site development for a commercial construction project. Lecture: 2 hours, laboratory: 3 hours. Prerequisite: ACH 200 or consent of instructor.

ACH 260 Office Practice (3)
This course is intended to serve as a capstone course in the Architectural Technology program. Emphasis is placed on preparing students for the workplace by focusing on the professional, legal, and business aspects of the architectural and construction industries. Case studies are reviewed and projects are prepared by students with the goal of introducing them to a broader set of circumstances that affect how decisions are made in the practice of architecture. Prerequisite: ACH 110 and ACH 200 or equivalent.

ACH 275 Mechanical and Electrical Systems (3)
Students engage in a qualitative and quantitative study of environmental control systems used in buildings. Prerequisite: ACH 175 and MAH 125, or consent of instructor.

ACH 285 Computer-Aided Drafting II (3)
Students learn how to modify selected computer aided drafting software to enhance construction document production. Integration of other software will also be discussed. Prerequisite: ACH 185 or consent of instructor.

ACH 290 Building Codes I (3)
Students will analyze the content and format of current building codes. The necessity for building codes, problems in interpretation and application as well as legal aspects will be discussed. The main objective is to familiarize students with the basic provisions and procedures associated with building code administration. Prerequisite: ACH 150 and ACH 160, or consent of instructor.

ACH 291 Construction Management (3)
Students examine the principles and current practices of construction management with emphasis on project organization, scheduling and cost control. Prerequisite: ACH 150, ACH 160 and ACH 161, or consent of instructor.

ACH 292 Building Codes II (3)
This course will be continuation of ACH 290, Building Codes I, with a more in-depth study of current building codes. Prerequisite: ACH 290 or consent of instructor.

ACH 293 Presentation Techniques (3)
Students will explore a variety of presentation and rendering techniques used in the architectural profession. Design skills and the understanding of spatial relationships will be further developed. Lecture: 2 hours,

laboratory: 3 hours. Prerequisite: ACH 100 or consent of instructor.

ACH 294 Specification Writing (3)

This course provides an in-depth study of the importance of specifications in the design and construction process. Students will engage in research, evaluate the quality of building materials, study the methods of writing specifications, and gain exposure to industry-standard software in preparing a variety of specifications. Prerequisite: ACH 150, ACH 160, ACH 161, or consent of instructor.

ACH 297 Estimating Techniques (3)

Students investigate the factors affecting the cost of construction, labor productivity, materials, overhead and profit, including area and volume computations. Current methods of cost estimating will be applied. Lecture: 2.5 hours, laboratory: 1 hour. Prerequisite: ACH 150 and MAH 125; or consent of instructor.

ACH 298 Computer 3D Modeling (3)

Students learn how computer hardware and software are used in preparing 3D architectural drawings and client-oriented presentations. Prerequisite: ACH 150 and ACH 185 or consent of instructor.

ANATOMY

ANA 209 Principles of Human Anatomy (3)

The structure of the human body will be examined at various levels: cellular, tissues and organ systems. The gross anatomical arrangement of the body will be studied in a system-by-system format relating structure to function and the fundamentals of human embryology/malformation with adult anatomy. The central nervous system will be emphasized. Prerequisite: Introductory biology or zoology.

ART

A-H 105 Ancient Through Medieval Art (3)

Survey of the development of art and architecture with primary emphasis on cultures of Egypt, Western Asia, Greece, Rome, and medieval Europe. VII

A-H 106 Renaissance Through Modern Art (3)

Historical development of Western art and architecture from the 14th century through the present. VII

ART 100 Introduction to Art (3)

This course is open to all students interested in an understanding and appreciation of the visual arts. The formal and expressive qualities of major art forms are examined through lectures and presentations. VII Arts and Sciences

ART 110 — Drawing I (3)

Introduction to basic drawing skills and concepts. Projects in line, value, space and composition are among the topics that will be explored in a variety of media.

A&S 100 Special Introductory Course: Title TBA (1-6)

This course permits the offering at the introductory level of special courses of an interdisciplinary, topical, or experimental nature. Each proposal must be approved by the Dean of the College of Arts and Sciences. A particular title may be offered at most twice under the A&S 100 number. Students may not repeat under the same title. May be repeated to a maximum of 12 credits. Prerequisite: Will be set by instructor.

ASTRONOMY

AST 191 The Solar System (3)

A course emphasizing the nature, origin and evolution of planets, satellites and other objects in the Solar System. Topics also include historical astronomy, the naked eye phenomena of the sky and modern solar system discoveries made by spacecraft. This course may be taken independently of AST 192. IV

AST 192 Stars, Galaxies and the Universe (3)

A course covering the universe outside the Solar System. A principle theme is the origin and evolution of stars, galaxies and the universe at large. Topics also include black holes, quasars and the big bang model of the universe. This course may be taken independently of AST 191. IV

AUTO BODY REPAIR

ABR 100I ntroduction to Auto Body Repair (3)

This course introduces the student to safety, sanding, grinding, pulling, roughing and filling; the use of tools and equipment; and preparing and priming automotive panels through lectures and demonstrations. Components: Lecture Prerequisites: None

ABR 130 Non-Structural Analysis and Damage Repair (9)

This course gives instruction and provides practical experience in replacing and alignment of bolts on automotive parts such as doors, hoods and fenders; as well as instruction on the repair and replacement of non-structural weld-on automotive panels by aligning, welding, cutting and drilling through demonstrations and lectures. It will be taught by demonstration and hands-on practice. The skills required are most effectively taught and practiced on live work. The exact content will be influenced by the live work available. Components: Laboratory, Lecture Prerequisites: None

ABR 131 Non-Structural Analysis and Damage Repair Lab (4)

This course is the lab associated with ABR 130 and provides practical experience in replacing and alignment of bolts on automotive parts such as doors, hood, and fenders; as well as instruction on the repair and replacement of non-structural weld-on automotive panels by aligning, welding, cutting and drilling through demonstrations and lectures. It will be taught by demonstration and hands-on practice. The skills required are most effectively taught and practiced on live work. The exact content will be influenced by the live work available. Components: Laboratory Prerequisites: ABR 130 or concurrent enrollment.

ABR 150 Painting and Refinishing (9)

This course provides instruction in the use of lacquer, acrylic enamel and base coat/clear coat refinishing products, masking procedures, preparations and paint problems. It will be taught by demonstration and lecture. The auto and/or autos being used for live work will determine the exact course content. Components: Laboratory, Lecture Prerequisites: None

ABR 151 Painting and Refinishing Lab (4)

This course is the lab for ABR 150 and provides instruction in the use of lacquer, acrylic enamel, and base coat/clear coat refinishing products, masking procedures, preparations and paint problems. It will be taught by demonstration and lecture. The auto and/or autos being used for live work will determine exact content. Components: Laboratory Prerequisites: ABR 150 or concurrent enrollment.

ABR 198 Practicum (1-8)

The practicum provides supervised on-the-job work experience related to the students' education objectives. Students participating in the practicum do not receive compensation. May be taken for 1 - 8 credits.

Components: Practicum Prerequisites: Permission of Instructor

ABR 199 Cooperative Education (1)

Co-op provides supervised on-the-job work experience related to the students' educational objectives. Students participating in the Co-op Education program receive compensation for their work. May be taken for 1 - 8 credits. Components: Independent Study Prerequisites: Permission of the Instructor

ABR 200 Plastics and Adhesives (3)

This course provides instruction on how to repair plastic, fiberglass, SMC and flexible automobile parts. It will be taught by lecture and demonstration. Components: Laboratory, Lecture Prerequisites: Permission of Instructor

ABR 230 Structural Analysis and Damage Repair (9)

This course presents instruction on the analysis, repair and replacement of structural panels on unibody automobiles and body and frame alignment on unibody and frame cars. It will be taught by demonstration and lecture. Prerequisites/Co-requisites: None Components: Laboratory, Lecture

ABR 231 — Structural Analysis and Damage Repair Lab (4)

This course is the lab component and presents instruction on the analysis, repair and replacement of structural panels on unibody automobiles and body and frame alignment on unibody and frame cars. It will be taught through demonstration and hands-on experience. Components: Laboratory Prerequisites: ABR 230 or concurrent enrollment.

ABR 250 — Mechanical and Electrical Components 9

This course provides instruction in the diagnosis, repair and/or replacement of suspension, steering, electrical, brake, drive train, fuel, exhaust, and restraint systems. The theories and concepts of heating and air conditioning systems will also be discussed and demonstrated. It will be taught by demonstration and lecture and involve live work on automobiles. Components: Laboratory, Lecture Prerequisites: Consent of Instructor

ABR 251 — Mechanical and Electrical Components Lab 2

This course is the lab for ABR 250 and provides instruction in the diagnosis, repair and replacement of suspension, steering, electrical, brake, drive train, fuel, exhaust and restraint systems. The theories and concepts of heating and air conditioning systems will also be discussed and demonstrated. It will be taught by demonstration and lecture and involve live work on automobiles. Components: Laboratory Prerequisites: ABR 250 or concurrent enrollment.

ABR 291 — Special Projects I 3

This course will be designed for students to satisfactorily complete collision repair tasks or to enhance their skills in the occupational area. Components: Laboratory Prerequisites: Permission of the Instructor

ABR 293 — Special Projects II (2)

This course will be designed for students to satisfactorily complete collision repair tasks to enhance their skills in the occupational area. Components: Laboratory Prerequisites: Permission of the Instructor

ABR 295 — Special Projects III 3

This course will be designed for students to satisfactorily complete collision tasks to enhance their skills in the occupational area. Components: Laboratory Prerequisites: Permission of the Instructor

ABR 298 — Practicum 2

The practicum provides supervised on-the-job work experience related

to the students' education objectives. Students participating in the practicum do not receive compensation. Prerequisites: Permission of the Instructor Components: Independent Study

ABR 299 — Cooperative Education 2

Co-op provides supervised on-the-job work experience related to the students' educational objectives. Students participating in the Co-op Education program receive compensation for their work. Components: Independent Study Prerequisites: Permission of the Instructor

AUTOMOTIVE TECHNOLOGY

ADX 120 — Basic Automotive Electricity (3)

This course introduces the student to the principles, theories, and concepts of the automotive electrical system that include the unique diagramming, coding and locating of wiring, and component devices. Components: Lecture Prerequisites: None Corequisites: ADX 121

ADX 121 — Basic Automotive Electricity Lab (2)

A hands-on class designed to allow the student to use the concepts, principles, and theories covered in Basic Automotive Electricity, ADX 120 in practical application. The student may be provided a work/study experience alternating between periods of work off campus and work in a classroom laboratory setting. Co-requisite: ADX 120. Components: Laboratory

ADX 150 — Engine Repair (3)

This course provides a series of lectures and demonstrations on the fundamentals of engine repair, troubleshooting and engine operation and maintenance. Components: Lecture Corequisites: ADX 151

ADX 151 — Engine Repair Lab (2)

Practical experiences and applications relating to engine repair, inspection, trouble shooting and maintenance. The student may be provided a work/study experience alternating between periods of work off campus and work in a classroom laboratory setting. Co-requisite: ADX 150. Components: Laboratory

ADX 170 — Climate Control (3)

This course introduces the theory and operation of heating and air conditioning systems. Air conditioning terminology and how to service and troubleshoot mechanical and electrical circuits of heating and air conditioning systems are emphasized. Components: Lecture Corequisites: ADX 171

ADX 171 — Climate Control Lab (1)

Opportunities will be provided to trouble shoot, repair and perform maintenance on heating and air conditioning systems. Safety precautions, special tool uses, component operation and how to service and trouble shoot the complete system will be experienced. The student may be provided a work/study experience alternating between periods of work off campus and work in a classroom laboratory setting. Co-requisite: ADX 170. Components: Laboratory

ADX 260 — Electrical Systems (3)

This course focuses on the theory and principles relating to automotive electrical/electronic components. Components: Lecture Corequisites: ADX 261

ADX 261 — Electrical Systems Lab (2)

Practical applications and experiences will be provided related to the theory and principles of automotive electrical/electronic components. The student may be provided a work/study experience alternating between periods of work off campus and work in a classroom laboratory setting. Co-requisite: ADX 260. Components: Laboratory

BIOLOGICAL SCIENCES

BIO 102 Human Ecology (3)

A study of the interrelationships of man, populations, space, energy, food, mineral resources and other life on earth. Not for life science majors. IV

BIO 103 (BIO 112) Basic Ideas of Biology (3)

Introductory biology. Discussion topics are those relevant to both plants and animals—cell structure and function, molecules important to living things, metabolism, heredity, environment. Not for life science majors.

BIO 110 Introduction to Human Biology and Health (3)

A course describing basic anatomical and physiological functions of various body cells, tissues and organs and their interrelationships as a functioning whole. It also deals with basic information as to maintenance of health; brief description of the major and common diseases affecting man—their control and prevention.

BIO 111 General Biology Laboratory (1)

Laboratory studies in the structure and function of cells, plants and animals; ecology; heredity; and evolution. IV

BIO 150 Principles of Biology I (3)

The first semester of an integrated one-year sequence (BIO 150 and BIO 152) that is designed to develop an appreciation of biological principles necessary to explore life at the cellular and molecular levels. Similarities and differences in structure and function of simple and complex cells will be covered along with theories on the origin and evolution of biological systems. Prerequisite: CHE 105, or Math ACTE score of 26 or above plus concurrent enrollment in CHE 105, or chemistry placement test passed plus concurrent enrollment in CHE 105. IV

BIO 151 Principles of Biology Laboratory I (2)

An introductory laboratory in which biological systems are investigated at the cellular and molecular levels. Laboratory: four hours per week. Prerequisite: This course is a companion to the BIO 150 lecture course, but it need not be taken concurrently. IV

BIO 152 Principles of Biology II (3)

The second semester of an integrated one-year sequence (BIO 150 and 152) that is designed to develop understanding and appreciation for the diverse forms of plant and animal life, and their relationships to each other and to their environment. Structure and function relationships will be explored at many levels of organization: cell, tissue, organ, organism, population and community. Prerequisite: CHE 105, or Math ACTE score of 26 or above plus concurrent enrollment in CHE 105, or chemistry placement test passed plus concurrent enrollment in CHE 105. IV

BIO 153 Principles of Biology Laboratory II (2)

An introductory laboratory course in which biological systems are investigated at the organismal, population and community levels. Laboratory: four hours per week. Prerequisite: CHE 105, or Math ACTE of 26 or above plus concurrent enrollment in CHE 105, or chemistry placement test passed plus concurrent enrollment in CHE 105. IV

BIO 208 (BIO 226) Principles of Microbiology (3)

This course introduces fundamental microbiological principles and techniques. Emphasis is placed upon structural, functional, ecological and evolutionary relationships among microorganisms, principally viruses, rickettsiae bacteria, fungi and algae. Prerequisite: High school chemistry recommended. IV

BIO 209 Introductory Microbiology Laboratory (2)

Laboratory exercises in general microbiology. Laboratory: four hours per week. Prerequisite: One unit of chemistry or consent of instructor; BIO 208 should be taken concurrently. IV

BSL 110 (BIO 137) Human Anatomy and Physiology I (4)

The interrelationship of structure and function of each body system will be presented in two semesters. The first semester will include basic chemistry, cell structure, cell physiology, metabolism, tissues, and

integumentary, skeletal, muscular, and nervous systems. Prerequisites: Reading, English and Mathematics assessment exam scores above the KCTCS developmental placement level or successful completion of the prescribed developmental course(s) or consent of instructor. Lecture 3 hours, laboratory: 2 hours. IV

BSL 111 (BIO 139) Human Anatomy and Physiology II (4)

The second semester continues the study of the inter-relationships of organ systems, including the endocrine, reproductive, cardiovascular, lymphatic, digestive, respiratory, and urinary systems. Lecture: 3 hours, laboratory: 2 hours. Prerequisite: BSL 110. IV

BSL 214 Medical Microbiology* (4)

The characteristics of microorganisms and their relation to health and disease are studied. Lecture: 3 hours, laboratory: 3 hours. Prerequisite: BSL 110 and BSL 111, or equivalent. IV

*Formerly BSL 212

BSL 295 Independent Investigation in Biology (1-3)

The investigation of a specific topic or problem in the field of the biological sciences appropriate for students at the sophomore level. May be repeated for a maximum of six credits. Laboratory varies with credit. Prerequisite: Permission of instructor.

BSL 299 Selected Topics in Biology, Subtitle required (1-3)

Recent trends and discoveries in selected areas of biology will be presented in a seminar format. Emphasis will be placed on discussion and critical thinking. May be repeated with different subtitle for a maximum of six credits. Prerequisite: Permission of instructor.

BUSINESS MANAGEMENT AND MARKETING

MGT 101 Quality Management Principles (3)

Students are introduced to fundamental concepts, principles and practices used to improve quality in organizations. Students will practice problem solving techniques, make decisions based on data, work in teams, troubleshoot and demonstrate knowledge of implementing continuous quality improvement processes.

MGT 120 Personal Finance (3)

Information needed to make intelligent choices and take effective action in the management of personal resources is provided. Topics include financial planning, buying, borrowing, saving, budgeting, investing, insurance, and taxes.

MKT 155 Personal Selling (3)

The professional selling process which involves a series of interrelated activities is introduced. Emphasis is placed on planning and delivery of sales presentations. The six selling steps are examined - prospecting, qualifying, presenting, answering objections, closing, and the after-sale service. Students demonstrate effective sales techniques through simulation and role playing.

MGT 160 Introduction to Business (3)

Business careers, terminology, and the interrelationships and complexities of business are introduced and examined in this survey course.

MGT 200 Small Business Management (3)

Students are introduced to the many facets of establishing, operating and/or owning a small business. Topics include legal forms of business organization, finance, accounting, insurance, governmental regulations and assistance, economics, marketing, and management principles. Prerequisite: MGT 160 or B&E 100, or consent of instructor.

MGT 256 Operations Management (3)

Concepts and methods for economical planning and control of activities required for transforming a set of inputs into specified goods or services are introduced. Emphasis is given to forecasting, decision analysis,

cost analysis, design of production systems, production/marketing relationships, operations planning and control, and the importance of global competitiveness. Prerequisite: MGT 283 or consent of instructor.

MGT 267 Introduction to Business Law (3)

The student is introduced to the state and federal court systems, tort and criminal law, law of contracts, partnerships, sale of goods, government regulations, bailment and negotiable instruments.

MGT 274 Human Resource Management (3)

The student is introduced to the basic methods of recruiting, selecting, training, compensating, and maintaining a productive workforce. Concepts of effective employee relations including collective bargaining, contract administration, and safety and health programs are introduced. Techniques for systematic human resource planning and development of policies consistent with government regulations are emphasized. Prerequisite: MGT 283 or consent of instructor.

MKT 282 Principles of Marketing (3)

The marketing function is introduced and applied to various types of business organizations with attention to the marketing concept. Topics include the marketing mix of product, price, promotion, and distribution decisions; international marketing; and social responsibility. Prerequisite: MGT 160 or consent of instructor.

MGT 283 Principles of Management (3)

The functional framework of planning, organizing, leading, and controlling is utilized to introduce the management process. The interdisciplinary nature of management theory is introduced also, with the inclusion of relevant aspects of human behavior and rational decision making. Prerequisite: MGT 160 or consent of instructor.

MGT 284 Applied Management Skills (3)

This is the capstone course in which management theories and techniques are applied with emphasis on the action-skills that managers need for success. Course topics include delegating, motivating employees, team-building, conflict management, coaching and managing change. Prerequisite: MGT 283 or prior supervisory experience.

MGT 288 Self-Management (3)

The need for managers to be self-directed before they can manage successfully the work of others is emphasized. Contemporary approaches to developing the behavioral skills needed to improve personal effectiveness are explored. Topics include personal planning and goal setting, time management, stress management, interpersonal and human relations skills.

MKT 290 Advertising and Promotion (3)

The principles of advertising will be introduced to the student. Topics will include economic and social aspects; advertising research; media strategy; consumer behavior; and legal issues in advertising. Prerequisite: MKT 282.

MKT 291 Retail Management (3)

Retail structure, merchandising, promotions, store control, and decision making are examined in this course. Fundamental principles of store organization, consumer behavior, and customer service are addressed. Retailing trends, opportunities, and problems are included also.

MKT 293 Buying and Merchandising (3)

Decision making strategies are used to solve problems inherent in merchandise selection. Analysis of financial statements and their relationship to buying situations are included, along with cost control and the establishment of sales goals and objectives. Mark-ups, reduction planning, unit cost control, and other computations are emphasized. Lecture: 2 hours, laboratory: 2 hours. Prerequisite: MKT 291.

MGT 299 Selected Topics in Management: (Topic) (1-3)

Technological developments, new business issues, and/or local management topics are presented and studied. Lecture: 1-3 hours (variable). Prerequisite: Consent of instructor.

MKT 299 Selected Topics in Marketing: (Topic) (1-3)

Technological developments, new business issues, and/or local marketing topics are presented and studied. Lecture: 1-3 (variable). Prerequisite: Consent of Instructor.

CONSTRUCTION CARPENTRY TECHNOLOGY

CAR 126 — Introduction to Construction Carpentry (3)

This course emphasizes the types, grades, sizes and standards of building materials including the types of fasteners and their correct uses. Students will also learn to correctly utilize and maintain commonly used hand and power tools. Safety in the lab and on the job site is stressed.

Components: Lecture

Prerequisites: None

CAR 127 — Introduction to Construction Carpentry Lab(1)

This course emphasizes the types, grades, sizes and standards of building materials including the types of fasteners and their correct uses. Students will also learn to correctly utilize and maintain commonly used hand and power tools. Safety in the lab and on the job site is stressed.

Components: Laboratory

Corequisites: CAR 126

CAR 140 — Site Layout and Foundations (3)

Students will prepare materials, calculate the cost for a building site, and layout a site with a transit, locating property lines and corners. Students calculate the amount of concrete needed for footing and foundation walls and construct different types of foundations and forms.

Components: Lecture

Prerequisites: None

CAR 141 — Site Layout and Foundations Lab (2)

Students will prepare materials, calculate the cost for a building site, and layout a site with a transit, locating property lines and corners. Students calculate the amount of concrete needed for footing and foundation walls and construct different types of foundations and forms.

Components: Laboratory

Corequisites: CAR 140

CAR 150 — Construction Forms (3)

This course will introduce the student to heavy and commercial construction. The student will receive information about rigging, mall forms, vertical piers and columns, on grade curb forms, horizontal beam forms, above grade slab systems, fire proof encasement forms, stair forms, bridge and bridge deck forms.

Components: Lecture

Prerequisites: None

CAR 151 — Construction Forms Lab (2)

This course will introduce the student to heavy and commercial construction. The student will receive information about rigging, mall forms, vertical piers and columns, on grade curb forms, horizontal beam forms, above grade slab systems, fire proof encasement forms, stair forms, bridge and bridge deck forms. Components: Laboratory

Corequisites: CAR 150

CAR 190 — Floor and Wall Framing (2)

The student will practice floor framing, layout and construction of floor frames. Cutting and installing floor and wall framing members according to plans and specifications will also be practiced.

Components: Lecture Prerequisites: None

CAR 191 — Floor and Wall Framing Lab (2)

The student will practice floor framing, layout and construction of floor frames. Cutting and installing floor and wall framing members according to plans and specifications will also be practiced.

Components: Laboratory Corequisites: CAR 190

CAR 196 — Ceiling and Roof Framing (3)

This course covers roof types and combinations of roof types used in the construction industry. The emphasis of this course is on layout, cutting and installing ceiling joists, rafters, roof decking and roof coverings.

Components: Lecture Prerequisites: None

CAR 197 — Ceiling and Roof Framing Lab (2)

This course covers roof types and combinations of roof types used in the construction industry. The emphasis of the course is on layout, cutting and install ceiling joists, rafters, roof decking and roof coverings.

Components: Laboratory Corequisites: CAR 196

CAR 200 — Exterior and Interior Finish (3)

This course presents basic concepts of building trim, gypsum wallboard, paneling, base, ceiling and wall molding with instruction on acoustical ceilings and insulation, wood floors, tile, inlaid adhesive and tools of the flooring trade. This course will continue to refine the techniques and skills taught in the previous carpentry courses. In this course, cost control, speed and precision are emphasized. In addition, students will perfect the skills associated with the exterior finishing of a house.

Components: Lecture

Prerequisites: Permission of the Instructor

CAR 201 — Exterior and Interior Finish Lab (3)

This course presents basic concepts of building trim, gypsum wallboard, paneling, base, ceiling and wall molding with instruction on acoustical ceilings and insulation, wood floors, tile, inlaid adhesive and tools of the flooring trade. This course will continue to refine the techniques and skills taught in the previous carpentry courses. In this course, cost control, speed and precision are emphasized. In addition, students will perfect the skills associated with the exterior finishing of a house.

Components: Laboratory Corequisites: CAR 200

CAR 240 — Cabinet Construction and Installation (3)

Students will lay out and plan the construction of base and wall cabinets. They will construct and install cabinets and special units, and sand and prepare wood surfaces for finishing. Components: Lecture

Prerequisites: CAR 126, CAR 127

CAR 241 — Cabinet Construction and Installation Lab (2)

Students will lay out and plan the construction of base and wall cabinets. They will construct and install cabinets and special units, and sand and prepare wood surfaces for finishing. Components: Laboratory

Prerequisites: CAR 126, CAR 127 Corequisites: CAR 240

CAR 298 — Practicum (2)

The Practicum provides supervised on-the-job work experience related to the student's education objectives. Students participating in the Practicum do not receive compensation. components: Practicum

Prerequisites: Permission of the Instructor

CAR 299 — Cooperative Educational Program (2)

Co-op provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Co-op Education program receive compensation for their work.

Components: Co-Op Prerequisites: Permission of the Instructor

CHEMISTRY**CHE 104 Introductory General Chemistry (3)**

A study of the general principles including laws of definite and multiple proportions, stoichiometry, gases, electronic structure, chemical bonding, periodic relationships, oxidation-reduction, acid bases, chemical equilibrium and acid/bases. Intended for students interested in a one-semester course in general chemistry and recommended for students seeking careers in nursing, nutrition and allied health science fields. Not open to students who have already completed both CHE 105 and 107. Prerequisite: A working knowledge of algebra such as is acquired in two years of high school algebra, CHE 105, or MA 108R, or a composite ACTE score of 19 or above. IV

CHE 105 General College Chemistry I (3)

A study of the principles of chemistry and their application to the more important elements and their compounds. Not open to students who have already completed both CHE 104 and 106, but is open to students who have completed just CHE 104. Prerequisite: Math ACTE of 21 or above, or MA 109 (or Math placement test), or Chemistry placement test, or the community college course CHE 102R or CHM 100. IV

CHE 106 Introduction to Inorganic, Organic and Biochemistry (4)

A continuation of CHE 104. A study of selected aspects of inorganic, organic and biochemistry including the chemistry of metals and nonmetals, introduction to organic functional group chemistry, proteins, nucleic acids and lipids. Lecture: 3 hours, laboratory: 3 hours per week. Not open to students who have already completed CHE 105 and 107. Not recommended for students seeking careers in medicine, science, dentistry, engineering, veterinary science, agricultural sciences, education, or allied fields for which the recommended sequence is CHE 105-107-115. Prerequisite: CHE 104 or the community college course CHM 100. IV

CHE 107 General College Chemistry II (3)

A continuation of CHE 105. A study of the principles of chemistry and their application to the more important elements and their compounds. Not open to students who have completed only CHE 104 but is open to students who have completed both CHE 104 and 106. Prerequisite: CHE 105 or both CHE 104 and 106. IV

CHE 115 General Chemistry Laboratory (3)

An introductory laboratory course dealing with chemical and physical properties; qualitative analysis, and an introduction to quantitative analysis. Lecture: one hour; laboratory: four hours. Prerequisite or concurrent: CHE 107. IV

CHE 230 Organic Chemistry I (3)

Fundamental principles and theories of organic chemistry. Prerequisite: CHE 107 and 115. IV

CHE 231 Organic Chemistry Laboratory I (2)

Laboratory for CHE 230 or CHE 236. Laboratory: 6 hours. Prerequisite or concurrent: CHE 230 or CHE 236. IV

CHE 232 Organic Chemistry II (3)

A continuation of CHE 230. Prerequisite: CHE 230. IV

CHE 233 Organic Chemistry Laboratory II (2)

Laboratory for CHE 232. Laboratory: 6 hours. Prerequisite: CHE 231. Prerequisite or concurrent: CHE 232. IV

CHM 101 Chemistry: A Cultural Approach (3)

Designed to introduce nonscience majors to the main concepts of chemistry, CHM 101 emphasizes the relationship between chemistry and other areas of learning. Prerequisite: MA 108R or MAH 125 or equivalent. IV

CHM 104 Introductory General Chemistry Laboratory (1)

Measurements, chemical and physical properties, qualitative analysis, and quantitative analysis are covered in this introductory general

chemistry laboratory. Laboratory: 2 hours. Prerequisite: CHE 104 or concurrent. IV

CHM 105 General Chemistry Laboratory I (2)
This laboratory and recitation course deals with chemical and physical properties, qualitative analysis and quantitative analysis. Lecture: 1 hour, laboratory: 3 hours. Prerequisite: Concurrent registration or credit in CHE 105 or equivalent. IV

CHM 107 General Chemistry Laboratory II (2)
This laboratory and recitation course deals with chemical and physical properties, qualitative analysis and quantitative analysis. Lecture: 1 hour, laboratory 3 hours. Prerequisite: CHM 105 and concurrent registration or credit in CHE 107 or equivalent. IV

CIVIL ENGINEERING TECHNOLOGY

CET 150 Civil Engineering Graphics (3)
This course provides the opportunity for the student to learn the basic theory necessary to generate and understand typical civil engineering working drawings. The student will develop graphic communication skills using current industry standard software. Lecture: 2 hours, laboratory: 3 hours. Prerequisite: CAD 100 or ACH 195.

CET 200 Civil Engineering Materials (3)
The course will provide a practical look at current practice in the use of materials for civil engineering applications. Students will learn test procedures, design considerations, and overall evaluation methods for these materials. The course will include the study of soils, aggregates, concrete, and asphalt cement. Lecture: 2 hours, laboratory: 3 hours. Prerequisite: ACH 160.

CET 210 Structural Analysis and Design (3)
The course will cover building structure for civil engineering technology students, including different types of building loads and their effect upon the various materials used by architects, engineers and technologists. The students will be introduced to quality construction techniques utilizing steel, concrete and reinforced concrete. Industry manuals, specifications and computer programs will be utilized to familiarize the student with current technology. Prerequisite: ACH 225.

CET 220 Intermediate Surveying (4)
The course will include the application of surveying practices for route surveying for highways, construction staking, and topographic surveys. Students will perform deed research and evaluation, convert outdated deed descriptions into current measurements, and prepare record plats. Lecture: 3 hours, laboratory: 3 hours. Prerequisite: CE 211.

CET 260 Hydrology and Drainage (3)
Students will be introduced to the fundamentals of hydrology, including hydraulics of open and closed systems, water quality and drainage. Characteristics of pressures and flows in pipes, storm water runoff, culvert and ditch flow will be studied. Lecture: 2 hours, laboratory: 3 hours. Prerequisite: ACH 160, ACH 225, and PHY 211, or consent of instructor.

CET 280 Highway Design (3)
Students will be introduced to the fundamentals of highway design. Different components involved in designing a typical highway, including planning, surveying, mapping, and preliminary and final design will be explored using computer design software. Lecture: 2 hours, laboratory: 3 hours per week. Prerequisite: CAD 100 or ACH 185, MA 109, and CE 211.

CET 295 Independent Problems (1-4)
A problem or special project, approved by the instructor, will provide an opportunity for independent study for Civil Engineering Technology students. This course may be repeated to a maximum of six credits. Lecture: Variable. Laboratory: Variable. Prerequisite: Consent of instructor.

COMMUNICATIONS

COM 101 Introduction to Communications (3)
An introduction to the process of communication as a critical element in human interaction and in society. Designed to enhance effective communication and informed use of the mass media. V

CMS 142 Communications Practicum (1-4)
Student works a minimum of two hours each week with the college newspaper. Independent Study.

CMS 153 Newspaper Internship (4)
Student works for a newspaper a minimum of 160 hours. Prerequisite: JOU 204. Independent Study.

COM 181 Basic Public Speaking (3)
A course designed to give the student platform experience in the fundamentals of effective speaking. II

COM 252 Introduction to Interpersonal Communication (3)
Examines basic verbal and nonverbal elements affecting communication between individuals in family, peer group, and work contexts. Course requires participation in activities designed to develop interpersonal communication skills. Topics include: strategy development, relationship and conversation management, effective listening, conflict management, defensive communication, communication anxiety, cultural/sex differences in communication style. II

COM 254 — Introduction to Intercultural Communication (3)
An introduction to the topics of intercultural communication with an emphasis on the relationships between culture and communication, social/psychological variables, verbal/nonverbal language systems, intercultural communication perceptions, and conflict resolution. Contemporary issues in cross-cultural interaction, media representation, and daily social interactions will be practically applied to intercultural communication concepts.

COM 281 Communication in Small Groups (3)
A study of communication processes in small group situations. Topics include conflict, leadership, and decision making. Students will participate in group discussions and develop skills in analyzing group performance. II

COM 287 Persuasive Speaking (3)
A study of the processes involved in attitude change, with emphasis on the preparation and delivery of persuasive messages.

COMPUTER -AIDED DESIGN

CAD 100 Introduction to Computer-Aided Design (3)
An emphasis will be placed on techniques of computer drafting; construction of straight and curved lines; orthographic and axonometric views and sections; dimensions, tolerances, and notes; as well as an introduction to the terminology associated with CAD. Basic computer operations involving move, copy, delete, and save are included, along with drawing manipulation involving translation, rotation, zooming, panning, and windowing. Lecture: 2 hours, laboratory: 3 hours. Prerequisite: ME 105 or ET 102 or consent of instructor.

CAD 200 Intermediate Computer-Aided Design (3)
Students will develop familiarity with standard symbols associated with one or more application areas. Competency will be developed in advanced techniques of drafting, including complex curves, layering, and the production of three-dimensional wire models - with and without hidden lines. The students also will learn to calculate lengths and areas associated with the drawings, and will write simple programs in an appropriate high-level language to interface with the existing CAD software. Lecture: 2 hours, laboratory: 3 hours. Prerequisite: CAD 100 or consent of instructor.

COMPUTER & INFORMATION TECHNOLOGIES

CIT 103 Computer Literacy (1)
Commonly used capabilities of computers are explored with emphasis on computer basics and terminology as well as software packages. Students also gain hands-on experience with common productivity software, email, and Internet access. Not available for credit to persons who have previously satisfied the computer literacy requirement.

CIT 105 Introduction to Computing (3)
An overview of computer information systems. Concepts include terminology, computer hardware, software, and networks as well as the impact of computers on society, ethical issues in computing, and trends in information processing. Students use a microcomputer with systems software and applications software, including a word processor, electronic spreadsheet, database management system, and web page editor to process data and present useful information. Prerequisite: CIS 103 or successful completion of the CIS placement exam or consent of instructor.

CIT 110 Operating Systems Concepts (3)
A conceptual and practical overview of operating systems is covered. Topics include: user interfaces such as graphical user interfaces and command syntax interfaces; task management; file systems; network connectivity and resource sharing; and operating systems installation and maintenance. Students will be exposed to multiple operating systems. Hands-on experience with hardware and software is provided. Prerequisite: CIS 105 or consent of instructor.

CIT 120 Program Design (3)
The design of language-independent computer programs for solving common business-oriented problems is covered. Programming logic and programming structures common to all languages are emphasized. Prerequisite: CIS 105 or concurrent; and MA108R; or consent of instructor.

CIT 130 Microcomputer Applications (3)
Students use a microcomputer and current word processing, spreadsheet, database, and presentation software to solve common business problems. Basic features of each software application are covered, as well as requirements, capabilities, and limitations. Prerequisite: CIT 105 or consent of instructor.

CIT 140 JavaScript I: JavaScript and the Web (3)
In this course, students will code and execute JavaScript programs. JavaScript can be used to create dynamic behavior in elements of a Web page. Programs involve controlling the behavior of forms, buttons, and text elements, and can be used to write special-purpose calculators or create forms whose fields have built-in error checking. Prerequisite: Admission into the CIT program, CIT 150 or consent of instructor.

CIT 141 VBScript I : VB Scriptt Fundamentals (3)
In this course, students will code VBScript programs. Students will develop both client-side and server-side Internet applications as well

as standalone scripts. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 143 COBOL I (3)
Students code and execute error-free programs in the COBOL language, a level I programming language, including proper documentation. The program development will use orderly, structured methodology. Programs will involve sequential input/output, report formatting, editing of data, numeric calculations, single level control breaks, and processing tables. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 145 Perl I: Perl Fundamentals (3)
Students design, code, execute, and test scripts in the Perl programming language. Topics include Perl variables, operators, and control structures as well as pattern matching, introductory Perl objects and modules, and Perl application scripts. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 148 Visual Basic I (3)
Students design, code, test, and execute programs in this level I programming language. Topics also include menus, dialogue boxes, child window controls (push buttons, radio buttons), the graphical user interface, mouse input, fonts, and printing. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 149 Java I: Java Fundamentals (3)
Students code and execute applications in the Java programming language. Topics include standard control structures in Java applications, methods, arrays, object-oriented programming, and developing graphical user interfaces. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 150 Internet Technologies (3)
This course will provide students with a thorough study of traditional and emerging Internet technologies. Topics include Internet fundamentals, Internet applications, Internet client/server information delivery systems, and Internet client/server computing. Students will have hands-on experience with a number of Internet applications, including rudimentary programming in an Internet environment. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 160 Data Communications and Networking (4)
Data communications and networking concepts including hardware, software, and transmission media; access methods and protocols; and network configurations are included. System design considerations are addressed. Emphasis is on local area networks; students will install a simple local area network. This is the first course in the Cisco Networking Academy Curriculum. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 170 Introduction to Database Design (3)
This course introduces the standards for designing relational databases. Design criteria include first, second, and third normal forms to eliminate modification anomalies. Discussions review the capabilities of three major types of data models -hierarchical, network, and relational - as they apply to hypothetical sets of data objects. Experiences include the creation of a logical design, and translation into a physical database using the relational model. Queries will be performed using both a host language interface and Structured Query Language. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 171 SQL 1 (3)
The course is designed to provide students with an extensive introduction to database manipulation technology. The class covers the SQL and PL/SQL programming languages. Students create and maintain database objects, and store, retrieve and manipulate data. Students create PL/

SQL blocks of reusable application code. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 211 Microsoft Windows Client Operating System (3)

This course provides students with the knowledge and skills necessary to install and configure Microsoft Windows client operating systems on stand-alone computers as well as on client computers that are part of a workgroup or domain. This course will also help prepare students for exams in the Microsoft certification exam series. Prerequisites: Admission into the CIT program and CIT 160; or consent of instructor.

CIT 212 Microsoft Windows Server Operating System (3)

This course provides students with the knowledge and skills necessary to install and configure Microsoft Windows server operating systems and to provide file, print and terminal services. This course will also help prepare students for exams in the Microsoft certification exam series. Prerequisites: Admission into the CIT program and CIT 211; or consent of instructor.

CIT 213 Netware System Administration (3)

This course is designed to provide students with the necessary knowledge and skills to perform competently in the role of network administrator or system manager. Students completing this course will be able to perform basic and fundamental network management tasks on a Novell NetWare network. Lecture: 2 hours, laboratory: 2 hours. Prerequisites: Admission into the CIT program and CIT 160, or consent of instructor.

CIT 214 Advanced Netware System Administration (3)

This course is designed to provide students with the knowledge and skills to design, configure, and administer a complex network. The course is designed to provide advanced skills and abilities to handle more challenging network situations than were presented in the basic administration course. Lecture: 2 hours, laboratory: 2 hours. Prerequisite: Admission into the CIT program and CIT 213, or consent of instructor.

CIT 217 Unix Administration (3)

This course provides students with the knowledge and skills necessary to perform post- installation and day-to-day administration tasks in a single-domain or multiple-domain Unix based network. Lecture: 2 hours, laboratory: 2 hours. Prerequisite: Admission into the CIT program and CIT 160; or consent of instructor.

CIT 218 Advanced Unix Administration (3)

This course provides the core foundation for supporting the Unix operating system. The goal of this course is to provide support professionals with the skills necessary to install, configure, customize, optimize, network, integrate, and troubleshoot Unix. Lecture: 2 hours, laboratory: 2 hours. Prerequisite: Admission into the CIT program and CIT 217, or consent of instructor.

CIT 220 Systems Analysis and Design (3)

This course introduces the student to the key concepts, skills and techniques needed to become effective systems professionals who work with others to create business-oriented computer information systems. Emphasis is placed on planning and analysis phases of the traditional system development life cycle, and the latest systems analysis modeling tools and techniques. Prerequisites: Admission into the CIT program and ENG 102 or concurrent; or consent of instructor. A Level I Programming Language recommended.

CIT 230 Advanced Microcomputer Applications (3)

Students use advanced features of current word processing, spreadsheet, database management and presentation software. Integration between the various software packages is performed and students investigate other software applications and their uses in the business environment. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 234 Advanced Spreadsheet Applications (3)

Advanced functions of a current spreadsheet software package will be covered, including data tables, scenarios, financial functions, creating and using template files, using hyperlinks, multiple worksheets and 3D formulas, creating and using command buttons and macros to automate repetitive tasks, and using data management features to sort, perform queries, and extract useful information. Emphasis will also be given to integration among various software applications. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 236 Advanced Database Applications (3)

Advanced features of a current database software package will be covered, including creating and editing custom forms and reports, creating and using macros, and creating application systems and switchboard modules. Emphasis will also be given to integration among various software applications. Prerequisite: Admission into the CIT program or consent of instructor.

CIT 243 COBOL II (3)

In this Level II Programming Language course, students code COBOL programs involving direct access data files, interactive screen design, table manipulation, multiple-level control breaks, top-down design, and modular construction. They create and execute a system of programs using structured COBOL techniques including proper documentation. Prerequisite: Admission into the CIT program, CIT 143, and MA 109, or consent of instructor.

CIT 245 Perl II: Perl and the Web (3)

A continuation of CIT 145, this Level II programming language course focuses on the use of the Perl programming language in a Web server environment. Topics will include ethics and the Web, advanced Perl programming constructs including objects and modules, Web form processing using Perl, security issues, and applications to e-commerce. Prerequisite: Admission to the CIT program, CIT 145 and CIT 150; or consent of instructor.

CIT 248 Visual Basic II (3)

Students build applications using Visual Basic, a Level II programming language. Application development is introduced with an emphasis on application design, record-handling routines, and database engine operations. Students work with objects from Microsoft Office, create ActiveX documents, and build Internet applications with these documents. Prerequisite: Admission into the CIT program and CIT 148 and MA 109, or consent of instructor.

CIT 249 Java II: Java and the Web (3)

A continuation of CIT 149, this Level II programming language course focuses on Java client/server programming for the internet. Topics will include interfacing with HyperText Markup Language (HTML) documents, applets, Java Database Connectivity (JDBC), servlets, and networking. Prerequisite: Admission into the CIT program, CIT 149 and CIT 150; or consent of instructor.

CIT 253 Data-Driven Web Technologies (3)

This course will provide students with the knowledge and skills to design, implement, and manage a database-driven web site. Topics will include the study of databases and web servers in e-commerce, transaction processing, and client-side and server-side Web scripting. Students will be involved in the creation of a database driven Web site. Prerequisite: Admission to the CIT program, CIT 150, CIT 170; or consent of instructor.

CIT 255 Internet Security and Server Administration (3)

The course provides students with an in-depth study of functions performed by web servers. Tasks performed by web administrators are discussed. Security risks unique to Internet services as well as solutions to these risks are presented. Students have hands-on experience with

setting up a web server and troubleshooting web server problems.
Prerequisite: Admission into the CIT program, CIT 253, CIT 212 OR CIT 218; or consent of instructor.

CIT 260 Network Hardware Installation and Troubleshooting (3)
This course is designed to provide students with the knowledge and skills necessary to design, install, configure, and troubleshoot cabling systems and equipment used to connect a local area network. Lecture: 2 hours, laboratory: 2 hours. Prerequisite: Admission into the CIT program and CIT 160, or consent of instructor.

CIT 261 Microsoft Windows Directory Services Administration (3)
This course provides students with the knowledge and skills necessary to install, configure, and administer Microsoft Windows Directory Services. The course also focuses on implementing Group Policy and understanding the Group Policy tasks required to centrally manage users and computers. This course will also help prepare students for exams in the Microsoft certification exam series. Prerequisites: Admission into the CIT program, CIT 212 and CIT 269; or consent of instructor.

CIT 262 Microsoft Windows Net Infrastructure (3)
This course provides students with the knowledge and skills necessary to install, configure, manage, and support a network infrastructure using a Microsoft Windows server operating system. This course will also help prepare students for exams in the Microsoft certification exam series. Prerequisites: Admission into the CIT program, CIT 212 and CIT 269; or consent of instructor.

CIT 263 Advanced Topics Microsoft Windows (1-6)
Concepts and/or skills from special areas of interest in Microsoft Windows operating systems are covered in this course. Topics vary from semester to semester at the discretion of the instructor. Lecture, lab: 1-6 hours. Prerequisites: Admission into the CIT program, CIT 212; or consent of instructor.

CIT 269 Internet Protocols (3)
This course provides students with the knowledge and skills to install, configure, manage, and troubleshoot internetworks using TCP/IP and its associated protocols. Prerequisites: Admission into the CIT program and CIT 160; or consent of instructor.

CIT 271 SQL II (3)
This course is designed to provide students with the knowledge and skills needed to write PL/SQL procedures. The procedures will incorporate SQL statements to create and manage PL/SQL program units and database triggers. Students will work in both the Procedure Builder and SQL*Plus environments. Students will use advanced features of PL/SQL to design and interface with the database and other applications. Prerequisite: Admission into the CIT program and CIT 171, or consent of instructor

CIT 280 Internship (3)
The student is provided on-the-job experience in computer information systems, requiring a minimum of 120 clock hours of appropriate experience approved by the faculty member (40 clock hours per credit). Learning contract, signed by the student, faculty member, and supervisor, is required. Course is offered on pass-fail basis only. Prerequisite: Admission into the CIT program and consent of instructor.

CIT 281 Routing and Switching (3)
This course provides students with the skills necessary to understand and apply concepts related to networking hardware. This course covers advanced TCP/IP concepts such as IP addressing and subnetting, beginning router configuration, routed and routing protocols. This is the second course in the Cisco Networking Academy Curriculum.

Prerequisite: Admission into the CIT program and CIT 160, or consent of instructor.

CIT 282 Advanced Routing and Switching (3)
This course is designed to provide students with the skills necessary to understand and apply advanced networking concepts. This course covers local area network (LAN) switching, virtual local area networks (VLANs), advanced network design concepts, advanced router configuration, and advanced network management projects. This is the third course in the Cisco Networking Academy Curriculum. Prerequisite: Admission into the CIT program, CIT 281; or consent of instructor.

CIT 283 Wide Area Network Design and Management (3)
This course is designed to provide students with the skills necessary to understand and apply advanced principles and applications in deploying networking hardware. This course covers WAN design, WAN connectivity protocols such as PPP, ISDN, and Frame Relay, as well as advanced network management projects. This is the fourth course in the Cisco Networking Academy Curriculum. Prerequisite: Admission into the CIT program, CIT 282; or consent of instructor.

CIT 290 Information Systems Design and Implementation (3)
This course enhances the student's knowledge of the key concepts, skills and techniques needed to become effective system professionals who work with others to create business-oriented computer information systems. Emphasis is placed on the project design, testing, implementation and support phases of the traditional systems development life cycles. Prerequisite: Admission into the CIT program and CIT 170 and CIT 220 and a Level I Programming Language; or consent of instructor.

CIT 292 Designing Network Solutions (3)
This capstone course covers the major responsibilities of a network systems manager. Topics include the overall planning, installation, evaluation, and maintenance of network systems components including hardware selection, vendor selection, and contract negotiations. Prerequisite: Admission into the CIT program and a Level I Network Technology Specialization sequence; or consent of instructor.

CIT 294 Seminar in Internet Technologies (3)
Students in this course will research, study and discuss current and emerging topics, issues and trends in Internet technologies. Formal class presentations as well as individual and/or group projects involving Internet technologies will be required. Prerequisite: Admission to the CIT program and CIT 253; or consent of instructor.

CIT 295 Independent Problems in Computer Information Systems (1-3)
A problem or special project, approved by the instructor, provides an independent study objective for Computer Information Systems students. This course may be repeated to a maximum of three credits hours. Prerequisite: Admission into the CIT program and consent of instructor.

CIT 299 Special Topics in CIT: (Topic) (1-3)
This course will deal with concepts and/or skills from special areas of interest in computer information systems. Topics vary from semester to semester at the discretion of the instructor. May be repeated with different topics to maximum of 6 credit hours. Lecture: 1-3 hours. Prerequisite: (variable) given when topic is identified, or consent of instructor.

CS 115 Introduction to Computer Programming (3)
This course teaches introductory skills in computer programming using an object-oriented computer programming language. There is an emphasis on both the principles and practice of computer programming.

Covers principles of problem solving by computer and requires completion of a number of programming assignments.

CS 215 Introduction to Program Design, Abstraction, and Problem Solving (4)

This course teaches introductory object-oriented problem solving, design, and programming engineering. An equally balanced effort will be devoted to the three main threads in the course: concepts, programming language skills, and rudiments of object-oriented programming and software engineering. Prerequisite: CS 115.

CS 216 Introduction to Software Engineering (3)

Software engineering topics to include: life cycles, metrics, requirements specifications, design methodologies, validation and verification, testing, reliability and project planning. Implementation of large programming projects using object-oriented design techniques and software tools in a modern development environment will be stressed. Prerequisite: CS 215.

COSMETOLOGY

COS 101 — Cosmetology I, 4-1 (18)

This course is designed to cultivate proper attitude and behavior patterns needed to create a successful cosmetologist. Kentucky statutes and regulations, safety, microbiology, sanitation, infection control, first aid treatment, structure and disorders of the nail are studied. Basic fundamentals of hair, skin and nail care, hair styling and shaping, manicures and pedicures, chemical and thermal services, and wigs are introduced. The student, in developing manipulative skills and practicing procedures, utilizes mannequins and classmates. After 300 hours, students begin to apply procedures on clients under the direct supervision of the instructor. Components: Laboratory, Lecture

COS 104 — Cosmetology II, 4-2 (10)

A study of basic chemistry emphasizes the physical and chemical properties of cosmetic materials. Electricity and light therapy are discussed with an in-depth study of anatomical structures affected by cosmetological services including disorders of the skin, scalp and hair. The instructor gives the students progressively more difficult assignments with close supervision. Components: Laboratory, Lecture

COS 106 — Cosmetology I, 7-1 (15)

This course is designed to cultivate proper attitude and behavior patterns needed to create a successful Cosmetologist. Kentucky Statutes and regulations, safety, bacteriology, sanitation, infection control, first aid treatment, structure and disorders of the nail are studied. An introduction to the basic fundamentals of hair, skin and nail care, hair styling and shaping, manicures and pedicures, chemical and thermal services, and wigs. The student in developing manipulative skills and practicing procedures utilizes mannequins and classmates. After 300 hours students begin to apply procedures on clients under the direct supervision of the instructor Components: Lecture Prerequisites: None

COS 108 — Cosmetology II, 7-2 (15)

A study of basic chemistry with emphasis placed on the physical and chemical properties of cosmetic materials. Electricity and light therapy are discussed and an in-depth study of anatomical structures affected by cosmetological services including disorders of the skin, scalp, hair, and nails. Components: Lecture Prerequisites: None

COS 110 — Cosmetology III, 4-3 (10)

Provides knowledge of the structure and function of the human body, including the interaction of all the body systems in maintaining homeostasis. All phases of beauty salon management are studied, including interacting with clients, co-workers and supervisors. Laboratory experience is advanced with performance expectations set at a higher level. Components: Laboratory, Lecture

COS 114 — Cosmetology I, 6-1 (14)

This course is designed to cultivate proper attitude and behavior patterns needed to create a successful Cosmetologist. Kentucky Statutes and regulations, safety, bacteriology, sanitation, infection control, first aid treatment, structure and disorders of the nail are studied. An introduction to the basic fundamentals of hair, skin and nail care, hair styling and shaping, manicures and pedicures, chemical and thermal services, and wigs. The student in developing manipulative skills and practicing procedures utilizes mannequins and classmates. After 300 hours student begin to apply procedures on clients under the direct supervision of the instructor. Components: Lecture Prerequisites: None

COS 116 — Cosmetology II, 6-2 (14)

A study of basic chemistry with emphasis placed on the physical and chemical properties of cosmetic materials. Electricity and light therapy are discussed and an in-depth study of anatomical structures affected by cosmetological services including disorders of the skin, scalp, hair, and nails. The instructor gives the students progressively more difficult assignments with close supervision. Components: Lecture Prerequisites: None

COS 122 — Cosmetology I, 5-1 (11)

This course is designed to cultivate proper attitude and behavior patterns needed to create a successful Cosmetologist. Kentucky Statutes and regulations, safety, bacteriology, sanitation, infection control, first aid treatment, structure and disorders of the nail are studied. An introduction to the basic fundamentals of hair, skin and nail care, hair styling and shaping, manicures and pedicures, chemical and thermal services, and wigs. The student in developing manipulative skills and practicing procedures utilizes mannequins and classmates. After 300 hours students begin to apply procedures on clients under the direct supervision of the instructor. Components: Lecture Prerequisites: None

COS 124 — Cosmetology II, 5-2 (11)

A study of basic chemistry with emphasis placed on the physical and chemical properties of cosmetic materials. Electricity and light therapy are discussed and an in-depth study of anatomical structures affected by cosmetological services including disorders of the skin, scalp, hair, and nails. The instructor gives the students progressively more difficult assignments with close supervision Components: Lecture Prerequisites: None

COS 126 — Cosmetology III, 5-3 (11)

Provides knowledge of the structure and function of the human body, including the interaction of all the body systems in maintaining homeostasis. All phases of beauty salon management are studied, including interacting with clients, co-workers and supervisors. Laboratory experience is advanced with performance expectations set at a higher level. Components: Lecture Prerequisites: None

COS 135 — Special Problems (1-8)

This is a course designed for a student who has demonstrated a need for a specific studies. *This course may be repeated for a maximum of 8 credit hours. Components: Laboratory Prerequisites: None

COS 150 — Basic Nail Technology, 4-1 (12)

Provides knowledge of the art and science of nail technology including the rules and regulations of the State Board of Cosmetology as they apply to the salon. Bacteriology and infection control through the practice of sanitation procedures. The study of the cells, structure of the hand, arm, nail and their diseases and disorders are included. The study of beauty salon management; including the practice of interacting with clients, co-workers, and supervisors. Students practice on classmates and progress to work on clients. Components: Lecture Prerequisites: None

COS 152 — Applied Nail Technology, 4-2 (10)

A continuation of nail technology is studied. A comprehensive written and practical exam will be given in preparation for state board licensure. Students are expected to exhibit a high performance level.

Components: Lecture
Prerequisites: None

COS 154 — Basic Nail Technology, 5-1 (13)

Provides knowledge of the art and science of nail technology including the rules and regulations of the State Board of Cosmetology as they apply to the salon. Bacteriology and infection control through the practice of sanitation procedures. The study of the cells, structure of the hand, arm, nail and their diseases and disorders are included. The study of beauty salon management; including the practice of interacting with clients, co-workers, and supervisors. Students practice on classmates and progress to work on clients. Components: Lecture Prerequisites: None

COS 156 — Applied Nail Technology, 5-2 (9)

A continuation of nail technology is studied. A comprehensive written and practical exam will be given in preparation for state board licensure. Students are expected to exhibit a high performance level.

Components: Lecture
Prerequisites: None

COS 158 — Basic Nail Tech, 6-1 (18)

Provides knowledge of the art and science of nail technology including the rules and regulations of the State Board of Cosmetology as they apply to the salon. Bacteriology and infection control through the practice of sanitation procedures. The study of the cells, structure of the hand, arm, nail and their diseases and disorders are included. The study of beauty salon management; including the practice of interacting with clients, co-workers, and supervisors. Student practice on classmates and progress to work on clients.

Components: Laboratory, Lecture
Prerequisites: None

COS 160 — Applied Nail Tech, 6-2 (18)

A continuation of nail technology is studied. A comprehensive written and practical exam will be given in preparation for state board licensure. Students are expected to exhibit a high performance level.

Components: Lecture
Prerequisites: None

COS 165 — Special Problems (1-8)

This course is designed for a student who has demonstrated a need for specific studies. *This course may be repeated for a maximum of 8 credit hours. Components: Laboratory Prerequisites: None

COS 200 — Student Teaching I, 7-1 (19)

This course is an introduction to teaching methods used in training cosmetology and nail technology students. This is inclusive of theory class methods of lecture, media use and teaching methods. This class is an introduction to training teachers for methods used to teach the practical application of learned skills. Components: Lecture Prerequisites: Cosmetologist's Licensure; One year work experience, apprentice license.

COS 201 — Cosmetology IV, 4-4 (8)

This course is designed for a total review of the cosmetology curriculum. A comprehensive written and practical exam is given in preparation for the State Board Licensure Exam. Students implement their own judgement of procedures and solutions to be used on clients with supervision. Components: Laboratory

COS 202 — Student Teaching II, 7-2 (16)

This course is to expand the apprentice instructor's ability to apply various methods used to train cosmetology and nail technology students.

This course gives preparatory work which enables the apprentice instructor to prepare for the Kentucky Board of Hairdressers instructor exam. Components: Lecture Prerequisites: COS 200

COS 206 — Cosmetology III, 7-3 (15)

Provides knowledge of the structure and function of the human body, including the interaction of all the body systems in maintaining homeostasis. All phases of beauty salon management are studied, including interacting with clients, co-workers and supervisors. Laboratory experience is advanced with performance expectations set at a higher level. Components: Laboratory, Lecture Prerequisites: None

COS 208 — Cosmetology IV, 7-4 (9)

This course is designed for a total review of the cosmetology curriculum. A comprehensive written and practical exam is given in preparation for the State Board Licensure exam. Students implement their own judgement of procedures and solutions to be used on clients with supervision. Components: Laboratory, Lecture Prerequisites: None

COS 210 — Student Teaching I, 5-1 (13)

This course is an introduction to teaching methods used in training cosmetology and nail technology students. This is inclusive of theory, class methods of lecture, media use and testing methods. This class is an introduction to training teachers for methods used to teach the practical application of learned skills. Components: Lecture Prerequisites: Cosmetologist's License; One year work experience, apprentice cosmetologists instructor's license

COS 212 — Student Teaching II, 5-2 (13)

This course continues to expand the apprentice instructor's ability to apply various methods used to train cosmetology and nail technology students. Components: Lecture Prerequisites: COS 210

COS 214 — Student Teaching III, 5-3 (9)

This course gives preparatory work which enables the apprentice instructor to prepare for the Kentucky Board of Hairdressers instructor exam. Components: Lecture Prerequisites: COS 210, COS 212

COS 215 — Special Problems (1-8)

This is a course designed for a student who has demonstrated a need for specific studies. *This course may be repeated for a maximum of 8 credit hours.

Components: Laboratory
Prerequisites: None

COS 218 — Cosmetology III, 6-3 (14)

Provides knowledge of the structure and function of the human body, including the interaction of all the body systems in maintaining homeostasis. All phases of beauty salon management are studied, including interacting with clients, co-workers and supervisors. Laboratory experience is advanced with performance expectations set at a higher level. Components: Laboratory, Lecture Prerequisites: None

COS 220 — Cosmetology IV, 6-4 (12)

This course is designed for a total review of the cosmetology curriculum. A comprehensive written and practical exam is given in preparation for the State Board Licensure exam. Students implement their own judgement of procedures and solutions to be used on clients with supervision. Components: Laboratory, Lecture Prerequisites: None

COS 228 — Cosmetology IV, 5-4 (11)

This course is designed for a total review of the cosmetology curriculum. A comprehensive written and practical exam is given in preparation for the State Board Licensure exam. Students implement their own judgement of procedures and solutions to be used on clients with

supervision. Components: Laboratory, Lecture Prerequisites: None

COS 230 — Advanced Cosmetology I (5)
This course is designed for a total review of the cosmetology curriculum. A comprehensive written and practical exam is given in preparation for the State Board Licensure exam. Students implement their own judgement of procedures and solutions to be used on clients with supervision. Components: Laboratory, Lecture Prerequisites: None

COS 232 — Advanced Cosmetology II (5)
This course is designed for a total review of the cosmetology curriculum. A comprehensive written and practical exam is given in preparation for the State Board Licensure exam. Students implement their own judgement of procedures and solutions to be used on clients with supervision. Components: Laboratory, Lecture Prerequisites: None

COS 235 — Special Problems II (1-3)
Designed for the student who has demonstrated need for individualized/specific instruction. Course may be repeated to a maximum of eight credit hours. Components: Lecture Lecture: Varies. Prerequisites: Consent of Instructor.

COS 1141 — Introduction to Cosmetology (3)
An introduction to professionalism and communication. Topics include Kentucky Statutes and Regulations, safety and decontamination. Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 1142 — Basics of Cosmetology (3)
Provides fundamental principles and skills of manicures, pedicures, facials, and scalp and hair care. Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 1143 — Principles of Hair Design (3)
Provides design elements and principles of hairstyling. Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 1144 — Cosmetology Skills A (1)
Focus on developing design elements of hair. Components: Laboratory Laboratory: 1 credit (45 contact hours).

COS 1145 — Hair Structure, Disorders and Diseases (1)
Focuses on the structure, diseases, and disorders of hair. Components: Lecture Lecture: 1 credit (15 contact hours).

COS 1146 — Cosmetology Skills B (1)
Provides basic principles of hair design and safety. Components: Laboratory Laboratory: 1 credit (45 contact hours).

COS 1147 — Nail Structure: Diseases and Disorders (1)
Focuses on nail structure, diseases and disorders. Components: Lecture Lecture: 1 credit (15 contact hours).

COS 1148 — Skin: Structure, Disorders and Diseases (1)
Focuses on skin structure, diseases and disorders. Components: Lecture Lecture: 1 credit (15 contact hours).

COS 1161 — Introduction to Cosmetic Chemistry (3)
Baic study of cosmetic chemistry. Prerequisites: ((COS 1141 and COS 1142 and COS 1143 and COS 1144 and COS 1145 and COS 1146 and COS 1147 and COS 1148) or COS 114 with a grade of C or greater.) Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 1162 — Chemical Services (3)
Basic chemical services. Prerequisites: ((COS 1141 and COS 1142 and COS 1143 and COS 1144 and COS 1145 and COS 1146 and COS 1147 and COS 1148) or COS 114 with a grade of C or greater.) Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 1163 — Massage Techniques (3)
Study of massage techniques. Prerequisites: ((COS 1141 and COS 1142 and COS 1143 and COS 1144 and COS 1145 and COS 1146 and COS 1147 and COS 1148) or COS 114 with a grade of C or greater.) Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 1164 — Cosmetic Techniques Lab (1)
Provides an opportunity to apply chemical services. Focuses on perms, color application and straightening of hair. Prerequisites: ((COS 1141 and COS 1142 and COS 1143 and COS 1144 and COS 1145 and COS 1146 and COS 1147 and COS 1148) or COS 114 with a grade of C or greater.) Components: Laboratory Laboratory: 1 credit (45 contact hours).

COS 1165 — Electricity & Light Therapy for Cosmetology (1)
Study of electricity and light therapy. Prerequisites: ((COS 1141 and COS 1142 and COS 1143 and COS 1144 and COS 1145 and COS 1146 and COS 1147 and COS 1148) or COS 114 with a grade of C or greater.) Components: Lecture Lecture: 1 credit (15 contact hours).

COS 1166 — Intermediate Hair Design Lab (1)
Continues the application of hair design theory and skills. Prerequisites: ((COS 1141 and COS 1142 and COS 1143 and COS 1144 and COS 1145 and COS 1146 and COS 1147 and COS 1148) or COS 114 with a grade of C or greater.) Components: Laboratory Laboratory: 1 credit (45 contact hours).

COS 1167 — Facials (1)
Theory of facials. Prerequisites: ((COS 1141 and COS 1142 and COS 1143 and COS 1144 and COS 1145 and COS 1146 and COS 1147 and COS 1148) or COS 114 with a grade of C or greater.) Components: Lecture Lecture: 1 credit (15 contact hours).

COS 1168 — Makeup and Hair Removal (1)
Provides the theoretical base for application of makeup. Hair removal principles and techniques. Prerequisites: ((COS 1141 and COS 1142 and COS 1143 and COS 1144 and COS 1145 and COS 1146 and COS 1147 and COS 1148) or COS 114 with a grade of C or greater.) Components: Lecture Lecture: 1 credit (15 contact hours).

COS 2181 — Anatomy for Cosmetology I (3)
Study of the structures and functions of the human body. Application of these studies in cosmetology services. Prerequisites: ((COS 1161 and COS 1162 and COS 1163 and COS 1164 and COS 1165 and COS 1166 and COS 1167 and COS 1168) or COS 116 with a grade of C or greater). Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 2182 — Anatomy for Cosmetology II (3)
Study of the interaction of all body systems and the maintenance of homeostasis. Prerequisites: ((COS 1161 and COS 1162 and COS 1163 and COS 1164 and COS 1165 and COS 1166 and COS 1167 and COS 1168) or COS 116 with a grade of C or greater). Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 2183 — Salon Management (3)
The study and application of all phases of salon management. Prerequisites: ((COS 1161 and COS 1162 and COS 1163 and COS 1164 and COS 1165 and COS 1166 and COS 1167 and COS 1168) or COS 116 with a grade of C or greater). Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 2184 — Intermediate Chemical Services Lab (1)
The study of the interaction of all the body systems in maintaining homeostasis. Application of these studies in cosmetology services. Prerequisites: ((COS 1161 and COS 1162 and COS 1163 and COS 1164 and COS 1165 and COS 1166 and COS 1167 and COS 1168) or COS 116 with a grade of C or greater). Components: Laboratory Laboratory: 1 credit (45 contact hours).

COS 2185 — Hair Enhancements (1)
Study of artificial hair. Prerequisites: ((COS 1161 and COS 1162 and COS 1163 and COS 1164 and COS 1165 and COS 1166 and COS 1167 and COS 1168) or COS 116 with a grade of C or greater). Components: Lecture Lecture: 1 credit (15 contact hours).

COS 2186 — Client Services Lab (1)
Provides the student with the opportunity to demonstrate client services. Emphasis is on communication and positive public relation techniques. Prerequisites: ((COS 1161 and COS 1162 and COS 1163 and COS 1164 and COS 1165 and COS 1166 and COS 1167 and COS 1168) or COS 116 with a grade of C or greater). Components: Laboratory Laboratory: 1 credit (45 contact hours).

COS 2187 — Intermediate Hair Shaping (1)
Hair shaping techniques for the intermediate practitioner. Components: Lecture Lecture: 1 credit (15 contact hours). Prerequisites: ((COS 1161 and COS 1162 and COS 1163 and COS 1164 and COS 1165 and COS 1166 and COS 1167 and COS 1168) or COS 116 with a grade of C or greater).

COS 2188 — Cosmetology Trends and Issues (1)
Trends and issues of cosmetology are covered. Prerequisites: ((COS 1161 and COS 1162 and COS 1163 and COS 1164 and COS 1165 and COS 1166 and COS 1167 and COS 1168) or COS 116 with a grade of C or greater). Components: Lecture Lecture: 1 credit (15 contact hours).

COS 2201 — Advanced Cosmetology I (3)
Processes and procedures for client services. Implementation of cosmetology processes and procedures on clients. Prerequisites: ((COS 2181 and COS 2182 and COS 2183 and COS 2184 and COS 2185 and COS 2186 and COS 2187 and COS 2188) or COS 218 with a grade of C or greater.) Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 2202 — Advanced Cosmetology II (3)
Implementation of cosmetology nail and skin care processes and procedures for clients. Prerequisites: ((COS 2181 and COS 2182 and COS 2183 and COS 2184 and COS 2185 and COS 2186 and COS 2187 and COS 2188) or COS 218 with a grade of C or greater.) Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 2203 — Advanced Lab I (1)
Practice all lab application techniques. Prerequisites: ((COS 2181 and COS 2182 and COS 2183 and COS 2184 and COS 2185 and COS 2186 and COS 2187 and COS 2188) or COS 218 with a grade of C or greater.) Components: Laboratory Laboratory: 1

COS 2204 — State Board Preparation (3)
Comprehensive written and practical exams in preparation for State Board Licensure exams. Prerequisites: ((COS 2181 and COS 2182 and COS 2183 and COS 2184 and COS 2185 and COS 2186 and COS 2187 and COS 2188) or COS 218 with a grade of C or greater.) Components: Laboratory, Lecture Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (90 contact hours).

COS 2205 — Advanced Lab II (1)
Practice all lab application techniques. Prerequisites: ((COS 2181 and COS 2182 and COS 2183 and COS 2184 and COS 2185 and COS 2186 and COS 2187 and COS 2188) or COS 218 with a grade of C or greater.) Components: Laboratory Laboratory: 1 credit (45 contact hours).

COS 2206 — Written Review (1)
Review of written/practical/procedures related to the State Board Examination. Prerequisites: ((COS 2181 and COS 2182 and COS 2183 and COS 2184 and COS 2185 and COS 2186 and COS 2187 and COS 2188) or COS 218 with a grade of C or greater.) Components: Laboratory Laboratory: 1 credit (45 contact hours).

COOPERATIVE EDUCATION

COE 199 Cooperative Education: (Associate in Applied Science Degree Program) (1-8)
Cooperative Education is a planned and evaluated work experience related to the student's educational objective for which the student receives both financial remuneration and academic credit. One credit hour is awarded for completion of 80 hours of approved work experience and for satisfactory completion of additional required activities. While the maximum amount of credit granted for Cooperative Education experience varies by curriculum, the amount may not exceed eight hours in an Associate in Applied Science Degree program. This course is available only to students enrolled in a Community College System Associate in Applied Science Degree Program which lists Cooperative Education as an approved course, completion of at least twelve credit hours in the program of study, marketable skills in the area in which the student is enrolled, and a minimum cumulative grade point average (G.P.A.) of 2.0.

CRIMINAL JUSTICE

CJ 101 Introduction to Criminal Justice (3)
Previously LEN 101
An introduction to the philosophical and historical background of law enforcement agencies, processes, purposes and functions. It includes an evaluation of law enforcement today, including current trends and career orientation. Prerequisites: None. 3 credit hours Lecture

CJ 102 Introduction to Corrections (3)
This course is an introduction to the processes, procedures and issues in modern corrections. Prerequisites: None. 3 credit hours Lecture

CJ 105 Police Supervision (3)
Previously LEN 105
This course gives students the basic understanding of the administrative and supervisory roles within a police department. Prerequisites: None. 3 credit hours Lecture

CJ 110 Principles of Asset Protection (3)
This course gives an introductory understanding to private security procedures. Prerequisites: None. 3 credit hours Lecture

- CJ 201 Introduction to Criminalistics (3)**
Designed to give the student a basic knowledge of crime scene protection, collection, preservation, and identification of evidence, including proper search, dusting latent prints, casting, fingerprint classification, and use of some laboratory in crime detection and prosecution. Lecture: 3 hours. 3 credit hours Lecture
- CJ 202 Issues and Ethics in Criminal Justice (3)**
This course gives an advanced understanding of the issues and problems within criminal justice. Prerequisite- sites: CJ 101. 3 credit hours Lecture
- CJ 203 Community Corrections/Probations & Parole (3)**
Previously LEN 207
Community Corrections, probation, and parole and philosophy and design of various programs throughout the country are addressed. Community-based punishments are contrasted and compared to incarceration in terms of goals, costs and perceived benefits. Alternatives to incarceration are discussed in areas such as electronic monitoring and house arrest, intensive supervision, probation and shock incarceration. Special needs offenders and requirements of their supervision are also examined. Prerequisites: CJ 101 or CJ 217. 3 credit hours Lecture
- CJ 204 Criminal Investigations (3)**
Previously LEN 204
Fundamentals of criminal investigation, crime scene search and recording, collection and preservation of physical evidence, scientific aids, MODUS operandi, sources of information, interviews and interrogation, follow-up, and case preparation. Prerequisites: None. 3 credit hours Lecture.
- CJ 208 Delinquency and the Juvenile Justice System (3)**
Previously LEN 208
An introduction to the processes, procedures, and issues in the modern juvenile justice system. Prerequisites: None. 3 credit hours Lecture
- CJ 210 Physical Security Technology & Systems (3)**
This class introduces facility security with the use of environmental design and integrated electronic technology (cameras, monitors, alarms). Prerequisites: None. 3 credit hours Lecture
- CJ 211 Liability & Legal Issues (3)**
This course provides an overview of legal aspects of security. The class focuses on civil and criminal law, liability of asset protection, use of force, false imprisonment, negligent security, invasion of privacy and many other pertinent security legal issues. Prerequisites: None. 3 credit hours Lecture
- CJ 215 Police Patrol (3)**
Previously LEN 104
This course gives a basic understanding of police operations and programs. Prerequisites: None. 3 credit hours Lecture
- CJ 216 Criminal Law (3)**
This course is a basic overview to criminal laws. Prerequisites: None. 3 credit hours Lecture
- CJ 217 Criminal Procedures (3)**
This course is an overview of criminal procedure laws. Prerequisites: None. 3 credit hours Lecture
- CJ 222 Prison & Jail Administration (3)**
Correctional procedures and administration are introduced. Course includes a historical perspective and a study of future trends. Prerequisites: None. 3 credit hours Lecture

CJ 290 Internship in Criminal Justice (3)
The Criminal Justice internship is designed to broaden students law enforcement education experience through appropriate criminal justice observation and work assignments. The experience will allow students to explore the various fields of interest in criminal justice field experience in an approved agency Prerequisites: Sophomore standing and completion of at least 12 semester hours of Criminal Justice work. 3 credit hours Lecture

CJ 299 Selected Topics in Law Enforcement (3)
Previously LEN 299
Recent trends and investigations in selected areas of law enforcement will be presented in seminar format. This course may be repeated to a maximum of 12 units min. 1. Prerequisites: Consent of instructor. 1 - 3 credit hours Lecture

DENTAL ASSISTING

DAS 120 — Dental Assisting I (5)
The preclinical application of dental assisting skills. Prerequisites: Admission to Dental Assisting/Dental Hygiene Integrated Program and completion of program pre-requisites - Dental Hygiene: ENG 101 and BSL 110; Dental Assisting: BSL 107 or BSL 109 or HEA 110 or BSL 110 and BSL 111.
Components: Laboratory, Lecture
Lecture: 3 (45 contact hours);
Laboratory: 2 credits (120 contact hours).

DAS 220 — Dental Assisting II (6)
The preclinical/clinical application of dental assisting skills from DAS 120. Prerequisites: (Completion of (DAS 120 and DAH 101 and DAH 121 and DAH 135 and DAH 224) with a grade C or better).
Components: Laboratory, Lecture
Lecture: 4 credits (60 contact hours);
Laboratory: 2 credits (120 contact hours).

DAS 251 — Clinical Externship I (4)
A fundamental clinical experience conducted in participating dental offices. Prerequisites: (Completion of (DAS 120 and DAH 101 and DAH 121 and DAH 224 and DAH 135) with a grade C or better).
Clinical: 4 credits (240 contact hours).
Components: Clinical

DENTAL HYGIENE

DH 120 Dental Hygiene I (5)
The basic assessment and clinical skills, related theory, professional role and responsibilities of the dental hygienist as a member of the dental health team are included. Lecture: 2.5 hours, laboratory: 10 hours.
Prerequisite: Completion of BSL 110 and BSL 111, both with a grade of C or better and acceptance into the Dental Hygiene Program.

DH121 Oral Biology I (3)
Oral histology and embryology, regional head and neck anatomy, and dental anatomy applicable to the practice of dental hygiene are included in this course. Lecture: 2 hours, laboratory: 4 hours. Prerequisite: Completion of BIO 137 and BIO 139, both with a grade of C or better and acceptance into the Dental Hygiene Program.

DH130 Dental Hygiene II (4)
This course is a continuation of DH120 which prepares the student to provide treatment that includes preventative and therapeutic procedures to promote and maintain oral health and assist the patient in achieving oral health goals. Lecture: 2 hours; laboratory: 8 hours. Prerequisite:

Completion of DH 120, DH 121 and BSL 214 (or BIO 226), all with a grade of C or better.

DH131 Oral Biology II (5)

The disciplines of general pathology, oral pathology, pharmacology, and therapeutics as related to dental hygiene care are covered in this course. Lecture: 4.5 hours, laboratory: 2 hours. Prerequisite: Completion of DH 120, DH 121 and BSL 214 (or BIO 226 all with a grade of C or better.

DH 135 Dental Radiology (3)

The theory and clinical practice of oral radiographic methods are presented in this course. Also included are: history and development of x-radiation; properties and uses of x-radiation; radiation hygiene; exposing, processing and mounting intraoral and extraoral radiographs; identification of radiographic anatomical landmarks; and advancements in computer imaging technology in dental radiology. Lecture: 2.5 hours, laboratory: 2 hours. Prerequisite: Completion of DH 120, DH 121 and BSL 214 (or BIO 226), all with a grade of C or better.

DH 136 Periodontics for the Dental Hygienist I (2)

This course focuses on the clinical, histological and radiographic differences between healthy and unhealthy periodontal tissues. Topics to be discussed also include etiology, risk factor assessment, pathogenesis and classification of periodontal diseases. Prerequisite: Completion of DH 120, DH 121 and BSL 214 (or BIO 226), all with a grade of C or better.

DH 220 Dental Hygiene III (4)

This course emphasizes the continued treatment of clinical patients. Treatment and management of dental patients with special needs are also addressed with attention to appropriate changes in dental treatment in response to a patient's medical condition. Lecture: 0 hours, laboratory: 16 hours. Prerequisite: Completion of DH130, DH 131, DH 135, DH 136 and NFS 101, all with a grade of C or better.

DH 222 Special Needs Patients (3)

This course focuses on the specific oral health care needs of persons with a variety of medical, disabling or mental conditions. Innovative approaches to serving populations with special oral health care needs are discussed. Special pharmacological considerations and treatment modifications are emphasized. Prerequisite: Completion of DH 130, DH 131, DH 135, DH 136 and NFS 101, all with a grade of C or better.

DH 224 Dental Materials (2)

The physical and chemical properties of dental materials and their application are introduced. Lecture: 1.5 hours, Lab 2 hrs. Prerequisite: Completion of DH130, DH 131, DH 135 and DH 136, all with a grade of C or better.

DH 226 Periodontics for the Dental Hygienist II (2)

This course provides for the continuation and expansion of the content of Periodontics for the Dental Hygienist I. The role of the dental hygienist in the recognition of systematic implications as related to periodontal diseases is emphasized. Current advancements in the management of patients with periodontal disease are emphasized. Supportive periodontal therapy will be discussed and current surgical therapies will be introduced. Lecture: 1.5 hours, laboratory: 2 hours. Prerequisite: Completion of DH 130, DH 131, DH 135, DH 136 and NFS 101, all with a grade of C or better.

DH 229 Local Anesthesia (2)

Common oral local anesthesia injection techniques and the related background information are addressed in this course. Subjects include: anatomic considerations, armamentarium, basic injection techniques, record keeping, neurophysiology, related pharmacology, patient evaluation, complications and contraindications. The pharmacology, administration and contraindications of Nitrous Oxide are also included.

This elective course satisfies the Kentucky State Dental Practice Act regarding "delegation of block and infiltration anesthesia and nitrous oxide analgesia to dental hygienists." Lecture: 1.25 hrs, laboratory: 3 hrs. Prerequisites: Completion of DH 130, DH131, DH 135 and DH 136 all with a grade of C or better.

DH230 Dental Hygiene IV (4)

This course focuses on the mastery of all dental hygiene clinical skills utilized in treating patients. Lecture: 0 hours, Laboratory: 16 hours. Prerequisite: Completion of DH 220, DH221, DH224, and DH 226, all with a grade of C or better.

DH 235 Principles of Practice (1)

This course covers the legal, ethical, and managerial aspects of dental hygiene practice. Prerequisite: Completion of DH 220, DH 222, DH 224 and DH 226, all with a grade of C or better.

DH 238 Community Dental Health (4)

Basic concepts in assessing community dental health needs are introduced. Planning, implementing and evaluating dental health programs, as well as current trends and issues in preventive dental health education, are discussed. Concepts related to reading and interpreting scientific literature are also included. Students must develop and present a community dental health project and scientific tabletop presentation. Prerequisite: Completion of DH 220, DH 222, DH 224 and DH 226, all with a grade of C or better.

DH299 Independent Study in Dental Hygiene (1-4)

A special project or experience, approved by an instructor, provides an objective for independent study for dental hygiene technology students. This course may be repeated to a maximum of six credit hours. Lecture: variable; Laboratory: Variable. Prerequisite: Consent of instructor.

DENTAL LABORATORY TECHNOLOGY

DLT 101 Dental Morphology (2)

The anatomical characteristics and dental terminology of the permanent human dentition are detailed. Other topics include dento-osseous structures, oral musculature, and the development of teeth. Waxing exercises of selected teeth are performed in the laboratory as a means of understanding tooth form and the development of manual dexterity. Lecture: 1 hr, laboratory: 3 hrs. Prerequisite: Admission into the DLT Program or consent of instructor.

DLT 111 Dental Materials I (2)

The major content of this course includes an introduction to the study of dental materials including basic concepts in chemistry. Emphasis is placed on the chemical and physical properties of gypsum, resin, and wax used in dentistry. Basic manipulation of these materials is included in order to prepare the student for future use in the dental laboratory. Lecture: 2 hrs. Prerequisites: Admission into the DLT Program or consent of instructor.

DLT 112 Dental Materials II (2)

This course emphasizes the metallurgy of dental alloys including the mechanism of crystallization, strain hardening and the chemical process of corrosion. Materials associated with fabricating metal prostheses are studied and include impression materials, cast alloys and wrought alloys. Hazard and infection control procedures in the dental laboratory are presented as well as basic study of applicable physics and unit conversion. Lecture: 2hrs. Prerequisite: DLT 111 or consent of instructor.

DLT 121 Complete Dentures I (2)

The basic principles of complete denture prosthodontics is presented including the fundamentals of arranging and contouring artificial

dentures. Identification of oral landmarks and changes that occur in the edentulous patient are discussed. Emphasis is placed on identifying the purpose and use of custom trays, baseplates and occlusion rims. Laboratory procedures include fabricating custom trays, baseplates, occlusion rims, and a complete set of dentures. Lecture: 1 hour; laboratory: 3 hours. Admission into the DLT Program.

DLT 122 Complete Dentures II (2)

Advanced principles of complete denture prosthodontics are presented including balanced, monoplane and lingualized occlusion. Emphasis is also placed on the considerations in the oral cavity that effect the success of removable prosthodontic treatment. Laboratory procedures include denture repairs, selective grinding and fabricating complete dentures. Lecture: 1 hrs, laboratory: 3 hrs. Prerequisite: DLT 121.

DLT 131 Removable Partial Dentures I (2)

The basic principles of removable partial denture prosthodontics are presented. Emphasis is placed on the fabrication procedures and understanding of the basics of survey and design. Detailed information about the various major and minor connectors is discussed as well as learning the Kennedy Classification system. Laboratory procedures include fabricating two removable partial dentures including the attachment of artificial denture teeth. Lecture: 1 hour, laboratory: 3 hours. Admission into the DLT Program.

DLT 132 Removable Partial Dentures II (2)

Advanced principles of removable partial denture prosthodontics is presented with emphasis on design principles. Detailed information about direct retainers, indirect retainers, rests and bases is discussed. Laboratory procedures involve fabricating three removable partial dentures including the attachment of artificial denture teeth. Lecture: 1 hour, laboratory: 3 hours. Prerequisite: DLT 131.

DLT 142 Occlusion (2)

Theories of occlusion; interarch and intraarch relationships; the temporomandibular joint and its movements; articulators, interocclusal records, and face-bow transfer; occlusal schemes; and restorative considerations in occlusal therapy are discussed and/or put to practical application in this course. Lecture: 1 hr, laboratory: 3 hrs. Prerequisite: Admission into the Dental Laboratory Program.

DLT 151 Fixed Prosthodontics I (2)

The basic principles of crown and bridge fixed prosthodontics are presented including the fabrication of both single and multi-unit full metal restorations. Emphasis is placed on preparing and evaluating working casts, waxing anatomical tooth patterns, spruing, investing, burnout, casting, and polishing. Additional laboratory procedures include fabricating restorations on various types of articulators, developing functional occlusion, and soldering. Lecture: 1 hour; laboratory: 3 hours. Admission into the DLT Program.

DLT 152 Fixed Prosthodontics II (2)

The basic principles of metal ceramic fixed prosthodontics are presented including the fabrication of both single and multi-unit restorations. Emphasis is placed on esthetic restorations, preparing and evaluating working casts, waxing substructure patterns, spruing, investing, burnout, casting, and polishing. Additional laboratory procedures include applying opaque, dentin, and enamel ceramic powders and contouring fired porcelain. Lecture: 1 hour; laboratory: 3 hours. Prerequisite: DLT 151.

DLT 261 Applied Laboratory Techniques (8)

Students fabricate a more complex variety of dental prostheses in four specialty areas: complete denture prosthodontics, removable partial denture prosthodontics, dental ceramics, and fixed prosthodontics (crown and bridge). Curriculum content includes reinforcement of techniques and procedures that are taught in the 100 level DN courses. Emphasis will be placed on management of laboratory time and project load to

improve the quantity and quality of laboratory work. Lecture: 2 hours, laboratory: 18 hours. Prerequisite: DLT 122, DLT 132, DLT 142, and DLT 152.

DLT 262 Advanced Specialty Laboratory Techniques (8)

Students fabricate dental prostheses at a more advanced level in at least one of the following specialty areas: complete denture prosthodontics, dental ceramics, fixed prosthodontics (crown and bridge), orthodontic appliances, or removable partial denture prosthodontics. Emphasis is placed on incorporating productivity, flow time, and quality requirements. Laboratory experience is provided in the classroom or selected externships in local dental laboratories. Lecture: 2 hours, laboratory: 18 hours. Prerequisite: DLT 261.

DLT 281 Orthodontic Laboratory Techniques (2)

Fixed, removable, active and passive orthodontic appliances are studied in this course. Principles of tooth movement, classifications of malocclusion, orthodontic materials and their manipulation, orthodontic study models, and functional appliances will be discussed. Lecture: 1 hour, laboratory: 3 hours. Prerequisite: DLT 122.

DLT 291 Dental Laboratory Management, History and Ethics (2)

Dental laboratory management, business plans, financial planning, history of dentistry and dental technology, and those ethics and laws which are specific to dentistry will be presented. Lecture: 2 hours. Prerequisite: Completion of all 100 level DLT courses.

ECONOMICS

ECO 101 Contemporary Economic Issues (3)

A basic course in the analysis of contemporary economic issues with emphasis on current economic topics such as inflation, poverty and affluence, urban congestion, and environmental pollution. (Credit will not be given for this course to students who have received prior credit in ECO 201 and/or 202, and/or ECO 260 and/or 261.) V

ECO 201 Principles of Economics I (3)

The study of the allocation of scarce resources from the viewpoint of individual economic units. Topics include household and firm behavior, competitive pricing of goods and resources, and monopoly power. (Credit will not be given for this course to students who have received credit in ECO 261.) V

ECO 202 Principles of Economics II (3)

A study of how society's needs are satisfied with the limited resources available. Topics include contemporary issues such as inflation, unemployment, economic growth, international dependencies, and how public policy deals with them. (Credit will not be given for this course to students who have received credit in ECO 260.) Prerequisite: ECO 201 or equivalent. V

EDUCATIONAL AND COUNSELING PSYCHOLOGY

EDP 202 Human Development and Learning (3)

Theories and concepts of human development, learning, and motivation are presented and applied to interpreting and explaining human behavior and interaction in relation to teaching across the developmental span from early childhood to adulthood. A field experience in a school or other educational agency is a required and basic part of the course. Prerequisite: PSY 100.

EDP 203 Teaching Exceptional Learners in Regular Classrooms (3)

An introduction to the characteristics and instructional needs of exceptional learners is presented with an overview of principles, procedures methods, and material for adapting education program

to accommodate the integration of exceptional children in regular classrooms, when appropriate. A field experience in a school or other educational agency is a required and basic part of the course. Lecture: 3 hours, laboratory: 2 hours for a maximum of six weeks. Prerequisite: Successful completion of EDP 202 with an earned grade of C or higher.

DIESEL TECHNOLOGY

DIT 100 — Mechanical Concepts (3)

This course introduces the student to the basic fundamentals of precision measurement and its application to the industrial setting.

Components: Lecture

Prerequisites: None

DIT 101 — Basic Equipment Operation for Mechanics (3)

This course is designed to give diesel technology students, who are seeking the construction equipment mechanic track, the basic operation of various types of heavy equipment. This class gives the student the skills needed to operate heavy equipment to the level that allows them to diagnose mechanical and other operational problems of the equipment.

*** (This course is a prerequisite for the Construction Equipment Technician diploma program at Hazard Technical College and CVTC - Middlesboro Campus.) (This course is also a prerequisite to the Heavy Equipment Operation program at Hazard Technical College.)

Components: Laboratory

Prerequisites: None

DIT 103 — Preventive Maintenance Lab (1)

Instruction on preventive maintenance practices, scheduled procedures, documents, and D.O.T. required record system and on determining the needs for repair. Components: Laboratory
Laboratory: 1 credit (45 contact hours).

DIT 110 — Introduction To Diesel Engines (3)

Fundamental concepts of the operation of two- and four-stroke diesel and gasoline engines. Topics include basic engine components and their functions, engine performance terminology, two- and four-stroke operation, combustion principles, and engine disassembly with basic hand tools. Co-requisite: DIT 111. Components: Lecture
Lecture: 3 credits (45 contact hours).

DIT 111 — Introduction To Diesel Engines Lab (2)

Practical experience of concepts from DIT 110. Co-requisite: DIT 110. Components: Laboratory
Laboratory: 2 credits (90 contact hours).

DIT 112 — Diesel Engine Repair (3)

Students learn to take a disassembled engine and evaluate the condition of each component. They identify the use or function of each component of the engine. Topics include cylinder block and components, cylinder heads and valve train components, and engine lubrication systems.

Components: Lecture
Prerequisites: DIT 110, DIT 111 or ADX 150, ADX 151
Corequisites: DIT 113

DIT 113 — Diesel Engine Repair Lab (2)

Practical experience of concepts from DIT 112. Co-requisite: DIT 112. Components: Laboratory
Laboratory: 2 credits (90 contact hours).

DIT 120 — Introduction to Maintenance Welding (3)

This course provides training in the identification, inspection and maintenance of welding electrodes. Training will be given in the principles and processes of welding plates and pipes. Instruction will be given in lab safety and basic oxy fuel cutting.

Components: Lecture

Prerequisites: None

DIT 121 — Introduction to Maintenance Welding Lab (2)

This course provides laboratory experiences in which students acquire the manipulative skills needed to weld surface, fillet, and groove welds in flat and horizontal positions. The studies will perform oxy fuel cutting operations.

Components: Laboratory

Prerequisites: None

DIT 122 — Undercarriage (3)

Students learn the theory and operation of undercarriage systems and their components. These components include endless track, roller track, roller frames, idlers, roller supports, and mainframes.

Components: Lecture

Corequisites: DIT 123

DIT 123 — Undercarriage Lab (2)

This course provides opportunities to troubleshoot and repair some parts of undercarriage systems and their components. These components include endless track, roller track, roller frames, idlers, roller supports, and mainframes.

Components: Laboratory

Corequisites: DIT 122

DIT 140 — Hydraulics (3)

Theory and operation of a complete hydraulic system. Co-requisites: DIT 141. Components: Lecture
Lecture: 3 credits (45 contact hours).

DIT 141 — Hydraulics Lab (2)

Practical application of concepts taught in DIT 140. Co-requisites: DIT 140. Components: Laboratory
Laboratory: 2 credits (90 contact hours).

DIT 150 — Power Trains (3)

Theory and principles of power train systems, diagnosis and repair of components. Co-requisites: DIT 151.

Components: Lecture

Lecture: 3 credits (45 contact hours).

DIT 151 — Power Trains Lab (2)

Practical application of concepts taught in DIT 150. Co-requisite: DIT 150. Components: Laboratory
Laboratory: 2 credits (90 contact hours).

DIT 152 — Powertrain for Construction Equipment (3)

Students learn the theory and principles of the operation of power transmissions. They learn to diagnose and repair power train units including torque connectors, standard and automatic transmissions.

Components: Lecture

Prerequisites: None

DIT 153 — Powertrain for Construction Equipment Lab (2)

Students troubleshoot, disassemble, evaluate parts and reassemble components of a power train system, such as torque connectors, standard and automatic transmissions, and drive lines.

Components: Laboratory

Prerequisites: None

DIT 160 — Steering and Suspension (3)

Theory and operation of steering and suspension systems. Co-requisites: DIT 161. Components: Lecture

Lecture: 3 credits (45 contact hours).

DIT 161 — Steering and Suspension Lab (2)

Practical application of concepts taught in DIT 160. Co-requisites: DIT 160. Components: Laboratory
Laboratory: 2 credits (90 contact hours).

DIT 180 — Brakes (3)
Theory and operation of air and hydraulic braking. Co-requisite: DIT 181. Components: Lecture

DIT 181 — Brakes Lab (2)
Practical application of concepts taught in DIT 180. Co-requisite: DIT 180. Components: Laboratory
Laboratory: 2 credits (90 contact hours).

DIT 190 — Electrical Systems for Diesel Equipment (3)
The theory and operation of wiring circuits and battery service. Components: Lecture. Lecture: 3 credits (45 contact hours). Prerequisites: DIT 102 with a grade of C or better. Co-requisite: DIT 191.

DIT 191 — Electrical Systems for Diesel Equipment Lab(2)
Practical application of concepts taught in DIT 190. Co-requisite: DIT 190. Components: Laboratory
Laboratory: 2 credits (90 contact hours).

DIT 193 — Special Problems I (1)
A course designed for the student who has demonstrated special needs. Components: Laboratory. Prerequisites: Permission of Instructor

DIT 195 — Special Problems II (2)
A course designed for the student who has demonstrated special needs. Components: Laboratory
Prerequisites: Permission of Instructor

DIT 197 — Special Problems III (3)
A course designed for the student who has demonstrated special needs. Components: Laboratory
Prerequisites: Permission of Instructor

DIT 198 — Practicum (1)
The Practicum provides supervised on-the-job work experience related to the student's education objectives. Students participating in the Practicum do not receive compensation. Components: Practicum
Prerequisites: Permission of Instructor

DIT 199 — Cooperative Education (1)
The cooperative education program provides supervised on-the-job work experience related to the students education objectives. Students participating in the Cooperative Education Program normally receive compensation. Components: Co-Op
Prerequisites: Permission of Instructor

DIT 298 — Practicum
Hours: 2
Course ID: 001299
The Practicum provides supervised on-the-job work experience related to the students education objectives. Students participating in the Practicum do not receive compensation. Components: Practicum
Prerequisites: Permission of Instructor

DIT 299 — Cooperative Education II (2)
The coop provides supervised on-the-job work experience related to the students education objectives. Students participating in the Cooperative Education Program normally receive compensation. Components: Co-Op. Prerequisites: Permission of Instructor

HUMAN SERVICES: DIRECT SUPPORT

HS 101 — Human Services Survey (3)
Community human service agencies are examined regarding their

organization, service delivery system, staffing patterns, and funding sources. The origin and development of the social welfare system are explored as well as social welfare policy. Components: Lecture
Lecture: 3 credits (45 contact hours).

HS 102 — Values of Human Services in a Contemporary Society (3)
The values and ethics of human service professions are examined. A personal philosophy of client intervention is encouraged, including the development of a professional value base, achieved through the examination of major social problems and issues. Components: Lecture
Lecture: 3 credits (45 contact hours).

HS 103 — Theories and Techniques in Human Services (3)
Philosophies, theories for intervention, and the problem-solving process will be introduced. Emphasis will be placed on the development of a skill base used in counseling techniques and client intervention. Interpersonal relationship skills will be enhanced through knowledge of communication techniques. Activities will be provided in which the student will apply this knowledge and these skills. Components: Lecture
Lecture: 3 credits (45 contact hours). Prerequisites: HS 101 and HS 102 or consent of coordinator.

HS 104 — Group Dynamics for Human Services (3)
Based on various theoretical models, group techniques in clinical or agency settings are covered with emphasis on the leadership role, phases of group development, and interaction within the group. Components: Lecture
Lecture: 3 credits (45 contact hours).
Prerequisites: HS 103 or consent of coordinator.

HS 210 — Drugs, Society, & Human Behavior (3)
Study of the nature and progression of chemical abuse and dependency, and effects on the individual, family, and society. Includes strategies for prevention, intervention, and treatment. Components: Lecture
Lecture: 3 credits (45 contact hours).

HS 225 — Application of Assistive Technology for Persons with Disabilities (3)
Students are provided information and practice in working with children and adults with disabilities. Students are prepared for careers in direct services working with individuals with disabilities, with a particular emphasis on developmental disabilities and mental retardation. Components: Lecture
Lecture: 3 credits (45 contact hours).

HS 250 — Clinical Practice in Human Services (4)
The application of principles and skills previously learned in the Human Services courses are practiced in community agencies. Components: Clinical, Lecture
Lecture: 1 credit (15 contact hour); Clinical: 3 credits (180 contact hours).
Prerequisites: HS 104 or consent of coordinator.

HS 265 — Working with Disabilities in Human Services (3)
An in-depth study of the coordination and provision of services and supports for individuals with disabilities in community settings, including the provision of community-referenced instruction, vocational instruction in community settings, school-to-work transition planning, integrated recreation/leisure opportunities, and personal management/independent living skill training and supports. The course emphasizes developmental disabilities and mental retardation. Components: Lecture

Lecture: 3 credits (45 contact hours).

HS 299 — Special Topics in Human Services: (Topic) (3)

An in-depth knowledge of a selected topic in human services is the goal of this course. The topic of study may be the student's choice per coordinator/instructor's approval or an issue or topic developed by an instructor for course presentation.

Components: Lecture

Lecture: 3 credits (45 contact hours).

MIT: ENGINEERING TECHNOLOGY

ET 102 — Blueprint Reading (2)

A comprehensive study of current drafting standards and blueprint reading techniques are included. Topics include standard lines and symbols, sketching techniques, orthographic projection, auxiliary views, detail and assembly drawings, dimensions, tolerances, sectional views, title block information, machining, specifications, and specialized forms of engineering drawings.

Components: Lecture

Lecture: 2 hours.

ET 106 — Mechanical Engineering Graphics II (2)

Technical sketching and working drawings of machines and machine parts. Components: Laboratory

Laboratory: 6 hours.

ET 107 — Computer Applications for Technicians (4)

An introduction to computer applications commonly used in technical occupations. Circuit analysis, computational, analytical, and other software packages are covered in this course.

Components: Laboratory, Lecture

Lecture: 1 hour; Laboratory 3 hours. Prereq. or Concurrent: ET 110 or consent of instructor.

Attributes: Computer Literacy

ET 110 — Electrical Circuits I (4)

Basic DC circuits, including circuit analysis techniques, are covered in this course. Design, construction and troubleshooting of simple DC circuits are emphasized in laboratory exercises. Introductory magnetism and AC principles are also discussed.

Components: Laboratory, Lecture

Lecture: 3 hours; Laboratory: 2 hours. Prereq.: MT 150 or MT 160, or consent of instructor.

ET 111 — Electrical Circuits II (4)

Alternating current and direct current circuits are covered. Emphasis is on impedance, reactance, power and electrical energy, electrical measurement instruments, and circuit analysis.

Components: Laboratory, Lecture

Lecture: 3 hours;

Laboratory: 2 hours. Prerequisites: ET 110 or consent of instructor.

ET 112 — Digital Logic Circuits (4)

Logic methods are introduced. Topics include: Boolean algebra, combinational logic theory, sequential circuits, number systems and codes, small and medium scale integrated circuits logic families, design and troubleshooting of digital logic circuits, and interfacing techniques.

Components: Laboratory, Lecture

Lecture: 3 hours;

Laboratory: 2 hours. Prerequisites: Consent of instructor.

ET 113 — Laser Optics Components (3)

The student will be introduced to an overview of the components commonly found in lasers and their associated systems. Emphasis will

be placed on using calculators to solve basic problems associated with these components and building the student's intuition on the effects of individual components and how they fit into the system. The lab will be used to verify findings in class and to teach handling, mounting, cleaning, and alignment of optical components.

Components: Laboratory, Lecture

Lecture: 2 hours;

Laboratory: 2 hours. Prerequisites: MT 120 or equivalent.

ET 115 — Manufacturing I, Shop and Tools (2)

A basic course in the use of standard machine and measuring tools and the attendant shop theory.

Components: Laboratory, Lecture

Lecture: 1 hour;

Laboratory: 2 hours. Prerequisites: Engineering graphics, or consent of instructor.

ET 118 — Manufacturing III, Computer Numerical Control (3)

An introduction to computer numerical control technology, covering programming and metal removal techniques. Topics of study include: controllable machine components, tools, programmable functions, control system components, physics of metal cutting, metal cutting data, coordinate systems, NC related dimensioning, and CNC programming.

Components: Laboratory, Lecture

Lecture: 2 hours;

Laboratory: 2 hours. Prerequisites: ME 105 or consent of instructor.

ET 119 — Introduction to Computer-Aided Manufacturing (3)

A second course in computer numerical control technology, utilizes a CAM software package to introduce computer aided programming of CNC machines. Primary emphasis is on 2 1/2 dimension milling applications. Topics include: feature modeling, groups and patterns, tooling, feeds, speeds, coordinate systems, multiple fixtures, and advanced modeling techniques.

Components: Laboratory, Lecture

Lecture: 2 hours;

Laboratory: 2 hours. Prerequisites: ET 118 or consent of instructor.

ET 122 — Mechanical Power Transmission Systems (3)

A lecture/demonstration class in industrial mechanical systems and devices, which are commonly associated with Millwright and Industrial Maintenance functions. Topics include: belt drives, gear drives, chain drives, couplings, packings/seals, bearings, mechanical fasteners, pipe fittings, pumps, and valves.

Components: Lecture

Lecture: 3 hours.

ET 123 — Mining Electricity I (4)

An elementary lecture-demonstration course designed primarily for the mining technology student. Topics included in this course are: basic electricity, direct current circuits, impedances, reactances, power, electrical energy, permissibility, underground and surface law, solid-state, and national electrical code. Emphasis is placed on electrical measurement, instruments, and applications. The student is prepared to take the mine electrical certification exam administered by the Kentucky Department of Mines and Minerals.

Components: Lecture

Lecture: 4 hours.

ET 124 — Mechanical Power Transmission Systems Lab (1)

A lab course in mechanical systems and devices common to the Millwright and Industrial Maintenance trades. Topics include: belt drives, gear drives, chain drives, couplings, packings and seals, bearings, mechanical fasteners, pipe fittings, pumps, and valves.

Components: Laboratory

Laboratory: 2 hours.

Prerequisites: ET 122 or concurrent.

ET 154 — Spoil Management (4)

Applications of the principles of conservation in planning, use, and management of spoil material. Intensive study of the physical and chemical properties in relation to vegetative survival and spoil amendments.

Components: Laboratory, Lecture

Lecture: 3 hours;

Laboratory: 2 hours. Prerequisites: CHM 100.

ET 155 — Elements of Underground and Surface Mining (3)

The student participates in an introductory study of mining methods, operations, and procedures. Miners' rights, work environments, health and safety standards, reclamation procedures, transportation and communication, emergencies and procedures, mine gases and instruments, electrical hazards, and accident prevention programs are among the topics covered.

Components: Lecture

Lecture: 3 hours.

ET 201 — Statics and Strength of Materials (4)

Static equilibrium involving forces, moments, couples, and equivalent systems are studied. Stresses, strains and deflections associated with trusses, frames, beams, columns, and joints are explored. These devices are subjected to various loadings and environments, and are made of standard construction materials.

Components: Laboratory, Lecture

Lecture: 3 hours;

Laboratory: 3 hours. Prerequisites: MT 150 and MT 155 or MA 110 or consent of instructor.

ET 210 — Thermodynamic Applications (3)

An introduction to thermodynamic laws and their application to devices operating on the basis of thermodynamic principles. Commonly used cycles and fluids are identified.

Components: Lecture

Lecture: 3 hours. Prerequisites: PHY 211 or consent of instructor.

ET 232 — Computer Software Maintenance (3)

The maintenance of the computer workstation software, including set-up of workstation for network and Internet access is introduced. Complete configuration of an operating system is covered. The logical principles of troubleshooting is a focal point.

Components: Laboratory, Lecture

Lecture: 2 hours;

Laboratory: 2 hours. Prerequisites: Computer literacy course or consent of instructor.

ET 234 — Computer Hardware Maintenance (3)

Introduction to the maintenance of computer hardware, including set-up of workstation for network and Internet access. Internal addressing, architecture, interrupts, complete PC construction and basic troubleshooting will be focal points. This course will help prepare students to take standard industry certification tests.

Components: Laboratory, Lecture

Lecture: 2 hours; Laboratory 2 hours.

Prerequisites: Computer literacy course or consent of instructor.

ET 241 — Electronics I (4)

Semiconductor devices are studied in this course. Emphasis is on design, construction, and troubleshooting of diode and transistor circuits, amplifiers, and power supplies.

Components: Laboratory, Lecture

Lecture: 3 hours;

Laboratory: 2 hours. Prereq. or concurrent: ET 111 or consent of instructor.

EDUCATION

ED 101 — Orientation to Education (3)

Introduces the roles and responsibilities of both the paraeducator and the classroom teacher. Recognizing the importance of communication and teamwork in the instructional environment, the course covers legal and ethical issues that might be encountered in the classroom, instructional support strategies that might be implemented by paraeducators, universal health and safety procedures. The student will be introduced to the design of learning environments that encourage active participation in individual and group settings. (10 hours field work required.)

Components: Lecture

Lecture: 3 credits (45 contact hours).

ED 102 — Child and Adolescent Development (3)

Acquaints the student with the cognitive, social, moral, language, emotional, and physical development of children and adolescents. Students will develop an understanding of how these theories are applied in the modern classroom. (10 hours field work required.)

Components: Lecture

Lecture: 3 credits (45 contact hours).

ED 103 — Introduction to Special Education (3)

An introductory course designed for all paraeducators. The student will be introduced to methods on the creation of a learning environment, basic classroom management theories, key principles and practices of special education, and the similarities and differences of individuals with and without exceptional learning needs. (10 hours field work required.)

Components: Lecture

Lecture: 3 credits (45 contact hours).

ED 104 — Introduction to Behavior Management (3)

Introduces the student to strategies of classroom and behavior management that create a positive learning environment encouraging student self-advocacy, increased independence, and improved communication skills. This course will introduce behavior management strategies that encourage respect and value individual differences among children, youth, and adults and how consequences should be used to motivate positive student behavior. Chronic behavior problems will also be addressed. (10 hours field work).

Components: Lecture

Lecture: 3 credits (45 contact hours).

ED 105 — Practical Experiences for the Paraeducator (3)

A capstone course for the paraeducator certificate and a component of the Teacher Associate option of the Education AAS degree. Students will complete their certificate portfolio in preparation for the Kentucky Paraeducator Assessment or Kentucky Department of Education approved alternative assessment. (150 hours fieldwork).

Components: Co-Op, Lecture, Practicum

Lecture: 1 credit (15 contact hours); Practicum/Co-op: 2 credits (150 contact hours).

Prerequisites: ED 101 and ED 102 and ED 103 and ED 104 or Consent of Coordinator.

ED 201 — An Introduction to American Education (3)

A practical introduction to the teaching profession is presented for those considering a career in education. Topics include teaching as a profession, major educational philosophies, school reform, trends and issues in education, curriculum, and instruction. A field experience consisting of a minimum of 15 clock hours in approved educational activities is required.

Components: Lecture

Lecture: 3 hours. Prerequisites: ENG 101 or consent of instructor.

ED 203 — Technology In the Classroom (3)

Provides the student with a fundamental understanding of the uses of microcomputers in instruction and instructional management.

Students will explore and experience methods of using multi-media in the classroom, designing web pages, and optimizing the use of current technology to enhance their instructional ability as well as classroom organization.

Components: Lecture

Lecture: 3 credits (45 contact hours). Prerequisites: CIS 100 or equivalent.

ED 240 — Elementary and Middle School Literature (3)

A survey of both traditional and modern literature for children and adolescents. Emphasis is on selection, evaluation, storytelling, and the use of multimedia materials and the media to meet the literary needs and interests of children from preschool through middle school. Fifteen hours of field observation are required.

Components: Lecture

Lecture: 3 hours.

ED 270 — Elementary School Literature (3)

A survey of traditional and modern literature for elementary school children. Emphasis is on selection, evaluation, storytelling, and use of multimedia materials and the media to meet the literary needs and interests of children. A field observation requirement of a minimum of fifteen clock hours in an approved educational setting is required.

Components: Lecture

Lecture: 3 credits (45 contact hours). Prerequisites: ENG 101 and ENG 102.

ED 280 — Education Externship/Co-Op (3)

A capstone/portfolio course for the AAS degree in Education, designed to integrate program competencies and curriculum to create a cumulative portfolio which will demonstrate their professional abilities. Students in the teacher preparation option will prepare to take the Praxis I assessment. (150 hours field work).

Components: Co-Op, Lecture, Practicum

Lecture: 1 credit (15 contact hours); Practicum/Co-op: 2 credits (150 contact hours).

Prerequisites: All program courses or Consent of Coordinator.

ED 299 — Selected Topics in Education (3)

Various education topics, issues and trends will be addressed. Topics may vary from semester to semester at the discretion of the instructors; course may be repeated with different topics to a maximum of six credit hours.

Components: Lecture

Lecture: varies.

Prerequisites: Permission of instructor.

ELECTRICAL TECHNOLOGY: MIT

ETT 101 — Survey of Electricity (4)

This course is a one-semester overview of industrial electricity for students majoring in areas other than electricity. Topics include: AC and DC circuits, safety, transformers, generators, motors, electronic circuits, three phase, grounding, and industrial controls.

Components: Laboratory, Lecture

Lecture: 3 hours;

Laboratory: 2 hours.

ETT 110 — Voice & Data Installer Level I (4)

A comprehensive orientation to the telecommunication industry. Provides entry-level telecommunications cabling installers with the background, knowledge, and basic skills needed to function effectively on the job. Designed for those with little or no telecommunication installation experience.

Components: Laboratory, Lecture

Lecture: 4 credits (75 contact hours).

Prerequisites: Basic physics/electricity courses are recommended but not required.

ETT 112 — Basic Electrical Theory: Telenetworking (3)

Introduces the theory of electricity, magnetism, and the relationship of voltage, current, resistance, and power in electrical circuits as related to telecommunications. Designed to develop an understanding of alternating and direct current fundamentals. Students will apply formulas to analyze the operation of AC and DC circuits.

Components: Lecture

Lecture: 3 credits (45 contact hours).

ETT 113 — Basic Electrical Theory Lab (1)

Allows the student to do hands-on applications of the theories and fundamentals learned in ETT 112. Co-requisite: ETT 112.

Components: Laboratory

Laboratory: 1 credit (45 contact hours).

ETT 114 — Voice & Data Installer Level II (4)

Designed for experienced telecommunications installers who wish to expand knowledge of the industry, learn new skills, and continue to advance professionally. The Installer Level 2 course requires two to five years of recent, verifiable telecommunications/low voltage cabling experience. In addition, several sections from the Installer Level 1 course will be covered comprehensively in this course. Prerequisites: ETT 110 with a grade of C or greater.

Components: Laboratory, Lecture

Lecture: 3 credit (45 contact hours);

Laboratory: 1 credit (30 contact hours).

ETT 116 — Fiber Optics Systems (3)

Provides a technical level of understanding in the areas of networking connectivity, data communications concepts and communication protocols. Communications and networking concepts including hardware, software, and transmission media; access methods and protocols; and network configurations area are addressed. Emphasis is on local area networks, and students will install a basic network.

Prerequisites: ETT 110 or Consent of Instructor.

Components: Lecture

Lecture: 3 credits (45 contact hours).

ETT 118 — Residential Network Wiring (3)

Provides students with the knowledge to design and install multimedia applications for residential structures; gain an understanding of industry-standards practices, codes, and ordinances that pertain to high-performance in-home systems. Includes voice, data, security, video, audio, automation, control and entertainment systems, cable performance characteristics, and appropriate cabling media, connectors, blocks, jacks, panel, pathways and spaces. Prerequisites: ETT 110 or Consent of Instructor.

Components: Lecture

Lecture: 3 credits (45 contact hours).

ETT 120 — Project Management (3)

Addresses project management issues including client integration, subcontractor liaison, scheduling, organization, methodologies, status reporting, quality control and safety. Contractual obligations, legal implications, terms and conditions and other associated risks encountered on large or complex projects are also examined.

Components: Lecture

Lecture: 3 credits (45 contact hours).

ETT 122 — Voice & Data Installer Technician (3)

The most advanced phase of a telecommunication cabling installation training program. Designed for those individuals with five (5) or more years of recent verifiable telecommunications/low voltage cabling experience.

Components: Lecture
Lecture: 3 credits (45 contact hours).
Prerequisites: ETT 114 with a grade of C or greater.

ETT 123 — Voice & Data Installer Technician Lab (2)
Permits hands-on applications of the theories and fundamentals learned in ETT 122. Co-requisite: ETT 122.
Components: Laboratory
Laboratory: 2 credits (60 contact hours).

ETT 126 — Essentials of Audio Visual Technology (4)
This course provides a brief overview of the sales, rental, design, and installation functions, with more in-depth explanations of the science and technology for basic audio, visual, and audiovisual systems integration. Completion on this course is recommended for those seeking the general Certified Technology Specialist (CTS) designation.
Components: Laboratory, Lecture
Lecture: 3 credits (45 contact hours);
Laboratory: 1 credit (30 contact hours).
Prerequisites: ET 110 or consent of instructor. Co-requisite: MT 150 or consent of instructor.
Campus: GTW

ETT 126 — Essentials of Audio Visual Technology (4)
This course provides a brief overview of the sales, rental, design, and installation functions, with more in-depth explanations of the science and technology for basic audio, visual, and audiovisual systems integration. Completion on this course is recommended for those seeking the general Certified Technology Specialist (CTS) designation.
Components: Laboratory, Lecture
Lecture: 3 credits (45 contact hours);
Laboratory: 1 credit (30 contact hours).
Prerequisites: ET 110 or consent of instructor. Co-requisite: MT 150 or consent of instructor.
Campus: GTWHH

ETT 199 — Cooperative Education for Voice and Data Wiring Technician (3)
Provides supervised on-the-job work experience related to the student's education objectives. Students participating in the Cooperative Education program receive compensation for their work.
Components: Co-Op
Prerequisites: ETT 114 with a grade of C or greater. Co-op: 3 credits (225 contact hours).

ENGLISH

ENC 090 Foundations of College Writing I (3)
An introduction to composition for students needing basic writing instruction and a comprehensive review of mechanics and grammar as these apply to their own writing. This course stresses clarity, organization, development, and correctness in writing with an emphasis on paragraph-length assignments. Students will be recommended to this course based on the placement examination.

ENC 091 Foundations of College Writing II (3)
Designed for students with some writing experience, this course includes instruction in the following: the writing process, organization, multiparagraph writings, editorial improvement, and critical reading. An introduction to research and documentation is also included. Students will be recommended to this course based on the placement examination.

ENC 092 Writing Laboratory (1)
The writing laboratory may supplement the concurrent composition course. It is designed to provide individual assistance in meeting students' specific writing needs. This course can be repeated with each writing course taken. Pass/Fail only.

ENG 101 Writing I (3)
Focuses on academic writing. Provides instruction in drafting and revising essays that express ideas in Standard English, including reading critically, thinking logically, responding to texts, addressing specific audiences, researching and documenting sources. Includes review of grammar, mechanics, and usage. NOTES (a) credit not available by special examination; (b) ENG 101 and ENG 102 may not be taken concurrently. Pre-requisites: Appropriate writing placement score or ENG 091.

ENG 102 Writing II (3)
Emphasizes argumentative writing. Provides further instruction in drafting and systematically revising essays that express ideas in Standard English. Includes continued instruction and practice in reading critically, thinking logically, responding to texts, addressing specific audiences, and researching and documenting credible academic sources. NOTE: Credit not available by special examination. Prerequisite: ENG 101.

ENG 203 Business Writing (3)
Instruction and experience in writing for business, industry, and government. Emphasis on clarity, conciseness, and effectiveness in preparing letters, memos, and reports for specific audiences. Prerequisite: Completion of University Writing requirement.

ENG 207 Beginning Workshop in Imaginative Writing (Subtitle required) (3)
A beginning course in the craft of writing, teaching students how to read critically and how to revise work in progress. The students provide an audience for each other's work. Exercises involve practice in aspects of craft and promote experimentation with different forms, subjects, and approaches; outside reading provides models and inspiration. May be repeated under different subtitle to a maximum of six credits. Prerequisite: Consent of instructor.

English 230 Introduction to Literature (3)
An introduction to close reading and argumentative writing about literature, in relation to a significant theme. The course involves studying selected texts revolving around a single theme, learning how to relate texts to contexts, to read closely and use basic literary terms and concepts. Attention will be paid to student writing, particularly to devising a thesis, crafting an argument, and learning how to use supporting evidence. VI

ENG 231 Literature and Genre (3)
A course exploring one or two different literary forms or genres, i.e. the formal categories into which literary works are placed. Students will explore the conventions of each genre and their related sub-genres. Attention will be paid to student writing. VI

ENG 232 Literature and Place (3)
A course exploring a number of selected literary texts, with special attention to the construction of personal, ethnic, racial, or national identity. The course may consider how race, class, sexuality, and/or nationality influence representations of experience. Attention will be paid to student writing. VI

ENG 233 Literature and Identities (3)
A course exploring a number of selected literary texts, with special attention to the construction of personal, ethnic, racial, or national identity. The course may consider how race, class, sexuality, and/or nationality influence representations of experience. Attention will be paid to student writing.

ENG 234 Introduction to Women's Literature (3)
This course will introduce students to a sampling of the rich body of women's writing, focusing on some important issues and representative examples. Students will read canonical and non-canonical works, discuss continuities and differences among women writers, and master some of the basic concepts of gender studies. VI

ENG 261 Survey of Western Literature from the Greeks through the Renaissance (3)
A study of works by major Western authors from the Bible and ancient Greek literature through the Renaissance. Note: ENG 261 fulfills no requirement of the English major. VI

ENG 262 Survey of Western Literature from 1660 to the Present (3)
A study of works by major Western authors from mid-17th century to the present. Note: ENG 262 fulfills no requirements of the English major. VI

ENG 264 Major Black Writers (3)
A cross-cultural and historical approach to written and oral works by major Black authors of Africa, the Caribbean and the United States. The course includes writers such as Chinua Achebe (Africa), Wilson Harris (Caribbean), and Toni Morrison (USA). (Same as AAS 264.) VI

ENG 281 Introduction to Film (3)
An introduction to the study of the movies as a narrative art and a cultural document. Viewing of films outside of class is required. May not be taken concurrently with ENG 380. VI

ENGLISH AS A SECOND LANGUAGE

ESL 010 Introduction to Reading and Vocabulary (4)
High-beginning level students will improve fundamental reading skills and expand vocabulary as they interact with level-appropriate texts. Students will be recommended to this course based on the ESL placement examination.

ESL 011 Beginning Listening and Speaking (4)
High-beginning level students will improve the ability to speak and understand English in simple everyday and academic situations. The course will provide practice in pronunciation and basic oral communication functions. Beginning academic listening and speaking skills will also be covered. Students will be recommended to this course based on the ESL placement examination.

ESL 012 Intermediate Listening and Speaking (4)
Low-intermediate level ESL students will improve comprehension and communication in English on a variety of everyday topics and in the academic setting. Students will develop and practice techniques for greater composure and confidence in oral expression. Practice will also be provided in pronunciation and intonation. Students will be recommended to this course based on the ESL placement examination or through completion of ESL 011.

ESL 013 Advanced Listening and Speaking (4)
High-intermediate level ESL students will improve comprehension and communication in both social and academic settings. Instruction will include improving listening skills for academic note taking and small group discussion. Students will be expected to lead and share in class discussions based on reading and authentic listening materials. Student will also present orally in front of the class. Students will be recommended to this course based on the ESL placement examination or through completion of ESL 012.

ESL 020 Reading Improvement and Vocabulary (4)
Development for Low-Intermediate Non-Native English Speakers
Low-intermediate level students will review fundamental reading skills, learn and practice higher order reading skills, expand vocabulary and increase reading efficiency as they interact with level-appropriate texts. Prerequisites: placement test.

ESL 030 College Reading and Vocabulary (4)
Development for High-Intermediate Non-Native English Speakers
High-intermediate level ESL students will master fundamental reading skills, improve critical reading, and further vocabulary development. Students will be introduced to a variety of genres, such as newspaper articles and essays, poems, short stories, charts, graphs and college-

level content textbooks. Through the selected readings, this course will foster cultural awareness, comprehension, and interaction. The readings and activities introduced in the course will allow students to engage in meaningful dialogue, and in the process, refine their English skills. Prerequisites: ESL 020 or placement test.

ESL 090 Beginning Writing (4)
High-beginning level ESL students will learn composition skills by receiving instruction in the following: the writing process, organization, sentence development, paragraph writing, and editing. Basic instruction in grammar provided. Students will be recommended to this course based on the ESL placement examination.

ESL 091 Intermediate Writing for Non-Native English Speakers (4)
Low-intermediate level ESL students will enhance their composition skills by receiving instruction in the following: the writing process, organization, multi-paragraph writings, editing, and critical reading. Basic instruction in grammar provided. Prerequisite: placement test.

ESL 092 Advanced Writing for Non-Native English Speakers (4)
ESL 092 is designed to help students prepare for ENG 101. High-intermediate level ESL students continue to work on the writing process, editorial improvement, and critical reading. Students will be introduced to documenting sources. Grammar instruction includes advanced grammatical points. Prerequisites: ESL 091 or placement test.

ENVIRONMENTAL SCIENCE TECHNOLOGY

EST 150 Introductory Ecology (4)
This course introduces the students to the basic concepts in ecology and application of those concepts to current environmental issues. Topics include: the relationships between organisms and the environment; factors that influence the relationships between organisms and the environment; factors that influence distribution and abundance of organisms; population structure and regulation; energy flow, nutrient cycling, and community development, structure, and response to disturbance. A weekly 2 hour laboratory will provide field and laboratory experiences for the students. Lecture: 3 hours, laboratory: 2 hours. Prerequisites: BIO 112 and BIO 111 or equivalent. IV

EST 160 Hydrological Geology (3)
This course provides an introduction to geology and hydrology with an emphasis on understanding natural processes and the effects of human activities. Major topics covered include: plate tectonics; formation and classification of rocks and minerals; the processes affecting the hydrologic cycle; soil formation and classification; subsurface geology and groundwater movement; stream formation and flow; floods; and human impacts to stream hydrology and morphology. IV

EST 170 Environmental Sampling Laboratory (2)
A laboratory course which provides the fundamentals in evaluating and designing sampling approaches for different situations and different media. The course will provide students with field experience in sampling soil, surface water, groundwater, and benthic invertebrates. Laboratory: 4 hours. Prerequisite: EST 150 or consent of instructor.

EST 220 Pollution of Aquatic Ecosystems (3)
This course examines freshwater ecosystems and typical aquatic pollutants. Discussion topics focus on the sources, transport, fate, and effects of common pollutants such as domestic wastewater, metals, acidity, and pesticides. Methods to minimize or eliminate the sources and effects of pollutants are also explored. Prerequisite or concurrent: EST 150, EST 160, CHE 105, and CHM 105 or consent of instructor.

EST 225 Freshwater Invertebrates (3)

An overview of the morphology, life history and ecology of freshwater invertebrates and their habitats as well as their importance and role in stream protection and restoration. Students will learn how to collect, preserve and identify freshwater invertebrates. Students will learn how to calculate and analyze biometrics used to infer stream quality. Prerequisite: EST 150.

EST 230 Aquatic Chemistry Laboratory (2)

This course provides focused study on the chemistry of water. The course will provide students with laboratory experience in analyzing surface, ground, and drinking waters for a variety of chemical constituents. Laboratory: 4 hours. Prerequisite: CHE 105, CHM 105, and prerequisite or concurrent EST 220.

EST 240 Sources and Effects of Air Pollution (4)

This course provides an introduction to the study of ambient and indoor air pollution with an emphasis on sources, dispersion, and health and welfare effects of the major pollutants. Both regulatory and engineering controls of stationary and mobile sources are explored. A laboratory provides experience with sampling and analysis of air pollutants. Lecture: 3 hours, laboratory: 2 hours. Prerequisite: EST 150 and CIS 130, or equivalent, or consent of instructor.

EST 250 Solid and Hazardous Waste Management (3)

This course examines methods of managing solid and hazardous waste, with an emphasis on pollution prevention. Topics covered include relevant legislation, recycling, incineration, landfill operations, management of radioactive waste, remediation of waste sites and site worker health and safety. Prerequisite: EST 150 and EST 160, or consent of instructor.

EST 260 Environmental Analysis Laboratory (2)

This course provides an introduction to the fundamentals of analyzing environmental media. The course will provide students with laboratory experience in analyzing soil, surface water, groundwater, air and microbial samples. Laboratory: 4 hours. Prerequisite: CHE 105, CHM 105 and prerequisite or concurrent EST 170.

EST 270 Environmental Law and Regulation (3)

This course is structured to provide the student with a basic understanding of major current federal and state environmental legislation and regulation with an emphasis on those portions that affect the regulated community. The course will also include an examination of the role of common law and the branches of government in environmental protection. Prerequisite or concurrent: EST 220, EST 240, and EST 250 or consent of instructor.

EST 280 Environmental Trends Seminar (1)

This course provides an examination of current approaches used to address a variety of environmental problems. Students will hear and critique presentations from professionals in the environmental field. Students will also research and give a presentation on a specific method to minimize or eliminate a current environmental problem. Prerequisites or concurrent: EST 160, EST 150, COM 181 or COM 252, EST 170, EST 220, EST 260, and EST 250 or consent of instructor.

EST 299 Selected Topics in Environmental Science Technology: (Topic) (1-3)

A special project or experience in Environmental Science will be selected to enhance core material in the Environmental Science Technology program. It provides the student an opportunity for independent study or specialized instruction as approved by an instructor. This course may be repeated to a maximum of 6 hours. Prerequisite: Consent of instructor

ENVIRONMENTAL TECHNOLOGY**ENV 100 — Environmental Mathematics (3)**

The course develops problem-solving skills and reasoning abilities. Students perform secondary level mathematics, including algebra and geometry. Components: Lecture
Prerequisites: None

ENV 101 — Fundamentals of Environmental Science (1)

This course is an on-line study of the fundamental concepts of environmental science that will include elements of chemistry, biology and ecology. This course should be completed in 5 weeks or less. Components: Lecture
Lecture: 1 credit (15 contact hours).

ENV 110 — Introduction to Environmental Technology (4)

Introduction to Environmental Technology provides a background in the historical and current developments in environmental problems, solutions, strategies, and regulations. Student explore the various aspects of water, land, and air pollution, pollution prevention and control, and the role of regulation at the local, state, and federal level. Components: Lecture
Prerequisites: None

ENV 111 — Environmental Sampling Techniques Lab (2)

This course is designed to provide the student with an introduction to the techniques for the collection of waste, soil, water, and air samples. Areas covered include standard operating policies and procedures, investigation inspection techniques, overview activities, sample control, field records, document control, sample containers, sample preservation, sample holding times, and sample types. Basic sampling techniques covered are outlined in the EPA's 165.9 course, the EPA's Description and Sampling of Contaminated Soils Pocket Guide, general industry standards, and practices outlined by the manufacturers of sampling equipment. The course will include the general protocol for waste, soil, water, and air sampling. Components: Laboratory
Prerequisites: None

ENV 120 — Environmental Chemistry (3)

Areas covered include fundamental organic and inorganic chemistry principles and underlying theory, measurements, periodic tables, acids, bases, and salts. The interrelationship of chemistry and biological systems is emphasized. Components: Lecture
Corequisites: ENV 121

ENV 121 — Environmental Chemistry Lab (1)

This is a hands-on class designed to allow students to use the concepts, principles, and theories covered in Environmental Chemistry, ENV 120, in practical application. Components: Laboratory
Corequisites: ENV 120

ENV 130 — Environmental Physics (3)

This course is a study of the concepts of physics applied to mechanical, thermal, electrical, and fluid systems related to environmental science. Components: Lecture
Corequisites: ENV 131

ENV 131 — Environmental Physics Lab (1)

This hands-on class allows students to use the concepts, principles, and theories covered in Environmental Physics, ENV 130, in practical application. Components: Laboratory
Corequisites: ENV 130

ENV 132 — Environmental Management (2)

This course will focus on the historical and current environmental legislation that affects the workplace at both the national and state levels. It will assist those in supervisory positions to recognize environmental hazards and to identify their own role in environmental protection.

Components: Lecture

Lecture: 2 credits (30 contact hours).

ENV 140 — Geology, Hydrology and Soils (4)

This course introduces the basic concepts of field work in the area of physical and historical geology as it relates to environmental studies. The major focus is on the identification of soils, rock and mineral samples, the use of maps, and the modeling of water movement on and through the surface of the earth, with emphasis on the geology of Kentucky and its impact on the remediation, treatment, and disposal of waste.

Components: Lecture

Corequisites: ENV 141

ENV 141 — Geology, Hydrology, and Soils Lab (2)

This hands-on class allows students to use the concepts, principles, and theories covered in Introduction to Geology, Hydrology and Soils Lab, ENV 140, in practical application.

Components: Laboratory

Corequisites: ENV 140

ENV 260 — Hazardous Materials (6)

This course covers the basic principles of toxic effect and dose relationship for a variety toxic and hazardous substances. The primary focus will be on the EPA and OSHA classification systems. An in-depth study of the classification and characterization system for hazardous materials, hazardous substances, and hazardous waste and areas of concentration include testing procedures, labeling, manifest systems, reporting requirements, and generator classification will be studied

Components: Lecture

Corequisites: None

ENV 261 — Hazardous Materials Lab (3)

This is a lab course dealing with recognition and identification of hazardous materials, their properties and the risks associated with them. The student will be provided with the basic knowledge for the initial response to hazardous materials incidents through the hands-on-use of the Driver's Pocket Guide to Hazardous Materials, the NIOSH Pocket Guide to Chemical Hazards, NIOSH computer program, Hawley's Chemical Dictionary, the Farm Chemicals Handbook, the Guidebook for First Response to Hazardous Materials Incidents, and Material Safety Data Sheets. Information necessary for compliance with the Associated Hazardous Materials Emergency Response Training requirements set forth by the US Occupational Safety and Health Administration First Responder Awareness Levels contained in 29 CFR 1910.120 to include: Recognizing and Identifying Hazardous Materials - 8 hours, First Responders Operation Level - 24 hour and the Hazardous Waste Site Worker - 40 hour will be covered in this course.

Components: Laboratory

Corequisites: ENV 260

ENV 270 — Treatment and Disposal Technologies (3)

This course covers study in the treatment, storage, processing, and disposal of waste materials. Students will explore aspects of waste materials disposal and treatment options; including landfills, landfarms, composting, material resource recovery, incineration, waste-to-energy systems, solidification and stabilization processes, vitrofication, air-sparging, pump and treat systems, and bioremediation. The student will implement the knowledge and techniques acquired in the Environmental Technician program. The use of team operation will be used in selecting,

developing, and implementing a plan to accomplish the sampling, site investigation report, and corrective action and closure plan or operating plan for a waste management scenario provided by the instructor. The team will select and complete the required state operating registration or permit, if any.

Components: Lecture

Corequisites: None

ENV 280 — Water Treatment Technology (6)

This course concentrates on the operating requirements for drinking water treatment plants. Both surface water and ground water sources will be covered in this course. This course will provide the student with training in safety, plant operation, sampling and laboratory analysis and the recordkeeping requirements for water treatment facilities. The student will study the information needed by the operator to perform specialized water treatment processes. Areas to be covered include iron and manganese control, fluoridation, softening, trihalomethanes, demineralization, and the handling and disposal of process wastes.

Components: Lecture

Corequisites: ENV 281

ENV 281 — Water Treatment Technology Lab (2)

This is a hands-on class designed to allow the student to use the concepts, principles, and theories covered in Water Treatment Technology, ENV 280, in practical application.

Components: Laboratory

Corequisites: ENV 280

ENV 290 — Wastewater Treatment Technology (6)

This course concentrates on the operating requirements for package and small waste water treatment plants. This course will provide the student with training in safety, plant operation, sampling and laboratory analysis and the record keeping requirements for package and small wastewater treatment facilities. The course will provide the information needed by the operator to perform specialized wastewater treatment processes.

Emphasis will be placed on larger conventional treatment plants and will include information of supervisory and management functions

Components: Lecture

Corequisites: ENV 291

ENV 291 — Wastewater Treatment Technology Lab (2)

This course concentrates on the operating requirements for package and small waste water treatment plants. This course will provide the student with training in safety, plant operation, sampling and laboratory analysis and the recordkeeping requirements for package and small wastewater treatment facilities. The course will provide the information needed by the operator to perform specialized wastewater treatment processes. Emphasis will be placed on larger conventional treatment plants and will include information of supervisor and management functions.

Components: Laboratory

Corequisites: ENV 290

ENV 293 — Special Problems I Lab (Elective) (1)

A course designed for the student who has demonstrated specific special needs.

Components: Laboratory

Prerequisites: Approval of Instructor

ENV 295 — Special Problems II Lab (Elective) (2)

A course designed for the student who has demonstrated specific special needs.

Components: Laboratory

Prerequisites: Approval of Instructor

EQUINE BUSINESS MANAGEMENT

EQM 100 Introduction to Equine Studies (3)

The intent of this course is to give students a general overview and basic understanding of the horse, its care and management. Course topics include identification, anatomy, health, nutrition, facility and equipment management. Lecture: 2 hours laboratory: 2 hours.

EQM 120 Introduction to Commercial Breeding Practices (4)

The intent of this course is to introduce prospective horse farm personnel to the breeding farm environment. Numerous topics will be discussed that relate to commercial breeding farm management and the necessary record keeping requirements. Lecture: 3 hours; laboratory: 2 hours. Prerequisite: EQM 100 or consent of instructor.

EQM 140 Equine Business Management I (2)

Course in equine management that serves to introduce the student to private and commercial horse farm operations, economic trends in the horse industry, international marketplace, capital, credit and risk associated with the equine industry. Prerequisite: EQM 100 and BE 160, or consent of instructor.

EQM 240 Equine Business Management II (2)

This course is a continuation of Equine Business Management I. Topics of discussion include types of farm ownership, structure of the horse farm as a business, and evaluation of farm financial performance through production levels, employee management, tax planning, bloodstock value, cash flow and budgeting. Prerequisite: EQM 140 and concurrent enrollment in or successful completion of ACC 201 and ECO 201, or consent of instructor.

EQM 242 Equine Law (3)

This course explores the value of legal documents as they relate to commercial and recreational horse/horse farm owners. Topics discussed include review of current legislation governing horse activities, types of legal contracts, liability issues, and security interests. Prerequisite: EQM 100 and BE 267, or consent of instructor.

EQM 246 Current Trends in the Equine Industry (1)

Seminar course in the horse industry designed to provide students with the opportunity to investigate, evaluate and debate key issues confronting horse owners and horse industry participants. Students are encouraged to analyze controversial circumstances in the equine industry and provide insight and logical conclusion. Seminar topics may include such issues as equine adoption, slaughter, transport, medications, account wagering, and public image. Prerequisite: EQM 242 or consent of instructor.

EQM 250 Equine Practicum (3)

A supervised, field-based learning experience in the equine industry, including observation and proactive participation in affiliated environments. Students are required to analyze their experiences throughout the semester to develop career objectives and strong interpersonal, communication and leadership skills. Laboratory: 12 hours. Prerequisite: EQM 240, EQM 242, and concurrent enrollment in or successful completion of EQM 246.

EXPERIENTIAL EDUCATION

EX 196 Experiential Education (1-6)

Experiential Education is a planned and evaluated work experience for which the student receives academic credit and may or may not receive financial remuneration. The work experience may be related to the student's major or exploratory in nature. One credit will be awarded for each 40 hours of completed work experience. The course may be repeated for a maximum of 6 credits and is available on a pass/fail basis only. This course is open to students in programs other than the Associate in Applied Science majors plus those exploring alternate career paths or making special requests in addition to transfer, non-degree, and pre-baccalaureate students. Prerequisite: Consent of instructor and a

completed learning agreement that has been signed by the student, the instructor, and the coordinator.

FAMILY STUDIES

FAM 252 Introduction to Family Science (3)

Introduction to the scientific study of the family. Topics covered will include the important theoretical frameworks in family science, historical trends in marriage and family life, gender role theory, family life cycle theory, parenthood, communication, economics of family life, conflict, divorce, step-families and step-parenting, family strengths. Students will analyze contemporary family issues and take informed, written positions on those issues. V

FAM 253 Human Sexuality: Development, Behavior and Attitudes (3)

Study of human sexuality, including the process of gender differentiation, sexual response patterns, sexual behavior and attitudes. Prerequisite: 3 hours in social or behavioral sciences. V

FAM 255 Child Development (3)

An overview of the various aspects of development (physical, social, emotional, intellectual) in the social context for children prenatally through adolescence. Course will emphasize techniques of directed observation. Lecture: 3 hours, laboratory: 1 hour.

FAM 256 Guidance Strategies for Working with Young Children (3)

Examination of effective guidance strategies for use with young children in an early childhood setting; modifications of experiences for age level, ability, group and individual needs.

Application and evaluation of guidance skills in laboratory experience. Lecture: 2 hours, laboratory: 2 hours. Prerequisite: PSY 223 (or FAM 254) or FAM 255.

FIRE/RESCUE SCIENCE TECHNOLOGY

FRS 101 — Introduction to Fire Service (3)

This course includes fire department organization, fire behavior, firefighter safety, personal protective equipment, portable fire extinguishers, fire hose, appliance and streams. Components: Lecture
Prerequisites: None

FRS 102 — Firefighters Basic Skills I (3)

This course includes ropes, ladders, aircraft rescue, forcible entry, first aid, bloodborne pathogens, and emergency disaster planning, and CPR. Components: Lecture
Prerequisites: None

FRS 103 — Firefighters Basic Skills II (3)

This course includes building construction, wildland fire fighting, fire control and ventilation. Components: Lecture
Prerequisites: None

FRS 104 — Firefighters Intermediate Skills I (3)

This course includes water supply, foam fire streams, fire alarms and communications, hazardous materials awareness, hazardous materials operations, sprinklers, and salvage and overhaul. Components: Lecture
Prerequisites: None

FRS 105 — Firefighters Intermediate Skills II (3)

This course includes fire department organization, fire behavior, personal

protective equipment, fire hose, appliances and streams, ropes, forcible entry. Components: Lecture Prerequisites: None

FRS 201 — Firefighters Advanced Skills I (3)

Firefighters Advanced Skills I includes firefighter safety, rescue, ventilation, ladders, fire control, and emergency disaster planning. Components: Lecture Prerequisites: None

FRS 202 — Firefighters Advanced Skills II (3)

Firefighters Advanced Skills II includes portable fire extinguishers, water supply, pump operations, foam fire streams, salvage, fire prevention, public education, and fire cause determination. Components: Lecture Prerequisites: None

FRS 203 — Firefighters Advanced Skills III (3)

Firefighters Advanced Skills III includes pump operations II, drivers training, overhaul, fire alarms and communications, sprinklers, and practicum. Components: Lecture Prerequisites: None

FRS 204 — EMT First Responder (3)

EMT First Responder includes first responder (EMS). Components: Lecture Prerequisites: None

FRS 205 — Fire Officer I (5)

Fire Officer I includes incident safety officer, haz-mat tech., fire prevention, public education and fire cause determination II. Components: Lecture Prerequisites: None

FRS 206 — Fire Officer II (8)

Fire Officer II includes EMT, managing company tactical operations, decision making, and instructional techniques for company officers. Components: Lecture Prerequisites: None

FRS 207 — Fire Officer III (6)

Fire Officer III includes company officer, incident command system (ICS), leadership strategies for company success, and fire/arson detection. Components: Lecture Prerequisites: None

FRT 152 — Fire Prevention, Public Education and Fire Cause Determination II (0.5)

Relates to prefire planning, fire incident reports, building fire safety surveys, school exit drills, home safety programs, common fire hazards, fire cause determination, protection and detection systems and identification of structural deficiencies that could cause fires. Components: Lecture Prerequisites: FRT 100-126, or Consent of Instructor.

FRT 153 — Firefighter Survival & Rescue (1.1)

This course examines significant areas of firefighter fatalities and injuries associated with emergency and nonemergency situations. This course addresses causes of fatalities and injuries and recommended solutions and methods to implement the latter. Components: Lecture Prerequisites: Prerequisites:

FRT 154 — Hazardous Materials Technician (3.4)

This course provides the required training for Federal Occupational Safety and Health Administration (OSHA), Kentucky Occupations Health and Safety regulation and U.S. Environmental Protection Agency

(EPA) requirements. The course will cover responding to releases or potential releases of hazardous materials for the purpose of controlling the release and using specialized chemical-protective clothing and specialized control equipment. Components: Laboratory, Lecture Prerequisites: FRT 100-151 or Consent of Instructor.

FRT 155 — Emergency Medical Technician (EMT) (6)

This basic Emergency Medical Technician course covers all knowledge aspects of trauma care as outlined by national standards, created by federal guidelines, considered to be the responsibilities of ambulance operations. Training involves typical anatomy and physiology; patient assessment; care for respiratory and cardiac emergencies, control of bleeding; application of dressing and bandages; treatment for traumatic shock; care for fractures, dislocation, sprains and strains; medical emergencies; emergency childbirth; burns and heat emergencies; environmental emergencies; principles of vehicle rescue; transportation of patients and general operations of ambulance systems. Components: Laboratory, Lecture Prerequisites: FRT 100-151 or Consent of Instructor.

FRT 156 — Managing Company Operations: Decision Making (1)

This course is designed to meet the needs of fire officers and crew leaders with responsibilities to manage the operations of one or more companies in structural firefighting operations. The course components of this curriculum include preparation for response, decision making, and tactical operations. The foundation of the course is an extensive use of simulation to provide application of concepts and the development of skills. Managing Company Tactical Operations: Decision making provides an effective approach to command decision making and organization. The focus is a review of the command sequence and an overview of incident command for structural firefighting. Components: Lecture Prerequisites: FRT 100-151 or Consent of Instructor.

FRT 157 — Instructional Techniques for Company Officers (1)

Designed for company officers and other fire or rescue service personnel with the responsibility for conducting periodic company level or small unit training. Instructional Techniques for Company Officers introduces the participant to basic instructional concepts and techniques. Course emphasis is on those teaching principles and techniques applicable to fire and rescue service training. Topics include: effective communication, teaching from lesson plans, methods of instruction with emphasis on skills training, and adult learning. Components: Laboratory, Lecture Prerequisites: FRT 100-151 or Consent of Instructor.

FRT 158 — Company Officer (3.5)

This course involves information and activities needed to meet the minimum standards of Fire Service Company Officers in practicing competencies relative to administrative and incident resolution consistent with National Fire Protection Association Code 1021. Components: Lecture Prerequisites: FRT 100-151 or Consent of Instructor. Corequisites: FRT159, FRT 160, FRT 161.

FRT 159 — Incident Command System (ICS) (0.9)

This course is designed to meet the needs of fire officers and managers with responsibilities to use, deploy, implement and/or function within a departmental Emergency Management System. This program addresses the need for incident management systems, an overview of the structure and expandability of ICS, an understanding of the command skills needed by departmental officers to effectively use ICS, guidelines and scenario practice on how to apply ICS, and guidelines and resource information for setting up and implementing a departmental ICS. Components: Lecture Prerequisites: FRT 100-151 or Consent of Instructor. Corequisites: FRT 158, FRT 160, FRT 161.

FRT 160 — Leadership: Strategies for Company Success (0.8)

Designed to meet the needs of the company officer, this course provides the participant with basic skills and tools needed to perform effectively as a leader in the fire service environment. This leadership course addresses techniques and approaches to problem-solving, identifying and assessing the needs of the company officer's subordinates, running meetings effectively in the fire service environment, and decision-making for the company officer.

Components: Lecture

Prerequisites: FRT 100-151 or Consent of Instructor.

Corequisites: FRT 158, FRT 159, FRT 161.

FRT 161 — Fire/Arson Detection (0.8)

The Fire/Arson Detection course is designed for fire officers and firefighters to improve their skills in determining fire causes at the fire scene. The course begins with the study of the motivation of the arsonist and progresses through to the prosecution of the crime of arson. The goal of the course is to provide appropriate training to the firefighter and fire officer so as to make an impact in reducing arson crimes throughout the nation.

Components: Lecture

Prerequisites: FRT 100-151 or Consent of Instructor.

Corequisites: FRT 158, FRT 159, FRT 160.

FRENCH**FR 101 Elementary French (4)**

The study of basic French through grammar, reading and oral practice. VI

FR 102 Elementary French (4)

A continuation of FR 101. The study of basic French through grammar, reading and oral practice. Prerequisite: FR 101. VI

GEOGRAPHIC INFORMATION SYSTEMS**GIS 110 Spatial Data Analysis and Map Interpretation (3)**

This course is an introduction to the development and spatial interpretation of data so that it may be prepared for statistical analysis on a two or three-dimensional surface. The course will also introduce remote sensing techniques, Global Positioning Systems, the interpretation of aerial photography for environmental, commercial and/or demographic purposes, and the application of Geographic Information Systems in both the public and private sector. Students will receive a cursory introduction to a current software package and will have the opportunity to complete basic projects using that software. Lecture: 2 hours, lab: 1 hour.

GIS 120 Introduction to Geographic Information Systems (3)

This course, a continuation of GIS 110, will introduce the fundamentals of Geographic Information Systems. The course will cover the basic operating systems of a current GIS software package including the use of graphic user interface, common theme operations, importation of a foreign database, introductory scripts and layouts, manipulation of tables, the creation and editing of shapefiles, and geocoding. This course is designed for those with little to no experience with GIS who are exploring career opportunities. Prerequisite: GIS 110.

GIS 210 Advanced Topics in GIS (3)

This course will explore advanced topics in Geographic Information Systems. The course will teach students how to import foreign databases into a GIS, advanced theme operations, extensive use with scripts, introductory programming with both Avenue and Visual Basic for GIS, and how to incorporate remotely sensed imagery into GIS. Prerequisite: GIS 120.

GEOGRAPHY**GEO 130 Earth's Physical Environment (3)**

A course exploring the fundamental characteristics of earth's physical environment. Emphasis is placed on identifying interrelationships between atmospheric processes involving energy, pressure, and moisture, weather and climate, and terrestrial processes of vegetative biomes, soils, and landscape formation and change. Fulfills elementary certification requirements in education.

GEO 152 Regional Geography of the World (3)

A geographical study of the world by regions with a focus on the world's physical and human landscapes. Emphasis on how regions are connected to each other. Also how each region is affected by, and affects, global issues such as economic restructuring, food production, and environmental change, will be examined. Fulfills elementary certification requirement for Education and USP disciplinary social science requirement. V

GEO 160 Lands & Peoples of the Non-Western World (3)

The geographic study of the conceptual and historical definition of regions of the world as "Non-Western." Global patterns of social, cultural, economic, and political difference between the West and Non-West as well as the processes key to the making of the Non-Western world (such as colonialism and imperialism) are discussed. In addition, selected current issues of significance to peoples in the Non-Western world, such as sustainable development, environment, human rights, and gender relations, are considered. Fulfills USP Cross-Cultural requirement. V

GEO 172 Human Geography (3)

A study of the spatial distributions of significant elements of human occupancy of the earth's surface, including basic concepts of diffusion, population, migration, settlement forms, land utilization, impact of technology on human occupancy of the earth. (Fulfills elementary certification requirement for Education and University Studies requirement.) V

GEO 210 Pollution, Hazards, and Environmental Management (3)

An introduction to environmental systems such as weather and climate, vegetation, land forms and soils, and how the quality of these systems is modified by human use. Resource issues discussed include: atmospheric pollution and global warming; groundwater, flooding, and flood plain management; volcanic activity and earthquakes; and biospheric processes associated with deforestation and lake eutrophication. Case studies based upon important environmental problems illustrate how human activity and environmental systems interrelate. Offered at LCC in the Spring Semester.

GEO 222 Cities of the World (3)

Focuses on the historical development, contemporary character, and alternative futures of cities in both developing and developed regions. The spatial, social, economic, and political processes of major world cities are studied and contemporary urban problems are discussed. Offered at LCC on even years in the Fall Semester. V

GEO 240 Geography and Gender (3)

Adopts a geographic approach to the study of gender relations. The role of space and place in shaping the diversity of gender relations throughout the world will be considered. Through case studies the importance of gender relations in understanding a variety of issues will be stressed. Such issues include: the design and use of urban and rural environments; "Third World" development; regional economic restructuring; changing political geographies; and migration. Offered at LCC on odd years in the Fall Semester. V

GEO 260 Third World Development (3)

This course focuses on characteristics of developing countries as well as solution strategies to development problems and conditions. Cultural distinctions, traditions, and institutions are recognized as keys to

development condition and progress. Selected theories show how cultural variations in language and religion may be used to explain development. Numerous case studies are discussed, including Indonesia, China, India, Brazil, Kenya and Zimbabwe.

cultural development of Western civilization; the values in scientific inquiry as compared with other kinds of inquiry; the importance of science and technology in modifying social organization and human expectations. Emphasizes the period since the Industrial Revolution. VI

GEOLOGY

GLY 130 Dinosaurs and Disasters (3)

More than 65 million years ago, dinosaurs and their kin dominated the earth and relegated our mammalian ancestors to positions of unimportance for nearly 155 million years. This course traces the history of dinosaurs from early vertebrate ancestors to their final extinction and surveys the evolutionary, paleogeographic, environmental, and possible extraterrestrial causes for the rise to dominance and sudden fall. Along the way and afterwards, dinosaur interactions with other organisms and the environment, as well as their indirect influence on mammals, particularly on the much later evolution of humankind, will be examined. IV

GLY 220 Principles of Physical Geology (4)

How the Earth Works: an integrated course in physical geology, covering the physical, chemical, and biological processes that combine to produce geological processes. Attention is focused on plate tectonics, earth surface processes, and properties and formation of earth materials. Laboratory exercises emphasize identification and interpretation of geologic materials and maps. Lecture/Discussion, 3 hours per week; laboratory: 3 hours per week. IV

GERMAN

GER 101 Basic German (4)

Fundamentals of German with development of the four basic skills: reading, writing, listening, and speaking. VI

GER 102 Basic German (4)

Continuation of German 101. Prerequisite: GER 101, or one year of high school German, or equivalent. VI

HEALTH SCIENCE EDUCATION

HSE 101 Introduction to the Health Sciences (1)

Limited to students contemplating a career in one of the health sciences.

HISTORY

HIS 104 A History of Europe Through the Mid-Seventeenth Century (3)

This course is a survey of the development of European politics, society, and culture through the Age of Religious Conflict. VI

HIS 105 A History of Europe From the Mid-Seventeenth Century to the Present (3)

This course is a survey of the development of European politics, society, and culture from the Age of Absolutism to the present. It is a continuation of HIS 104. VI

HIS 106 Western Culture: Science and Technology I (3)

Presents the interactions of science and technology with the social and cultural development of Western civilization; the values in scientific inquiry as compared with other kinds of inquiry; the importance of science and technology in modifying social organization and human expectations. Emphasizes the period to the Industrial Revolution. VII

HIS 107 Western Culture: Science and Technology II (3)

Presents the interactions of science and technology with the social and

HIS 108 History of the United States Through 1865 (3)

This course traces the nation's development through the Civil War. It is designed to meet the demands for a general understanding of American history. This course fulfills the requirements for the elementary teachers' certificate. VI

HIS 109 History of the United States Since 1865 (3)

A continuation of HIS 108, from 1865 to the present. VI

HIS 120 The World at War, 1939-45 (3)

A global overview of the events of the Second World War, including consideration of the conflict's military, diplomatic, political, social and economic dimensions. VI

HIS 202 History of British People to the Restoration (3)

From the Roman period to the Stuart period. A general survey of the various epochs and phases of the English people at home and abroad. VI

HIS 203 History of the British People Since the Restoration (3)

From the Stuart period to the present. A continuation of HIS 202. VI

HIS 206 History of Colonial Latin America, 1492 to 1810 (3)

A broad survey of the social, economic, political and cultural development of Latin America from the fifteenth century to 1810. Includes analysis of such topics as pre-Columbian societies on the eve of conquest, the Iberian kingdoms in the Age of Expansion, the conquest and colonization of the indigenous cultures of the New World, the establishment of Spanish and Portuguese institutions, the relations between the Church and the State, the encomienda and the hacienda slavery and the impact of the Bourbon Reforms on America. VII

HIS 207 History of Modern Latin America, 1810 to Present (3)

A broad survey of the Latin American nations focusing on their social, economic, political and cultural development. Traces the history of the Independence movements, nation building, the struggle for modernization dependency and the phenomenon of revolution in the twentieth century. VI

HIS 240 History of Kentucky (3)

A general survey of the chief periods of Kentucky's growth and development from 1750 to the present. VI

HIS 247 History of Islam & Middle East Peoples, 500 - 1250, A.D. (3)

A survey of the origins and development of the Islamic civilization from the time of the Prophet Mohammed to 1250, with special consideration on the role of the Arab, Iranian, and Turkic peoples. VI

HIS 248 History of Islam and Middle East Peoples, 1250 to the Present (3)

A continuation of HIS 247. A survey of the religion and institutions of the Islamic world in the Middle East with special emphasis on the Mongol, Ottoman, Safavid and Qajar empires. The demise of these empires, the response of the Middle East peoples to European imperialism, and their national development up to the present will be considered. VI

HIS 260 Afro-American History to 1865 (3)

A study of the Black experience in America through the Civil War. An examination of the African heritage, slavery, and the growth of Black institutions. (Same as AAS 260.) VI

HIS 261 Afro-American History 1865-Present (3)

This course traces the Black experience from Reconstruction to the Civil Rights Movement of the 1960s. The rise of segregation and the ghetto and aspects of race relations are examined. (Same as AAS 261.) VI

HIS 265 History of Women in America (3)

History of American women, with particular emphasis on on the mid 19th through the mid 20th centuries. Major themes include the family, work, social ideas about women, and feminism. Prerequisite: HIS 109 or consent of instructor.

HIS 296 East India Since 1800 (3)

A continuation of HIS 295. A survey of the political and economic modernization of traditional East Asian society with emphasis on nationalistic reactions to Western pressure and international rivalry in East Asia.

HUMANITIES**HUM 121 Peace Studies (3)**

This interdisciplinary course is intended as a general introduction to the nature, scope, and methodology of Peace Studies, with a view toward the future. It will explore the history of non-violent movements to effect social change, the role of women in the attainment of peace and protection of life, the tie between social justice and the environment, and the resolution of conflict between individuals, groups, societies, and nations. The course includes the study of activist such as Dr. Martin Luther King, Jr., Gandhi, and Dorothy Day.

HUM 135 Introduction to Native American Literature (3)

This course introduces the study of the oral and written literature of Native American peoples, with an emphasis on the cultural and historical contexts. VI

HUM 240 Literature of Appalachian Kentucky (3)

This is an online or computer-assisted introductory survey course in the Appalachian literature of Kentucky concentrating on the major contemporary and traditional writers who are distinctly identified with that region. Approaches may include a group of authors, an historical period or aesthetic movement, a genre, a theme, or an aspect of literary theory.

HUM 241 Literature of Central Kentucky (3)

This is an online or computer-assisted introductory course in the literature of Central Kentucky concentrating on the major contemporary and traditional writers who are distinctly identified with that region. Approaches may include a group of authors, an historical period or aesthetic movement, a genre, a theme, or an aspect of literary theory.

HUM 242 Literature of Western Kentucky (3)

This is an online or computer-assisted introductory survey course in the literature of Western Kentucky which concentrating on the major contemporary and traditional writers who are distinctly identified with that region. Approaches may include a group of authors, an historical period, or aesthetic movement, a genre, a theme or an aspect of literary theory.

HUM 245 Seminar in Kentucky Literature (Subtitle Required) (3)

This is an online or computer-assisted seminar course in Kentucky literature recognizing, examining, and studying distinct regional differences and similarities with concentration on major contemporary and traditional Kentucky writers and their texts. Topics will vary, from a group of authors, and historical period or aesthetic movement, to a genre, a theme, or an aspect of literary theory.

MIT: INDUSTRIAL MAINTENANCE TECHNOLOGY**IMT 100 — Welding for Maintenance (3)**

Provides basic instruction needed for student to weld using SMAW, MIG, TIG and Oxy-Fuel. Co-requisite: IMT 101 or Consent of Instructor.

Components: Lecture

Lecture: 3 credits (45 contact hours).

IMT 101 — Welding for Maintenance Lab (2)

Provides application of basic welding skills used in SMAW, MIG, TIG and Oxy-Fuel. Co-requisite: IMT 100 or Consent of Instructor.

Components: Laboratory

Laboratory: 2 credits (60 contact hours).

IMT 110 — Industrial Maintenance Electrical Principles(3)

This course introduces the theory of electricity and magnetism and the relationship of voltage, current, resistance, and power in electrical circuits. The course is designed to develop an understanding of alternating and direct current fundamentals. Students will apply formulas to analyze the operation of AC and DC circuits.

Components: Lecture

Prerequisites: None

IMT 111 — Industrial Maintenance Electrical Principles Lab (2)

Verifies knowledge of basic theory by making measurements in working AC and DC circuits. Various types of circuits are constructed and their parameters measured. The use of test equipment, safety and troubleshooting are stressed. Co-requisite: IMT 110 or Consent of Instructor.

Components: Laboratory

Laboratory: 2 credits (60 contact hours).

IMT 115 — Basic Machine Tool I (3)

This course provides the basic principles needed for a solid foundation in machine tool technology. Areas and machines covered include shop safety, benchwork, drill press, power saw, measurement, mills and lathes.

Components: Lecture

Prerequisites: None

IMT 116 — Basic Machine Tool I Lab (2)

Provides the basic principles needed for a solid foundation in machine tool technology. Areas and machines covered include shop safety, benchwork, drill press, power saw, measurement, mills and lathes. Co-requisite: IMT 115 or Consent of Instructor.

Components: Laboratory

Laboratory: 2 credits (60 contact hours).

IMT 120 — Industrial Maintenance Rotating Machinery(3)

Students will learn the basic principles needed for the proper maintenance of AC and DC motors.

Components: Lecture

Prerequisites: Permission of the instructor.

IMT 121 — Industrial Maintenance Rotating Machinery Lab (2)

Provides practical experience in the construction, operation and maintenance of AC motors and alternators and DC motors and generators. Co-requisite: IMT 120 or Consent of Instructor.

Components: Laboratory

Laboratory: 2 credits (60 contact hours).

IMT 131 — Industrial Maintenance Electrical Concepts Lab(4)

Verifies knowledge of basic theory by making measurements in working AC and DC circuits. Various types of circuits are constructed and their parameters measured. This use of test equipment, safety, and troubleshooting are stressed. This lab course provides practical experience

in the construction, operation, and maintenance of AC and DC motors. Co-requisite: IMT 130 or Consent of Instructor. Components: Laboratory Laboratory: 4 credits (120 contact hours).

IMT 150 — Maintaining Industrial Equipment I (3)
Introduces the student to maintenance techniques and procedures used to maintain industrial equipment. Co-requisite: IMT 151 or Consent of Instructor. Components: Lecture Lecture: 3 credits (45 contact hours).

IMT 151 — Maintaining Industrial Equipment I Lab (2)
Provides the student with lab experience in the maintenance of industrial equipment. Co-requisite: IMT 150 or Consent of Instructor. Components: Laboratory Laboratory: 2 credits (60 contact hours).

IMT 198 — Practicum (3)
The Practicum provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Practicum do not receive compensation. Components: Practicum Prerequisites: Permission of Instructor

IMT 199 — Cooperative Education (3)
Co-op provides supervised on-the-job work experience related to the student's educational objective. Students participating in the Co-op Education program receive compensation for their work. Components: Co-Op Prerequisites: Permission of Instructor

IMT 220 — Industrial Maintenance Electrical Motor Controls I (3)
This course addresses the diversity of electric motor control devices and applications used in industry today with safety and electrical lockouts included. Components: Lecture Prerequisites: IMT 110, IMT 111

IMT 221 — Industrial Maintenance Electrical Motor Controls I Lab (2)
Addresses the diversity of control devices and applications used in industry today. Safety and electrical lockouts are also included. Co-requisite: [(IMT 110 and IMT 111) or Consent of Instructor]. Components: Laboratory Laboratory: 2 credits (60 contact hours).

IMT 230 — Industrial Maintenance of PLCs (5)
This course includes the theory or programmable logic controllers to include installation, programming, interfacing, and troubleshooting of industrial PLC's. Components: Lecture Prerequisites: IMT 240

IMT 231 — Industrial Maintenance of PLC's Lab (2)
Addresses the diversity of PLC control devices and applications used in industry today. Safety and electrical lockouts are also included. Prerequisites: [(IMT 110 and 111) or IMT 130 and 131] with a grade of C or greater] or Consent of Instructor. Co-requisites: IMT 230 or Consent of Instructor. Components: Laboratory Laboratory: 2 credits (60 contact hours).

IMT 240 — Industrial Maintenance Motor Control Concepts (6)
Addresses the diversity of control devices and applications used in industry today with safety and electrical lockouts included. The basic

theory of programmable logic controllers is also included. Prerequisites: [(IMT 110 and IMT 111) or (IMT 130 and IMT 131) with a grade of C or greater] or Consent of Instructor. Co-requisite: IMT 241 or Consent of Instructor. Components: Lecture Lecture: 6 credits (90 contact hours).

IMT 241 — Industrial Maintenance Motor Control Concepts Lab (4)
Verifies knowledge of basic theory by making measurements in working AC and DC circuits. Various types of circuits are constructed and their parameters measured. The use of test equipment, safety, and troubleshooting are stressed. This lab course also provides practical experience in the construction, operation, and maintenance of AC and DC motors. Prerequisites: [(IMT 110 and 111) or (IMT 130 and 131) with a grade of C or greater] or Consent of Instructor. Co-requisite: IMT 240 or Consent of Instructor. Laboratory 4 credits (120 contact hours). Components: Laboratory

IMT 250 — Maintaining Industrial Equipment II (3)
This class is designed to be an integration of the student's accumulative knowledge from the IMM 150 and IMM 151 courses. Special emphasis will be placed on troubleshooting techniques and applied machine repair situations that require the student to apply learned skills from all areas of the curriculum. Components: Lecture Prerequisites: Prerequisites: IMT 150, IMT 151

INTERDISCIPLINARY EARLY CHILDHOOD EDUCATION

IECE 101- Orientation to Early Childhood Education (3)
This course is a practical and realistic introduction to the early childhood profession. This course satisfies the requirements for the Kentucky Caregiver's Certificate and satisfies a portion of the training component of the Child Development Associate (CDA) credential. Required: 20 hours of field experience. (Equivalent to EC 120 Introduction to Early Childhood Education)

IECE 102- Foundations of Early Childhood Education (3)
This course builds on the student's knowledge of appropriate practices for children from birth to eight years of age in multiple care settings. Required: 20 hours of field experience. (This requirement may be waived by faculty for students who are concurrently enrolled in IECE 190 or IECE 290.)

IECE 120- Health, Safety and Nutrition (3)
This course develops an understanding of components and skills necessary for maintaining a healthy and safe environment for young children.

IECE 130- Early Childhood Development (3)
This course addresses the physical, cognitive, social, emotional, and language development of children beginning with conception. Methods of observation in early childhood settings are included and practiced during field experiences. Required: 10 hours of field experience. (This requirement may be waived by faculty for students who are concurrently enrolled in IECE 190 or IECE 290.) (Equivalent to FAM 255 Child Development)

IECE 140- Guidance of Young Children (3)
This course is a study of appropriate methods for guiding children and promoting the development of self-discipline. Required: 10 hours of field experience. (This requirement may be waived by faculty for students who are concurrently enrolled in IECE 190 or IECE 290.) Prerequisite:

IECE 130 or coordinator's approval. (Equivalent to FAM 256 Guidance Strategies)

IECE 170 – Observation and Assessment (3)
(Spring 2006)

Presents the process of observation, documentation, and assessment. Includes assessment skills, identification of appropriate methods and instruments, and linking results to planning, guidance, and instruction. Emphasizes recommended practices, ethical and legal responsibilities for educators, and the role of the family in the process. Required: 20 hours of field experience. Prerequisite: IECE 101, IECE 102, IECE 130 or coordinator's approval. (Equivalent to EC 130 Observing Young Children)

IECE 180- Approaches to Early Childhood Education Curriculum (3)

This course introduces the student to theoretical perspectives for curriculum in early childhood programs. It teaches the design of curriculum and examines the societal factors that impact programming for young children. Prerequisite: IECE 101, IECE 102, IECE 130 or coordinator's approval. (Equivalent to EC 200 Curriculum Development)

IECE 190- Applied Experiences in Early Childhood Education (3)

Students will participate in supervised teaching experiences in early childhood settings. Skills will include observing, planning, implementing, and assessing, learning experiences based on developmentally appropriate practices. (CDA ONLY) Prerequisite: Any 100 level IECE course or coordinator's approval

IECE 216- Literacy & Language in Interdisciplinary Early Childhood Education (3)

This course will aid the student in bringing together language theory with classroom instruction techniques to promote language and literacy development in young children. Required 10 hours of field experience. (This requirement may be waived by faculty for students who are concurrently enrolled in IECE 190 or IECE 290. Prerequisite: IECE 180 or coordinator's approval

IECE 221- Creative Expressions in Interdisciplinary Early Childhood Education (3)

This course addresses the role of creativity as it relates to the development of young children. A variety of art, music, drama, and movement experiences that encourage creative expression in young children are studied. Implementation of appropriate creative activities in a child-centered environment is included. Required: 10 hours of field experience. (This requirement may be waived by faculty for students who are concurrently enrolled in IECE 190 or IECE 290.) Prerequisite: IECE 180 or coordinator's approval

IECE 230 – Business Administration of ECE Programs (3)

Students are introduced to the many facets of establishing, operating and/or owning an early childhood program. Topics include legal forms for early childhood programs, finance, accounting, insurance, governmental regulations and assistance, economics, marketing and management principles.

IECE 235- Introduction to Inclusive Education (3)

This course introduces and sensitizes the student to exceptionalities that occur in the development of children. Topics include the law as related to serving children with exceptionalities and their families, various disabling conditions, the gifted, advocacy, home-based intervention, referral sources and the process of diagnosing, treating, and educating children with exceptionalities. Required: 20 hours of field experience. (This requirement may be waived by faculty for students who are concurrently enrolled in IECE 190 or IECE 290.) Prerequisite: IECE 180 or coordinator's approval (Equivalent to EC 220 Children with Exceptionalities)

IECE 240- Administration of Early Childhood Education (3)

This course focuses on the administrative responsibilities of creating and implementing quality education programs for young children and their families. This course will develop an understanding of administrative, organizational, and legal responsibilities in operating early childhood programs. Required: 10 hours of field experience. (This requirement may be waived by faculty for students who are concurrently enrolled in IECE190 or IECE 290.)

IECE 246- Life Sciences in Interdisciplinary Early Childhood Education (3)

This course provides a study of applying the concepts and principles of natural sciences, social sciences, and mathematics in learning experiences for young children. Students will plan and prepare developmentally appropriate curriculum including activities, materials, and units. Required: 10 hours of field experience. (This requirement may be waived by faculty for students who are concurrently enrolled in IECE 190 or IECE 290.) Prerequisite: IECE 180 or coordinator's approval

IECE 250- School Age Child Care (3)

This course provides the student with specialized knowledge, skills, and abilities for working with school age children.

IECE 260- Infant/Toddler Programming (3)

This course examines the development and educational needs of children from birth to age three. Students will learn to plan, prepare, and implement the care and educational environment for children birth to age three by integrating an understanding of the physical, social, emotional, and cognitive development with developmentally appropriate practices for each stage. Required: 10 hours of field experience. (This requirement may be waived by faculty for students who are concurrently enrolled in IECE 190/290.)

IECE 291- Practicum/Cooperative Education in IECE (3)

This course requires participation in supervised teaching experiences in early childhood settings where practical skills are applied. Skills include observing, planning, implementing, and assessing learning experiences based on developmentally appropriate practices. Required: 225 field hours of experience. Prerequisite: IECE 101, IECE 102, IECE 120, IECE 130, IECE 140, IECE 180, or coordinator's approval

IECE 299 – Special Topics in Interdisciplinary Early Childhood Education (1-3)

An in-depth knowledge of a selected topic in early childhood education is the goal of this course. The topic of study may be the student's choice per instructor's approval or an issue or topic developed by an instructor for course presentation. Pre-requisite: Coordinator's Approval

INFORMATION MANAGEMENT AND DESIGN

IMD 100 Introduction to Information Systems (3)

Essential computer concepts and terminology are introduced in this course. An overview of operating systems software, a graphical user interface environment and multitasking concepts, disk and file management, Internet capabilities, and telecommunications are included. Introduction to word processing, spreadsheets, databases, and the integration of these three applications are included.

IMD 114 Information Literacy (3)

This course is an introduction to the use of information resources, both traditional print materials and online materials, for academic and professional research. Topics include development of search strategy, evaluation of resources, use of database search techniques, ethical and legal aspects of information management and documentation of sources.

IMD 115 Introduction to Computer Graphic Design (3)

In this course, students will be introduced to the theory and techniques behind computer graphic design. Students will be introduced to layout; color theory and use; design, photo and illustration techniques; and exploration of media in respect to digital design. Also, students will be introduced to the production process including pre-press, printing, other production techniques and distribution. Prerequisite: IMD 100 or CIS 105 or equivalent skills.

IMD 116 Keyboarding (2)

Students use a microcomputer and software to develop proper techniques of touch keyboarding. Speed, accuracy and control are emphasized.

IMD 117 Keyboarding and Basic Word Processing (3)

Students use a microcomputer and software to develop proper techniques of touch keyboarding. Basic word processing skills are integrated with a thorough study of form, style, and arrangement of business documents. Speed, accuracy and control are emphasized.

IMD 118 Document Processing (3)

Document formatting and word processing techniques are integrated to produce a wide variety of business documents. Emphasis is placed upon planning, organizing, and formatting business documents and upon meeting production standards essential to the operation of modern offices. Prerequisite: IMD 117 or consent of instructor.

IMD 120 Introduction to the Internet (1)

In this course, students will develop skills in understanding and using Internet technologies. Topics include the World Wide Web, e-mail, chat, mailing lists, newsgroups, video conferencing and webcasting. In addition, current issues surrounding the Internet such as free speech, viruses, privacy concerns, Internet culture and the exponential rise of misinformation will be explored.

IMD 126 Introduction to Desktop Publishing (3)

The use of microcomputers for designing and producing various publications is introduced. Hands-on experience is provided in using desktop publishing software and a laser printer to produce high-resolution publications, such as flyers, brochures, business forms, and newsletters. Students are also introduced to basic design techniques, type and graphics layout, and the related terminology. Prerequisite: IMD 100 or equivalent skills.

IMD 127 Vector Design with Adobe Illustrator (3)

In this course, students will be introduced to and develop vector (line-based) graphics using industry-standard application(s). Topics covered will include examining the theory behind vector graphics, investigating the advertising and print industries' use of this type of graphic, creation of graphics from simple to increasingly complex, as well as development of a portfolio of vector art. Prerequisite: IMD 115 or concurrent or consent of instructor.

IMD 128 Raster Design with Adobe PhotoShop (3)

In this course, students will be introduced to and develop raster (photo or pixel-based) graphics using industry-standard application(s). Topics covered will include examining the theory behind raster graphics, investigating the advertising and print industries' use of this type of graphic, creation and manipulation of raster-based graphics from simple to increasingly complex, as well as development of a portfolio of raster art and photo editing and manipulation samples. Prerequisite: IMD 115 or concurrent or consent of instructor.

IMD 130 Introduction to Web Pages (2)

An introduction to the creation and publication of a web site. The course will cover Hypertext Markup Language (HTML), using HTML codes for web design, incorporating graphics and images into web pages, and publishing pages on the web. Prerequisite: IMD 120 or equivalent.

IMD 132 Web Page Editors (1)

In this course, students will be introduced to basic web base authoring and publishing software. Students will use a web page editor to create effective web pages and upload them to the World Wide Web. Prerequisite: IMD 130 or consent of instructor.

IMD 133 Beginning Web Design (3)

This course is an introduction to the creation and publication of a web site. The course covers hypertext markup language (HTML), using HTML code and web authoring application software for web design, incorporating graphics into web pages, and publishing a web site.

IMD 150 Presentations (3)

In this course, students will learn to produce and present digital presentations, making effective use of correct grammar, presentation writing style, topography, graphics, sound and video. Students will install and use current digital hardware and software.

IMD 160 Introduction to E-commerce (3)

Students are introduced to the concepts, issues and application of business on the Internet. Students will examine the business as well as technical aspects of e-commerce. Topics include the relationship of business and the Internet, types and specific examples of e-business, the planning and development of an e-business as well as security issues, monetary transaction options, international concerns, legal and regulatory issues, ethical concerns, and the future of e-commerce. Specific technical issues will include examination of Internet infrastructure including the options, functions of the web server as well as e-commerce software options. Students will create an e-commerce business website plan and develop it into a simple, effective e-business website. Prerequisite: IMD 100 or CIS 105 or consent of instructor.

IMD 175 Web Usability Design (3)

Students focus on effective communication through web design. Topics include web planning, navigation and usability based on market research (audience capabilities and preferences) as well as site content and goals, financial considerations and technical capabilities. Other issues such as browser compatibility, marketing and site "gimmicks", customer tracking, and site redesign will be addressed. Prerequisite: IMD 133 or consent of instructor.

IMD 180 Intermediate Web Design (3)

Students develop advanced hypertext markup language (HTML) skills as well as examine new standards and technologies. Topics include extensible hypertext markup language (XHTML), well-formed documents, tables, frames, forms, image maps, multimedia, image optimization, cascading style sheets (CSS), site planning, working with clients and the web design business. Students will complete a well formed website on a specific topic utilizing the theories and technologies learned. Prerequisite: IMD 133 or consent of instructor.

IMD 185 Web Graphics Design (3)

In this course, students will be introduced to the theory and techniques behind the design of high-quality and efficient graphics for the World Wide Web. Topics covered include theory behind design for the Web, creation of gifs, animated gifs and jpegs, text as graphics, and sliced images for the web. Prerequisite: IMD 133

IMD 205 Computerized Accounting Systems (3)

In this course, students will be introduced to financial accounting software. Topics and issues addressed in this applications-based course include analyzing business transaction; recording and posting business transactions; recording period end adjustments and completing the end-of-period closing process; implement internal cash controls: processing payroll activities; and recording transactions for merchandising businesses.

IMD 210 Microsoft Office Applications (3)

Students expand their Microsoft Office skills utilizing word processing, spreadsheet, database management, presentation and desktop information management applications for the creation and integration of information. Prerequisite: IMD 100 or equivalent.

IMD 212 Advanced Microsoft Office Application (3)

Students learn advanced Microsoft Office skills utilizing spreadsheet and database management applications through creation, management and integration of documents. Prerequisite: IMD 210 or consent of instructor.

IMD 215 Administrative Office Procedures (3)

The roles and responsibilities of the office professional and the inter-relationships of people, procedures, and technology are introduced, with emphasis on appropriate decision-making techniques and productivity in the office. Prerequisite: IMD 118 or consent of instructor.

IMD 220 Administrative Office Simulations (3)

Students use administrative procedures to complete office simulations with an emphasis on accuracy, productivity, efficiency, and problem solving. Students will be utilizing skills in word processing, spreadsheet, database management, presentation, and e-mail applications. Standard business transactions will be completed through electronic commerce. Prerequisite: IMD 150; IMD 235; IMD 212 or concurrent; or consent of instructor

IMD 225 Applied Web Graphics (3)

Students focus on developing advanced web graphic design skills. Topics include creation of sophisticated gifs, jpegs, pngs and sliced images for integration into complex layouts involving tables, frames, cascading style sheets (CSS) and layers. Practical applicability also will be cultivated through the design of a professional website. Prerequisite: IMD 180 and IMD 185, or consent of instructor.

IMD 226 Advanced Desktop Publishing (3)

In this course, students will learn to design and produce text- and image-intensive publications. Industry-standard desktop publishing software will be utilized to create brochures, newsletters, proposals and other documents. Students also will use drawing and image-editing software for the purpose of creating and editing graphics for publications. Emphasis will be placed on importing text and graphics from word processing and graphics programs into desktop publishing software. Students will study the desktop publishing process from concept and creation through pre-press and printing. Prerequisite: IMD 126; IMD 127, 128 and 150 or concurrent; or consent of instructor.

IMD 227 Vector and Raster Design (3)

In this course, students will be introduced to vector (line-based) and raster (photo or pixel-based) graphics. Topics covered will include theory behind vector and raster graphics as well as creation of graphics in vector and raster art software packages. Prerequisite: IMD 115 or concurrent or consent of instructor.

IMD 230 Advanced Web Design (3)

In their role as web designers, students will be exposed to existing and emerging web technologies. Topics and issues include modification of prewritten scripts and applets as well as discussion of current client and server-side technologies including JavaScript, DHTML, Java, CGI/Perl, PHP, Cold Fusion, SQL, ASP and XML. Prerequisite: IMD 180 or consent of instructor.

IMD 232 Professional Web Editors (3)

Students learn how to use and customize advanced web authoring software. A professional WYSIWYG (what-you-see-is-what-you-get) editor will be used to develop and create web pages, automate

production, and manage and maintain entire websites. Students will build on their Hypertext Markup Language (HTML) and web development knowledge to customize features and integrate applications. This class will also focus on efficiency and working in a team-based environment. Prerequisite: IMD 180 or consent of instructor.

IMD 235 Advanced Word Processing (3)

Students will learn current word processing software from intermediate skills through advanced utilities. Topics include producing customized documents, enhancing the visual display of documents, creating customized desktop publishing documents, organizing text in documents using advanced features, and integrating data utilizing various applications. Emphasis will be on mastering the software for optimal use. Prerequisite: IMD 210 or CIS 130, or equivalent skills.

IMD 240 Animation for the Web (3)

Students learn to design and deliver low-bandwidth web animations with professional, industry-standard applications. Students will also use industry-standard vector-based applications to create graphics for integration with animation. Prerequisite: IMD 180, IMD 185, IMD 232, or consent of instructor.

IMD 245 Multimedia for the Web (3)

Students develop multimedia products for information delivery, training and advertising on the web using industry-standard applications. Students will storyboard, plan, produce and execute a multimedia product; integrate the final product into a web environment; and test for product performance and correct production flaws. Students will also explore topics such as platform and server considerations and limitations and the basics of continuity in multimedia design. Prerequisite: IMD 180 and IMD 185; or consent of instructor.

IMD 250 Digital Video Editing with Final Cut Pro (3)

Students will capture and edit digital video using industry-standard desktop video software and export to DVD, VHS, and the Internet for use in entertainment, documentary films, commercials, and newscasts. Students will learn to storyboard, plan, and produce a digital video project from conception to final packaging and explore topics such as compositing, alpha channels, and special effects. IMD 100 or IMD 133 or consent of instructor

IMD 270 Professional Practices (3)

This course is designed to assist students develop strategies for entering the Information Management & Design profession by editing and refining portfolios and creating correspondence to meet professional standards, designing resumes and other self-promotional materials, developing a job search strategy, practicing interview techniques and professional presentations. IMD 210 or IMD 235 or consent of instructor

IMD 271 Internship (1-3)

On-the-job experience will be required of the Information Management & Design student. A minimum of 40 clock hours of appropriate experience per credit hour will be required. The learning plan will be discussed and agreed upon by the student, instructor and site supervisor. Prerequisite: Consent of instructor, 2.0 G.P.A., and the completion of 12 credit hours of IMD course work (including IMD 270).

IMD 275 Workplace Management (3)

Management principles and techniques and their applications to the contemporary business workplace are included. Emphasis is on information management, team concepts and the role of personnel management.

IMD 276 Legal Office Procedures (3)
Legal office procedures and the transcription of legal forms and documents are included in this course. Prerequisite: IMD 118 or BE 267.

IMD 278 Medical Office Procedures (3)
Medical office procedures using a medical practice management software program, medical coding, and the transcription of medical forms, histories, and reports are included in this course. Prerequisite: IMD 118, CLA 131, or consent of instructor.

IMD 280 Applied Computer Graphic Design (3)
In this course, students will study graphic and commercial design techniques in conjunction with exploration of advanced computer graphic software. Students will also apply and integrate theory and techniques explored in earlier graphics classes. This course will be the capstone for students choosing the graphics option. Presentation, vector, raster, desktop publishing, web development and multimedia software will be utilized to create design-intensive, portfolio pieces. Prerequisite: IMD 224, IMD 226, IMD 227 or IMD 127 and IMD 128,, or consent of instructor.

IMD 292 Portfolio Practicum: Web Design (3)
In this capstone course, students will assemble a comprehensive web site design portfolio using skills learned in the IMD Web Design core courses. The purpose of the portfolio will be to assess students' overall skills learned in the web design option. It will also be used to provide IMD students with a professional design portfolio to aid in the search for employment. Students will use Macromedia Fireworks, Dreamweaver, Flash, Adobe Photoshop/ImageReady, and dynamic scripting languages to assemble the comprehensive design portfolio. Prerequisite: IMD 225, 232, 240 or consent of instructor.

IMD 299 Selected Topics in Information Management and Design (1-3)
This course is designed to expand course offerings as new technology is developed, as well as consider contemporary and/or emerging trends in information management and design. Topics may vary from semester to semester at the discretion of the instructor; course may be repeated with different topics to a maximum of six credit hours. Prerequisite: Consent of instructor.

JAPANESE

JPN 101 Beginning Japanese I (4)
A course in first semester Japanese language.

JPN 102 Beginning Japanese II (4)
A course in second semester Japanese language. Prerequisite: JPN 101 or equivalent.

JOURNALISM

JOU 101 Introduction to Journalism (3)
This course surveys the history and social theories of journalism and introduces students to contemporary journalistic practice. Student will learn about the function and operation of print, electronic and on-line news media. Issues and concepts to be covered include the relationship of government to media; press freedom and controls; media ethics, and the impact of global communications. The course also covers the relationship of journalism to advertising, public relations and telecommunications, particularly with regard to new technologies. Prerequisite: JOU pre-majors only or consent of instructor.

JOU 204 Writing for the Mass Media (3)
An introduction to the concepts and techniques of media writing.

This course offers hands-on instruction in information gathering, organization, and writing for print, broadcast and on-line media. Lecture: one hour; laboratory: four hours per week. Prerequisite: JOU pre-major status; JOU 101 or consent of instructor.

KINESIOLOGY AND HEALTH PROMOTION

KHP 100-KHP 135 Service Courses (1)
Instruction in a variety of motor skills activities. Courses are designed for students at a beginner level. Up to six hours credit may be earned in service courses; however, the same activity may not be repeated for credit.

KHP 230 — Human Health and Wellness (3)
The study of health promotion, wellness, and disease prevention concepts as applied to individual, familial, and community health.

LIBRARY INFORMATION TECHNOLOGY

LIT 115 Introduction to Reference Services (3)
This course presents an introduction to library reference sources and services. Reference interview techniques, use of standard print and online reference tools, bibliographic databases, web search engines and subject guides, and online full-text books, periodicals, documents, and interlibrary loan services are among the topics included. This is a web-based distance course that involves service learning activities.

LIT 124 Library Administration (3)
This course provides an introduction to basic principles of library organization and management. Emphasis is on the practical application of management concepts to the effective administration of library systems. This is a web-based distance course. Prerequisite: LIT 115 or consent of instructor.

LIT 132 Library Technical Services (3)
This course is an introduction to library technical services. Acquisitions, processing, cataloging and classification are introduced. This is a web-based distance course. LIT 115 or consent of instructor.

LIT 200 Seminar in Kentucky Literature (Subtitle Required) (3)
This is an online or computer-assisted seminar course in Kentucky literature recognizing, examining, and studying distinct regional differences and similarities with concentration on major contemporary and traditional Kentucky writers and their texts. Topics will vary, from a group of authors, and historical period or aesthetic movement, to a genre, a theme, or an aspect of literary theory.

LIT 230 Web Publishing for Libraries (3)
This is a course in web publishing for library web sites, including HTML code, web page authoring software, web page and web site design, and trends in library web sites. This is a distance education course with a service learning component. Prerequisite: LIT 115 or consent of instructor.

LIT 240 Literature of Appalachian Kentucky (3)
This is an online or computer-assisted introductory survey course in the Appalachian literature of Kentucky concentrating on the major contemporary and traditional writers who are distinctly identified with that region. Approaches may include a group of authors, an historical period or aesthetic movement, a genre, a theme, or an aspect of literary theory.

LIT 241 Literature of Central Kentucky (3)
This is an online or computer-assisted introductory course in the

literature of Central Kentucky concentrating on the major contemporary and traditional writers who are distinctly identified with that region. Approaches may include a group of authors, an historical period or aesthetic movement, a genre, a theme, or an aspect of literary theory.

LIT 242 Literature of Western Kentucky (3)

This is an online or computer-assisted introductory survey course in the literature of Western Kentucky which concentrating on the major contemporary and traditional writers who are distinctly identified with that region. Approaches may include a group of authors, an historical period, or aesthetic movement, a genre, a theme or an aspect of literary theory.

LIT 243 Library Services for Children (3)

This course is a study of library services for children. Topics include library programming development and production, children's literature, collection development, Internet resources, and legal issues. This is a web-based distance course that involves service learning activities. Prerequisite: LIT 115 or consent of instructor.

LIT 245 Library Services for Young Adults (3)

This course is a study of library services for young adults from 6th to 12th grades. Topics include programming, collection development, the use of the Internet, and ethical and legal issues. Emphasis is on the development and promotion of young adult library services. This is a web-based distance course that involves service learning activities. Prerequisite: LIT 115 or consent of instructor.

LIT 247 Library Services for Adults (3)

This is a study of library services for adults. Topics include adult literature, collection development, reader's advisory service, programming, circulation services, reference services, and customer relations. This is a web-based distance course that involves service learning activities. Prerequisite: LIT 115 or consent of instructor.

LIT 248 Library Services for Preschool Children (3)

This course is a study of library services for preschool children, age infant to 5 years. Topics include library programming development and production, preschool children's literature, services for parents and for child care services, collection development, and legal issues. This is a web-based distance course that requires service learning activities. Prerequisite: LIT 115.

LIT 280 Genealogy Services in Libraries (3)

This course prepares librarians to provide quality services to genealogical patrons. Topics include: definitions of genealogy and motivations of patrons; genealogical data, sources, and research methods; reference interviews; orientation of patrons to genealogical resources; collection development; interlibrary loan; patron referral; and legal and ethical issues relating to genealogical research. This is a web-based distance course that requires a service learning project. Prerequisite : LIT 115 or consent of instructor.

LIT 285 History of Libraries (3)

This course is a survey of the development of libraries from ancient times to the present, with emphasis on academic and public libraries in the United States. Attention is given to the interaction of libraries with economic, social and political trends in the larger society. LIT 115 or consent of instructor

LIT 299 Selected Topics in Library Information Technology: Topic (1-3)

This course is designed to expand library course offerings as new technologies develop, new issues evolve, and/or to address local library issues. Topics may vary from semester to semester at the discretion of the instructor. Course may be repeated with different topics to a maximum of nine credit hours. This is a web-based distance course that

involves service learning activities. Prerequisite: LIT 115 or consent of instructor.

MACHINE TOOL TECHNOLOGY

MTT 110 — Fundamentals of Machine Tools – A (3)

Provides the basic principles needed for a solid foundation in machine tool technology. Areas and machines covered include shop safety, benchwork, drill press, power saw, measurement, and mills. Components: Laboratory, Lecture.

Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours/30:1 ratio).

MTT 112 — Fundamentals of Machine Tools – B (4)

Provides the basic principles needed for a solid foundation in machine tool technology. Areas and machines covered include shop safety, benchwork, drill press, power saw, measurement, and mills. Components: Laboratory, Lecture.

Lecture: 2 credits (30 contact hours); Laboratory: 2 credits (60 contact hours/30:1 ratio). Prerequisites: MTT 110 with a grade of C or greater or Consent of Instructor.

MTT 114 — Fundamentals of Machine Tools (7)

Provides the skills and knowledge that is needed to progress through the machine tool program. It will include safety and benchwork. The student will be introduced to the basic power equipment and machine tools that are used in the machine trades which includes: drill presses, power saws, measurement instruments, mills and lathes. Components: Laboratory, Lecture. Lecture: 3 credits (45 contact hours); Laboratory: 4 credits. (120 contact hours/30:1 ratio).

MTT 118 — Metrology/Control Charts (3)

Provides the basic principles in using precision measurement instruments and their application to inspection and quality control. Components: Lecture. Lecture: 3 credits (45 contact hours).

MTT 120 — Applied Machining I (3)

Consists of intermediate level skills using machining machines and surface grinders. It will include the selection of grinding wheels. Components: Laboratory, Lecture. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours/30:1 ratio). Prerequisites: MTT 110 and 112 or MTT 114 with a grade of C or greater in the MTT course(s) or Consent of Instructor.

MTT 122 — Applied Machining II (4)

Carries the student to higher levels in the operation of machine tools. Components: Laboratory, Lecture. Lecture: 2 credits (30 contact hours); Laboratory: 2 credits (60 contact hours/30:1 ratio). Prerequisites: MTT 120 with a grade of C or greater or Consent of Instructor.

MTT 124 — Applied Machining (7)

Allows the student to begin performing skills that will combine the use of different types of machines and begin to give them a complete picture of the machine tool career. Components: Laboratory, Lecture. Lecture: 3 credits (45 contact hours); Laboratory: 4 credits (120 contact hours/30:1 ratio). Prerequisites: MTT 110 and 112 or MTT 114 with a grade of C or greater in the MTT course(s) or Consent of Instructor.

MTT 130 — Manual Programming (3)

Introduces the student to CNC codes and programming, set-up and operation of CNC machine tools. Components: Laboratory, Lecture. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours/30:1 ratio).

MTT 132 — CAD/CAM/CNC (3)
Introduces the student to CAD/CAM/CNC systems which includes CAM software. Components: Laboratory, Lecture. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours/30:1 ratio).

MTT 134 — Manual Programming CAD/CAM/CNC (6)
Introduces the student to CAD/CAM/CNC systems, CNC format, the Cartesian Coordinate System, CNC codes and programming, set-up and operation of CNC machine tools. Components: Laboratory, Lecture. Lecture: 2 credits (30 contact hours); Laboratory: 4 credits (120 contact hours/30:1 ratio). Prerequisites: MTT 114 with a grade of C or greater or Consent of Instructor.

MTT 150 — Shop Theory (2)
Provides the student with an understanding of shop theory, processes and basic concepts of machine tool applications utilized in the tool and die field. Areas and machine concepts covered include safety, measurement, layout work, bench work, saws, drills, drilling machines, mills, and lathes. Components: Lecture. Lecture: 2 credits (30 contact hours).

MTT 151 — Machinery's Handbook and Metallurgy (2)
Introduces the student to the Machinery's Handbook as a reference source for solving manufacturing problems and provides a working knowledge of the principles and concepts contained in the Handbook. Explores the many processes involved in heat-treating steels to specific hardness, toughness, and wear capability. Includes identification, classification, application, and processing of Tool Steels. Components: Lecture. Lecture: 2 credits (30 contact hours).

MTT 152 — Jigs, Fixtures and Gaging (3)
Provides students with an understanding of jigs, fixtures, and work holding devices and their separate uses and principles. Utilizes knowledge of machining processes to design jigs and fixtures for different applications. Utilizes print knowledge to identify part datums for gaging points. Components: Lecture. Lecture: 3 credits (45 contact hours).

MTT 153 — Mold Theory (3)
Provides students with a basic study of mold making. Includes thermoplastic and thermosetting materials, compression mold, transfer mold, injection molds and mold components, the heating and cooling of molds, and the methods of producing cores and cavities. Components: Lecture. Lecture: 3 credits (45 contact hours).

MTT 154 — Die Theory (3)
Provides the student with a study of basic die making. Includes die sets, punch presses, blanking dies, piercing dies, screw and dowel holes, punch and punch blocks, die life, bending dies, pilots, die block construction, stock strippers, stock guides, progressive dies, stock strips, and secondary operations of notch, trim, and shave. Components: Lecture. Lecture: 3 credits (45 contact hours).

MTT 210 — Industrial Machining I (3)
Covers the classification of metals, identification of tool steels and their applications. The student will be required to perform advanced milling machine operations that simulate industry standards. Components: Laboratory, Lecture. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours/30:1 ratio). Prerequisites: MTT 122 or 124 with a grade of C or greater or Consent of Instructor.

MTT 212 — Industrial Machining II (4)
Designed to allow the student to receive instruction in any area where advanced work is needed or an area where there is student interest. Components: Laboratory, Lecture. Lecture: 2 credits (30 contact hours); Laboratory: 2 credits (60 contact hours/30:1 ratio). Prerequisites: MTT 210 with a grade of C or greater or Consent of Instructor.

MTT 214 — Industrial Machining (7)
Covers the classification of metals, identification of tool steels and their applications. The student will be required to perform advanced milling machine operations that simulate industry standards. Special projects are included in this course so the student will receive instruction in a specific area. Components: Laboratory, Lecture. Lecture: 3 credits (45 contact hours); Laboratory: 4 credits (120 contact hours/30:1). Prerequisites: MTT 122 or 124 with a grade of C or greater or Consent of Instructor.

MTT 220 — Advanced Industrial Machining I (4)
Designed to allow for the construction of electrodes and the production of parts by the use of an Electric Discharge Machine. **National Standards require EDM and cylindrical grinder training. Colleges lacking this equipment can only present theory. KCTCS is presently trying to acquire EDM and cylindrical grinders. Components: Laboratory. Laboratory: 4 credits (120 contact hours/30:1 ratio). Prerequisites: MTT 134 and MTT 212 or 214 with a grade of C or greater in each MTT course or Consent of Instructor.

MTT 222 — Advanced Industrial Machining II (2)
Advances students to a higher level of industrial standards by exposing them to additional tasks using a cylindrical grinder. **National Standards require EDM and cylindrical grinder training. Those programs lacking this equipment can only present theory. KCTCS is presently trying to acquire EDM and cylindrical. Components: Laboratory. Laboratory: 2 credits (60 contact hours/30:1 ratio). Prerequisites: MTT 212 or 214 with a grade of C or greater or Consent of Instructor.

MTT 224 — Advanced Industrial Machining (6)
Designed to allow for the construction of electrodes and the production of parts by the use of an Electric Discharge Machine (EDM), cylindrical grinder, and other type of grinders. **National Standards require EDM and cylindrical grinder training. Colleges lacking this equipment can only present theory. KCTCS is presently trying to acquire EDM and cylindrical grinders. Prerequisites: MTT 134 and MTT 212 or MTT 214 with a grade of C or greater in each MTT course or Consent of Instructor. Components: Laboratory. Laboratory: 6 credits (180 contact hours or 270 Clinical Contact).

MTT 230 — Conversational Programming (6)
Introduces the student to conversational programming of CNC machine tools. Prerequisites: Consent of Instructor. Components: Lecture. Lecture: 2 credits (30 contact hours). Laboratory: 4 credits (120 contact hours).

MTT 240 — Introduction to 3-D Programming (6)
Introduction to 3-D Programming using CAM systems to effect engineering changes that enhance productivity. The CAM system utilized will be used to create and produce complex 3-D parts. Prerequisites: MTT 134 with a grade of C or greater or Consent of Instructor. Components: Lecture. Lecture: 2 credits (30 contact hours). Laboratory: 4 credits (120 contact hours or 180 clinical contact).

MTT 298 — Practicum (2)
The practicum provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Practicum do not receive compensation. Components: Practicum. Prerequisites: Permission of the Instructor

MTT 299 — Cooperative Education Program (2)
Co-op provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Co-op Education program receive compensation for their work. Components: Co-Op. Prerequisites: Permission of Instructor

MTT 2301 — Introduction to Conversational Programming (3)

Introduce students to conversational programming guidelines which will include program preparation, conversational input, and minor editing. Prerequisites: Consent of Instructor. Components: Lecture. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours).

MTT 2302 — Conversational Editing and Subroutines (3)

Introduces students to performing editing routines, to subroutines, and to programs that contain loops. Students will also interpret error messages from the control. Prerequisites: MTT 2301 or Consent of Instructor. Components: Lecture. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours).

MTT 2401 — Introduction to 3D Code Sequencing and Tool Path Production (3)

Introduces students to creation of 3-D models and allows those models to be used in creation of tool paths for CNC machine tools. Prerequisites: MTT 134 with a grade of C or greater or Consent of Instructor. Components: Lecture. Lecture: 1 credit (15 contact hours); Laboratory: 2 credits (60 contact hours).

MTT 2402 — Advanced 3D Code Sequencing and Macro Systems (3)

Introduces students to more advanced manipulation of 3-D images, including projecting to surfaces, creating wrap tool paths, and macro capabilities. Prerequisites: (MTT 134 and MTT 2401) with a grade of C or greater in each MTT course or Consent of Instructor. Lecture 1 credit (15 contact hours). Components: Lecture. Laboratory: 2 credits (60 contact hours).

MATHEMATICS

MA 108R Intermediate Algebra (3)

This course is remedial in nature and covers material commonly found in second year high school algebra. Specific topics to be discussed include numbers, fractions, algebraic expression, simplifying, factoring, laws of exponents, linear equations, simple graphs and polynomial algebra. This course is not available for degree credit toward a bachelor's degree. Credit not available on the basis of special examination. Prerequisite: One year of high school algebra. Recommended for students with a Math ACTE score of 18 or less, or consent of department.

MA 109/MA 150 College Algebra (3)

Selected topics in algebra and analytic geometry. Develops manipulative algebraic skills required for successful calculus study. Includes brief review of basic algebra, quadratic formula, systems of linear equations, introduction to analytic geometry including conic sections and graphing. This course is not available for credit to persons who have received credit in any mathematics course of a higher number with the exceptions of MA 112, 123, 162, 199, 201 and 202. Credit not available on the basis of special examination. Prerequisite: Two years of high school algebra and a Math ACTE score of 19 or above, or MA 108R, or math placement test. III

MA 110 Analytic Geometry and Trigonometry (4)

This is a course specifically designed for students intending to enroll in a calculus sequence. Topics will include trigonometric functions, exponentials and logarithms, graphs, polar coordinates, conic sections and systems of conics. Students may not receive credit for MA 110 and either of MA 109 or MA 112. This course is not available for credit to students who have received credit in any higher numbered mathematics course except for MA 123, 162, 199, 201 or 202. Credit is not available by special examination. Lecture: 3 hours, recitation, 2 hours per week.

Prerequisite: Two years of high school algebra and a Math ACTE score of 23 or above, or consent of department. III

MA 111 Contemporary Mathematics (3)

An introduction to concepts and applications of mathematics, with examples drawn from such areas as voting methods, apportionment, consumer finance, graph theory, tilings, polyhedra, number theory and game theory. This course is not available for credit to persons who have received credit in any mathematics course of a higher number with the exceptions of MA 112, 123, 162, 201 and 202. This course does not serve as a prerequisite for any calculus course. Credit not available on that basis of special examination. Prerequisite: Two years of high school algebra and a Math ACTE score of 19 or above, or MA 108R, or math placement test.

MA 112 Trigonometry (2)

A standard course. Includes trigonometric functions, identities, multiple analytic formulas, laws of sines and cosines and graphs of trigonometric functions. This course is not available to persons who have received credit for any mathematics course of a higher number with the exception of MA 113, 123, 131, 132 and 162. Credit not available by special examination. Prerequisite: Two years of high school algebra or MA 108R. III

MA 113 Calculus I (4)

A course in one-variable calculus, including topics from analytic geometry. Derivatives and integrals of elementary functions (including the trigonometric functions) with applications. Lecture: 3 hours, recitation, 2 hours per week. Prerequisite: Math ACTE score of 26 or above, or MA 109 and MA 112, or MA 110, or consent of department. III

MA 114 Calculus II (4)

A continuation of MA 113, primarily stressing techniques of integration. Lecture: 3 hours, recitation, 2 hours per week. Prerequisite: High school trigonometry or MA 112; and a grade of C or better in MA 113 or MA 132. III

MA 123 Elementary Calculus and Its Applications (3)

An introduction to differential and integral calculus, with applications to business and the biological and physical sciences. Not open to students who have credit in MA 113. Prerequisite: Math ACTE score of 21 or above, or MA 109 or math placement test. III

MA 162 Finite Mathematics and Its Applications (3)

Finite mathematics with applications to business, biology, and the social sciences. Linear functions and inequalities, matrix algebra, linear programming, probability. Emphasis on setting up mathematical models from stated problems. Prerequisite: MA 109 or equivalent. III

MA 193 Supplementary Mathematics Workshop I: (Subtitle required) (1-2)

Laboratory offered (only) as an adjunct to certain mathematics lecture courses. Offered only on a pass/fail basis. Coreq: Set by instructor.

MA 194 Supplementary Mathematics Workshop II: (Subtitle required) (1-2)

Laboratory offered (only) as an adjunct to certain mathematics lecture courses. Offered only on a pass/fail basis. Coreq: Set by instructor.

MA 201 Mathematics for Elementary Teachers (3)

Basic concepts of measurement, geometry, probability, and statistics. Recommended only for majors in early elementary and middle school education. Prerequisite: MA 109. III

MA 202 Mathematical Problem Solving for Elementary Teachers (3)

Development of mathematical problem solving skills. Students will solve problems from such areas as algebra, geometry, probability, number theory, and logic. Credit not available on the basis of special examination. Prerequisite: A grade of "C" or better in MA 201. Also recommended: a course in logic (e.g. PHI 120) or a course in calculus (e.g. MA 123). III

MA 213 Calculus III (4)

MA 213 is a course in multivariate calculus. Topics include three-dimensional vectors calculus, partial derivatives, double and triple integrals, sequences, and infinite series. Lecture: 3 hours, recitation, 2 hours per week. Prerequisite: MA 114 or equivalent. III

MA 214 Calculus IV (3)

MA 214 is a course in ordinary differential equations. Emphasis is on first and second order equations and applications. The course includes series solutions of second order equations and Laplace transform methods. Prerequisite: MA 213 or equivalent. III

MA 241 Geometry for Middle School Teachers (3)

A course in plane and solid geometry designed to give middle school mathematics teachers the knowledge needed to teach a beginning geometry course. Cannot be counted toward the mathematics minor or major. Prerequisite: One semester of calculus.

MAH 061 (MT 055) Pre-Algebra (3)

Students will enhance their understanding of rational numbers and linear equations. Emphasis will be placed on the vocabulary and manipulative skills needed for operations involving whole numbers, fractions, decimal numbers, percents, signed numbers, and simple algebraic expressions, and for solving simple linear equations.

MAH 065 Mathematics Laboratory (1)

Designed to supplement the lecture class, this laboratory may be taken concurrently with any mathematics course. This course can be repeated for each mathematics course taken. Laboratory: 2 hours per week. Pass/Fail only.

MAH 070 (MT 065) Elementary Algebra (3)

Material commonly found in first-year high school algebra is studied. Topics include rational numbers, variable expressions, linear equations, inequalities, exponents, polynomials, factoring and rational expressions.

MAH 121 (MT 105) Mathematics for Business (3)

Basic mathematical concepts as applied to finance are covered. Topics include percentages, markup, simple and compound interest, discounts, annuities, debt installments, depreciation, and financial statements. Prerequisite: MAH 070 or equivalent as determined by placement examination. III for AAS degrees only.

MAH 125 (MT 115) Technical Mathematics (3)

Some mathematical concepts from algebra, geometry and trigonometry, with an emphasis on geometrical ideas and applications, are studied. Topics to be covered include scientific notation, unit conversions, linear equations in two variables, variation, measurement of geometric figures, solving triangles using trigonometry, and problems involving applications of these topics. Prerequisite: MAH 070 or equivalent as determined by placement examination. III for AAS degrees only.

MAH 155 Applied Mathematics (3)

After a review of rational numbers, the concepts of ratios and proportions, scientific notation, units and conversions, linear equations in two variables, percents, interest, and descriptive statistics are covered. Emphasis is on application in the various technology programs. Prerequisites: MAH 070, or equivalent as determined by placement

examination.

MT 55 (MAH 061) — Pre-Algebra (3)

Students enhance their understanding and manipulative skills in the arithmetic of rational numbers. Topics include whole numbers, powers and square roots, fractions, decimal fractions, percents, ratios, proportions, signed numbers, order of operations, prime factorization, basic formulas in geometry, measurement and tables and graphs. Components: Lecture. Lecture: 3 credits (45 contact hours).

MT 65 (MAH 070) — Basic Algebra with Measurement (3)

Basic algebra course covering variable expressions, linear equations and inequalities, exponents, polynomials, factoring, square and cube roots, scientific and engineering notation, elementary graphing, and measurement unit and conversions. Components: Lecture. Lecture: 3 credits (45 contact hours). Prerequisites: MT 055 or equivalent as determined by KCTCS placement examination.

MEDICAL ASSISTING**MAI 105 — Introduction to Medical Assisting** (3)

Introduction to Medical Assisting is designed to introduce the rights, roles, responsibilities and functions of the medical assistant. Emphasis is placed on personal and professional awareness, interpersonal relationships, psychological concepts, ethics, legalities, and communications across the life span. Components: Lecture. Lecture: 3 credits (45 contact hours). Prerequisites: Acceptance into the Medical Assisting program or consent of Medical Assisting Coordinator/Director.

MAI 120 — Medical Assisting Laboratory Techniques I (2)

This course introduces theory and practical application in the physician's office laboratory including patient preparation; specimen collection, processing and testing; and venipuncture. Areas of study emphasize use of Universal/Standard Precautions, CLIA, prevention of disease transmission, specimen collection and transport and MSDS regulations. Components: Laboratory, Lecture. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (45 contact hours). Prerequisites: Acceptance into the Medical Assisting Program or consent of Medical Assisting Coordinator/Director.

MAI 140 — Medical Assisting Clinical Procedures I (4)

Clinical skills and techniques used in the physician's office for patient examination, diagnosis and treatment are introduced. Principles and practical applications related to medical asepsis, infection control, vital signs, routine and specialty patient examinations, diagnostic testing, and treatments are presented with an emphasis on OSHA regulations. Components: Laboratory, Lecture. Lecture: 3 credits (45 contact hours). Lab: 1 credit (45 contact hours). Prerequisites: Consent of Medical Assisting Program Coordinator/Director or acceptance into the Medical Assisting Program.

MAI 150 — Medical Assisting Administrative Procedures I (3-5)

Provides knowledge of the duties required in an office with emphasis placed on a medical office environment. Course content includes communication with patients and co-workers, completion of medical office forms, telephone techniques, filing, office correspondence, mail processing, appointment scheduling, processing medical records, and an introduction to medical office computer software. Components: Laboratory, Lecture. Lecture: 1 credit (15 contact hours) Lab: 2 credits (45 contact hours). Prerequisites: Acceptance into the Medical Assisting program or consent of Medical Assisting Coordinator/Director.

MAI 170 — Dosage Calculations (2)

This course is designed to provide a review of basic mathematic skills related to dosage calculations, a thorough knowledge of the systems of measurement and conversion, and application skills to perform dosage calculations.

Components: Lecture. Lecture: 2 credits (30 contact hours).

Prerequisites: None

MAI 200 — Pathophysiology for the Medical Assistant (3)

This class provides instruction in the body disease processes as related to patient disease diagnosis and treatment. Major body systems and their related disease processes are presented along with approaches or disease prevention and treatment regimens. Components: Lecture. Lecture 3 credits (45 contact hours; Lab 0).

MAI 220 — Medical Assisting Laboratory Techniques II (3)

This class provides instruction in laboratory procedures related to waived and moderate complexity testing performed in the physician's office laboratory. CLIA and OSHA regulations are stressed. Components: Laboratory, Lecture

Lecture: 2 credits; Laboratory: 1 credit (45 contact hours). Prerequisites: MAI 120 with a grade of C or greater.

MAI 230 — Medical Insurance (3)

This course introduces the fundamentals of insurance processing and coding for the medical office, with focus on proper procedures for accurate coding using the ICD, CPT and HCPCS coding system.

Components: Laboratory, Lecture. Lecture: 1 credit (15 contact hours).

Lab: 2 credits (45 contact hours). Prerequisites: Consent of Medical Assisting Program Coordinator/Director.

MAI 240 — Medical Assisting Clinical Procedures II (4)

This course provides continued instruction and application techniques for specialty examination, diagnostic testing and treatment modalities. Fundamentals and practical applications of minor office surgical procedures are emphasized.

Components: Laboratory, Lecture. Lecture: 3 credits (45 contact hours).

Lab: 1 credit (45 contact hours). Prerequisites: MAI 140 with a grade of C or greater.

MAI 250 — Medical Assisting Administrative Procedures II(3)

Financial, insurance and billing procedures are covered. Areas of study include banking concepts, accounting systems frequently used in the medical office, payment procedures, insurance plans and claims, paper and electronic billing methods, and professional fees. Components: Laboratory, Lecture. Lecture: 2 credits (30 contact hours). Lab: 1 credit (30 contact hours).

MAI 260 — Medical Transcription (3)

This course introduces the fundamentals of medical transcription. Emphasis is placed on techniques for the production of various types of medical reports and records as well as the use and care of equipment.

Components: Lecture. Lecture: 3 credits (45 contact hours). Lab: 0.

Prerequisites: Consent of Medical Assisting Coordinator/Director.

MAI 270 — Pharmacology for the Medical Assistant (3)

An overview of pharmacology is presented with concentration on prescriptions, drug nomenclature, classification of drugs, patient education, medication preparation and administration. Components: Laboratory, Lecture. Lecture: 2 credits (30 contact hours). Lab: 1 credit (45 contact hours). Prerequisites: Consent of Medical Assisting Program Coordinator/Director.

MAI 281 — Clinical Orientation (1)

This course provides introductory practical experience (unpaid) through observation and work assignments in the physician's office. Components: Clinical. Lecture: 0. Clinical: 1 credit (60 contact hours). Prerequisites:

Consent of Medical Assisting Program Coordinator/Director.

MAI 282 — Medical Assisting Externship (3)

Designed to broaden the educational experience through appropriate observation and work assignments. Externship assignments (unpaid) are structured to allow the student to apply knowledge, perform administrative and clinical procedures, and develop professional attitudes for interacting with other professionals and consumers in the health care field. Components: Clinical Lecture: 0. Clinical: 3 credits (180 contact hours). Prerequisites: Consent of Medical Assisting Program Coordinator/Director.

MAI 299 — Selected Topics: Medical Assisting: (Topic) (1-4)

Various medical assisting topics, issues and trends will be addressed. Topics may vary from semester to semester at the discretion of the instructors; course may be repeated with different topics to a maximum of six credit hours. Components: Laboratory, Lecture. Lecture: varies; Laboratory: varies. Prerequisites: Consent of instructor.

MUSIC**MUS 100 Introduction to Music (3)**

A study of the elements of music as they apply to the listening experience; designed for the non-music major with no prior knowledge of music. Emphasis will be placed upon developing an awareness and understanding of musical styles from the Renaissance to the present. Music majors may not use this course to fulfill either General Studies, Universities Studies or music history requirements. VI

MUS 206 American Music (3)

A history of music in America from c. 1620 to the present. Will require listening to recordings, reading the primary text and suggested readings in books, periodicals and documents. Students should become aware of important names, places, events and styles in music as well as important historical trends and movements.

MUS 222 — History and Sociology of Rock Music (3)

A listening survey course, with a chronological approach, covering the years 1950- present. Emphasis will be on both the music and the sociological climate reflected and advocated by the music.

MU 154 — Class Instruction in Voice I (1)

A beginning course in the fundamentals of singing.

NUCLEAR MEDICINE TECHNOLOGY**NUC 140 Nuclear Medicine Principles & Clinic I (6)**

An introduction and orientation to nuclear medicine technology, aspects of radiation protection, the applied science and mathematics of radionuclides, and radionuclide skeletal imaging procedures are studied. Lecture: 4 hrs, clinic: 12 hrs. Prerequisites: Admission to NMT program, CPR certification, BSL 110, BSL 111, MA 109; concurrent: CHE 104 and PH 172.

NUC 150 Nuclear Medicine Principles & Clinic II (6)

Nuclear Medicine instrumentation and quality control procedures, clinical applications of computers, and radionuclide cardiovascular and pulmonary system imaging procedures are studied. Lecture: 4 hrs, clinic: 12 hrs. Prerequisites: NUC/NMT 140; concurrent: CHE 106.

NUC 230 Nuclear Medicine Principles & Clinic III (6)

Central nervous system, gastrointestinal system, and urinary system radionuclide imaging procedures are studied. Lecture: 7.5 hrs, clinic: 30 hrs. Prerequisites: NUC/NMT 150

NUC 240 Nuclear Medicine Principles & Clinic IV (8)
Radiopharmaceutical preparation and quality control, the therapeutic applications of radionuclides, as well as endocrine system radionuclide imaging procedures are studied. Lecture: 4 hrs, clinic: 24 hrs.
Prerequisites: Current CPR certification and NUC/NMT 230

NUC 280 Nuclear Medicine Principles & Clinic V (8)
The biological effects of radiation, regulatory aspects of radiation protection, oncologic/inflammatory-infectious process radionuclide imaging studies and hematologic and in-vitro radionuclide non-imaging studies are studied. Lecture: 4 hrs, clinic: 24 hrs. Prerequisites: NUC/NMT 240

NMT 299 Selected Topic in NMT (1)
Content is designed for medical imaging technologists currently working, but not certified, in nuclear medicine technology who are attempting to meet alternate eligibility requirements for certification by the Nuclear Medicine Technology Certification Board (NMTCB). Topic will be chosen by the instructor and the student in instrumentation, radiopharmacy, or radiation safety in order to document requirements to apply for the examination. May be repeated with different topic subtitles for a maximum of three (3) credits. The radiopharmacy topic may include applied work with the radiopharmacist through the clinical affiliation of the NMT program. There is no clinical or laboratory component for instrumentation or radiation safety. This course is not open to students enrolled in the NMT program. NMT graduates may enroll as a registry review.

NURSING

NR 115 Nursing I (9)
Introduction to nursing and the nursing process are studied as related to the basic human needs of clients throughout the life span. Areas of study include foundation knowledge, concepts and skills, with emphasis on health promotion and physical assessment. Lecture: 5 hours, Laboratory: 12 hours. Prerequisites: Admission to the Associate Degree Nursing Program; BIO 137 and mathematics course with a grade of "C" or better; PY 110 or PSY 100. Prior to or concurrent: PSY 223, BIO 139, Computer Literacy course.

NR 125 Nursing II (2)
Common drugs are studied based upon their classification and their effects upon the basic human needs. Areas of emphasis include nursing responsibility, accountability, and application of the nursing process regarding drug therapy. Credit not available by special examination. Prerequisites: Completion of NR 115 and BIO 139 with a grade of "C" or better, PSY 223, and Computer Literacy; at least a 2.0 cumulative grade point average.

NR 235 Nursing III (4)
Areas of study include the application of the nursing process with the childbearing family focusing on health promotion and the care of families experiencing interferences with basic human needs. Emphasis is on the nurse as a provider of care. Credit not available by special examination. Lecture: 2 hours, laboratory: 6 hours. Prerequisite: Completion of NR 115 and BIO 139 with a grade of "C" or better, PSY 223 and Computer Literacy; at least a 2.0 cumulative grade point average. Corequisite: NR 245.

NR 245 Nursing IV (4)
Areas of study include the application of the nursing process to health promotion and interferences with the ability to meet selected basic human needs for child/adult clients. Emphasis is on the nurse as a provider of care. Credit not available by special examination. Lecture: 2 hours, Laboratory: 6 hours. Prerequisites: Completion of NR 115 and

BIO 139 with a grade of "C" or better, PSY 223 and Computer Literacy; a 2.0 cumulative grade point average. Corequisite: NR 235.

NR 255 Nursing V (9)
Areas of study include the application of the nursing process as it relates to health promotion and care of child/adult clients experiencing interferences with the ability to meet selected basic human needs. Emphasis is on the nurse as a provider of care. Credit not available by special examination. Lecture: 5 hours, Laboratory: 12 hours
Prerequisites: Satisfactory completion of courses required by the first year nursing curriculum as specified; satisfactory completion being "C" or better in each nursing course; BSL 214 prior to or concurrent, at least a 2.0 cumulative grade point average.

NR 265 Nursing VI (9)
Course content will focus on the application of the nursing process as it relates to health promotion and care of child/adult clients experiencing interferences with the ability to meet selected basic human needs. Areas of emphasis include the nurse as a provider and manager of care as well as a member of the discipline. Lecture: 5 hours, Laboratory: 12 hours. Credit not available by examination. Prerequisite: Satisfactory completion of NR 255 and BSL 214 with a grade of "C" or better; at least a 2.0 cumulative grade point average.

NURSING: PRACTICAL NURSING

NPN 100 — Introduction to Nursing & Health Care System (2)
Historical overview of current health care including medical economics, ethical and legal parameters, roles and responsibilities of health care team members with an emphasis on reflective nursing practice. Medical terminology, therapeutic communication techniques, concepts of health, health assessment, self care and basic needs related to activities of daily living (ADL) across the lifespan are explored. Prerequisites: Current CPR card for Health Care Providers; Current certification must be maintained throughout the program. Successful completion of a Medicaid Nurse Aide equivalent course within the past three (3) years or proof of active status on the Medicaid Nurse Aide Registry. Admission into the Practical Nursing Program. (PY 110 if taking PSY 223) and (BSL 110 if taking BSL 111) or (BSL 107 or HEA 110). Must achieve a grade of C or higher in each course. Co-requisite: (BSL 110 if taking BSL 111) or (BSL 107 or HEA 110). Components: Lecture. Lecture: 2 credits (30 contact hours).

NPN 105 — Development of Care Giver Role (6)
Introduction to nursing and the nursing process as related to client activities of daily living across the life span; opportunity to develop and practice psychomotor skills related to health assessment, promotion, maintenance, and illness prevention. Prerequisites: Current CPR card for Health Care Providers; Current certification must be maintained throughout the program. Successful completion of a Medicaid Nurse Aide equivalent course within the past three (3) years or proof of active status on the Medicaid Nurse Aide Registry. Admission into the Practical Nursing Program. (PY 110 if taking PSY 223) and (BSL 110 if taking BSL 111) or (BSL 107 or HEA 110). Must achieve a grade of C or higher in each course. Co-requisites: (BSL 110 if taking BSL 111) or (BSL 107 or HEA 110). Components: Clinical, Laboratory, Lecture. Lecture: 3 credits (45 contact hours); Lab/Clinical: 3 credits (45:1 ratio/135 contact hours).

NPN 110 — Pharmacological & Other Therapeutic Modalities (2)
Introduction to techniques used to administer commonly used drugs; dosage calculations; diagnostic studies and other related medical therapies; legal responsibilities. Prerequisites: Current CPR card for

Health Care Providers; Current certification must be maintained throughout the program. Successful completion of a Medicaid Nurse Aide equivalent course within the past three (3) years or proof of active status on the Medicaid Nurse Aide Registry. Admission into the Practical Nursing Program. (PY 110 if taking PSY 223) and (BSL 110 if taking BSL 111) or (BSL 107 or HEA 110). Must achieve a grade of C or higher in each course. Co-requisites: (BSL 111 or BSL 107 or HEA 110). Components: Laboratory, Lecture. Lecture: 1 credit (15 contact hours); Lab/Clinical: 1 credit (45:1 ratio/45 contact hours).

NPN 115 — Practical Nursing Bridge Course (6)

Builds upon the competencies of the advanced nursing assistant and allied health professions to assist in the beginning transition to the role of the Practical Nurse. Areas of study include basic needs and the nursing process across the lifespan, health promotion, illness prevention and basic pharmaco-therapeutics. Upon successful completion of all components of the course, the student will be admitted to the second semester of the Practical Nursing program and will have earned by advanced standing, a total of 10 credit hours in nursing. Prerequisites: Current CPR card for Health Care Providers; Current certification must be maintained throughout the program. Active status on the Medicaid Nurse Aide Registry or successful completion of an equivalent nursing course. Completion of an advanced nursing assistant, medical assistant, surgical technology, radiography, diagnostic medical sonography, respiratory therapy, physical therapist assistant, or paramedic technology program. Admission into the Practical Nursing Program. (PY 110 & BSL 110 if that option. Components: Laboratory, Lecture.

NPN 120 — Child Bearing Family (3)

Application of nursing process with the childbearing families focusing on health promotion as well as common health alterations in the reproductive process. Prerequisites: NPN 100 and NPN 105 and NPN 110 and (HEA 110 or BSL 107 or BSL 110 and 111) and (HEA 100 or PY 110 and PSY 223). Must achieve a grade of C or higher in each course. Components: Clinical, Laboratory, Lecture. Lecture: 2 credits (30 contact hours); Lab/Clinical: 1 credit (45:1 ratio/45 contact hours).

NPN 125 — Mental Health (3)

Development and application of nursing process to clients experiencing common mental health problems. Emphasis on assisting clients to cope with psychological problems throughout the life span ? i.e., chemical dependency, violence and other stress and developmental problems related to mental health. Prerequisites: NPN 100 and NPN 105 and NPN 110 and (HEA 110 or BSL 107 or BSL 110 and 111) and (HEA 100 or PY 110 and PSY 223). Must achieve a grade of C or higher in each course. Components: Clinical, Laboratory, Lecture. Lecture: 2 credits (30 contact hours); Lab/Clinical: 1 credit (45:1 ratio/45 contact hours).

NPN 130 — Pharmacology I (3)

Study of common drugs by classification and effects with emphasis on responsibility, accountability, and application of the nursing process to drug therapy. Prerequisites: NPN 100 and NPN 105 and NPN 110 and [(BIO 135 or AHS 109) or BIO 137 and 139] All courses must be achieved with a grade of C or higher. Components: Clinical, Laboratory, Lecture. Lecture: 2 credits (30 contact hours); Lab/Clinical: 1 credit (45 contact hours).

NPN 135 — Introduction to Health Deviation (6)

Application of the nursing process for selected child/adult clients experiencing common health deviations interfering with activities of daily living. Emphasis is on the nurse as the provider of care. Prerequisites: NPN 100 and NPN 105 and NPN 110 and [(HEA 110 or BSL 107) or BSL 110 and 111]. Must achieve a grade of C or higher in each course. Components: Clinical, Laboratory, Lecture. Lecture: 3 credits (45

contact hours); Lab/Clinical: 3 credit (45:1 ratio/135 contact hours).

NPN 200 — Med/Surg I (5)

Application of the nursing process for selected child/adult clients experiencing common health deviations interfering with activities of daily living. Emphasis is on nurse as the provider of care. Prerequisites: NPN 120 and NPN 125 and NPN 130 and NPN 135. Must achieve a grade of ?C? or higher in each course. Components: Clinical, Laboratory, Lecture. Lecture: 3 credits (45 contact hours); Lab/Clinical: 2 credits (45:1 ratio/ 90 contact hours).

NPN 205 — Med Surg II (5)

Designed to apply the nursing process to child/adult clients experiencing more complex health alterations. The focus is on multi-system failure, fluid and electrolytes, neurological problems, and cellular deviation. A program summative, nationally-normed test, the NLN Comprehensive Assessment is required for successful completion of this course. Successful is defined as a 75-percent likelihood of passing NCLEX-PN. A student may repeat the examination one time after remediation. Prerequisites: NPN 120 and NPN 125 and NPN 130 and NPN 135 and NPN 200. Must achieve a grade of C or higher in each course. Components: Clinical, Laboratory, Lecture. Lecture: 3 credits (45 contact hours); Lab/Clinical: 2 credits (45:1 ratio/ 90 contact hours).

NPN 210 — Clinical Practicum (4)

The clinical lab experience is designed to integrate the theoretical concepts learned throughout the program, and to apply this knowledge during the direct care of clients. Critical thinking and problem solving skills are used during the nursing role performances of provider of care, manager of care, and member within the discipline. Prerequisites: NPN 205. Must achieve a grade of 'C or higher in course. Components: Lecture, Practicum. Lecture: 1 credit (15 contact hours); Practicum: 3 credits (45:1 ratio/ 135 contact hours).

NPN 215 — Nursing Trends & Issues (1)

Designed to prepare the student for the role of the practical nurse. Prerequisites: NPN 120 and NPN 125 and NPN 130 and NPN 135. Must achieve a grade of C or higher in each course. Components: Clinical, Lecture. Lecture: 1 credit (15 contact hours).

NPN 250 — Practical Nursing Role Delineation (1)

Provides the opportunity for nursing mobility to the candidates who have not successfully completed the NCLEX-RN, and desire to complete the NCLEX-PN. Consists of eight (8) hours of didactic and 16 hours of clinical instruction. Focuses on roles and responsibilities of the Licensed Practical Nurse as a member of the health care team. Components: Laboratory, Lecture. Lecture: 0.5 credit (8 contact hours); Laboratory: 0.5 credit (16 contact hours). Prerequisites: Completion of the required education program in registered nursing at an approved school of nursing and completion of the requirements of graduation. Unsuccessful in completion of the NCLEX-RN.

NUTRITION AND FOOD SCIENCE

NFS 101 Human Nutrition and Wellness (3)

Food composition, digestion, absorption and metabolism as related to selection of nutrients essential for human life, growth, reproduction, lactation, wellness and physical activity. Not open to NFS majors except hospitality management students.

PHILOSOPHY

PHI 100 Introduction to Philosophy: Knowledge and Reality (3)

An introduction to philosophical studies with emphasis on issues of knowing, reality, and meaning related to human existence. VI

PHI 120 Introductory Logic (3)

A course which treats argumentation, syllogistic and sentential logic. The focus will be on the use of formal methods in the construction and criticism of actual arguments, the aim being to inculcate standards of good reasoning, e.g., clarity, consistency and validity. Credit is not given to students who already have credit for PHI 320.

PHI 130 Introduction to Philosophy: Morality and Society (3)

An introduction to philosophical studies with emphasis on a critical study of principles of moral action and social and political values. VI

PHI 260 History of Philosophy I: From Greek Beginnings to the Middle Ages (3)

An introductory study of the development of Western philosophy from ancient through late medieval times including systematic work in logic, metaphysics, epistemology and ethics by such philosophers as Plato, Aristotle, Augustine and Aquinas.

PHI 270: History of Philosophy II: From the Renaissance to the Present Era (3)

An introductory study of the development of Western philosophy from early modern to recent times including systematic work in logic, metaphysics, epistemology and ethics by such philosophers as Occam, Descartes, Hume and Kant.

PHLEBOTOMY

PHB 100 — Phlebotomy (6)

Prepares the student as an integral member of the health-care team. One who collects blood from patients/donors in hospitals, blood banks or clinics for analysis or other medical purposes. Practices standard precautions, record keeping, vital signs and therapeutic communication skills. Co-requisite: PHB 105. Components: Lecture

PHB 120 — Fundamentals of Clinical Laboratory Phlebotomy(6)

Fundamental techniques of areas of the clinical laboratory appropriate to the phlebotomist are introduced. Included is a study of medical ethics, medical terminology, anatomy and physiology of the circulatory system, professional organizations, communication, record keeping, specimen collection, chain of custody, laboratory safety, and quality control. Components: Laboratory, Lecture. Lecture: 3 hrs; Laboratory: 9 hrs. Prerequisites: CPR Certification, Malpractice insurance, Hepatitis, Varicella, PPD, Rubeola, and Rubella blood work results.

PHB 130 — Phlebotomy Technician Theory (3)

Prepares the student as an integral member of the health-care team. One who collects blood from patients/donors in hospitals, blood banks or clinics for analysis or other medical purposes. Practices standard precautions, record keeping, vital signs and therapeutic communication skills. Components: Lecture. Lecture: 3 hours per week. Laboratory: 0 hours Credits: 3. *This course is approved on a pilot basis. Prerequisites: None.

PHB 140 — Phlebotomy Technician Lab I (1)

This course focuses on the practical application in the hospital/clinical laboratory of routine venipuncture collection. This includes patient preparation, venipuncture technique, documentation, and handling of the

specimen. OSHA and CLIA regulations are emphasized. Components: Laboratory. Lecture: 0 hours Lab: 6 hours per week for 8 weeks Total Credits: 1. *This course is approved on a pilot basis. Prerequisites: None. Corequisites: PHB 150.

PHB 150 — Phlebotomy Technician Lab II (1)

Provides instruction related to clinical/laboratory skills and techniques used in hospitals, laboratories and physicians' offices related to specialized blood collection. Skin puncture procedures, special procedures, POCT testing, arterial blood gases and non-blood specimens and tests. Quality assurance, TQM, OSHA, CLIA are emphasized. Components: Laboratory. Lecture: 0 hours Lab: 3 hours per week for 16 weeks Credits: 1. *This course is approved on a pilot basis. Prerequisites: None. Corequisites: PHB 140.

PHB 151 — Phlebotomy for the Health Care Worker (1-2)

Course covers fundamental techniques in proper venipuncture and capillary collection. Included is a study of medical ethics, laboratory terminology, anatomy and physiology of the circulatory system, communication and record keeping, specimen processing, laboratory safety, isolation procedures and special collection. Components: Laboratory, Lecture. Lecture: 1-2 credits (15-30 contact hours). Prerequisites: Permission of the Instructor.

PHB 152 — Phlebotomy; Clinical Experience (1)

This course introduces the student to clinical practice in the phlebotomy department of the laboratory. The student will begin to develop performance skills in routine venipuncture and capillary collection procedures. This course utilized and depends upon external institutions to insure adequate clinical education and training. A prescribed schedule of clinical rotations in the phlebotomy area will be provided for the student by the instructor. Components: Laboratory Prerequisites: PHB 151 or consent of instructor.

PHB 153 — Advanced Topics in Phlebotomy (4)

Prepares the student as an integral member of the health-care team. One who collects blood from patients/donors in hospitals, blood banks or clinics for analysis or other medical purposes. Practices standard precautions, record keeping, vital signs and therapeutic communication skills. Components: Lecture. Prerequisites: PHB 151 Phlebotomy for the Healthcare Professional.

PHB 155 — Phlebotomy Clinical (2-3)

This course is designed to build on the knowledge acquired in phlebotomy lecture and lab. In this course the student will use external institutions for clinical experience to become more proficient in the performance of routine venipuncture and dermal collections. The student will gain the experience needed to handle routine venipuncture complications and the skills necessary to adequately perform the duties of a phlebotomist. Components: Clinical Prerequisites: PHB 151 Phlebotomy for the Healthcare Professional or PHB 100 Phlebotomy.

PHB 160 — Clinical Experience (2)

PHYSICS

Note: It is assumed that all prerequisites include, in addition to any specific course listed, the phrase "or equivalent," or "consent of instructor."

PH 172 Physics for Health Sciences (2)

This course will cover basic concepts of motion, forces, momentum, work, energy, power, and waves, as applied in electricity and magnetism, optics, atomic and nuclear physics. Prerequisite: MA 108R or 2 years of high school algebra; or consent of instructor. IV

PHY 151 Introduction to Physics (3)

A lecture-demonstration course covering the mechanics of solids, liquids, gases, heat, and sound. Credit is not given to students who already have credit for PHY 201, 211 or 231. Prerequisite: Two years of high school algebra or MA 108R. IV

PHY 152 Introduction to Physics (3)

A lecture-demonstration course covering electricity, magnetism, optics, atomic and nuclear physics. Credit is not given to students who already have credit for PHY 203, 213 or 232. Prerequisite: Two years of high school algebra or MA 108R. IV

PHY 160 Physics and Astronomy for Elementary Teachers (3)

Course sequence (GLY 160-PHY 160 six credit hours) in physical science for prospective elementary teachers. The sequence addresses basic concepts of earth science, astronomy and physics appropriate for elementary teachers and is taught with an emphasis on inquiry-based, laboratory activities. PHY 160 includes the basics of the motion of objects, astronomy by sight, electrical circuits, magnetism and the behavior of light. Lecture: 1 hour; laboratory: 5 hours.

PHY 211 General Physics (5)

First part of a two-semester survey of classical and modern physics, focusing on the motion of solids and fluids as governed by Newton's Laws and by the conservation laws of energy, momentum, and angular momentum. Lecture: 2 hours, recitation: 2 hours, laboratory: 2 hours. Credit is not given to students who already have credit for PHY 231 and 241. Prerequisite: A working knowledge of algebra and trigonometry as obtainable in MA 109 and MA 112, or as demonstrated by an ACT math score of 25 or higher. IV

PHY 213 General Physics (5)

Continuation of PHY 211, covering electrostatics, de circuits, magnetism, Maxwell's Equations, ture, two electromagnetic radiation, light and some modern physics. Lecture: 2 hours; recitation: 2 hours; laboratory: 2 hours. Credit is not given to students who already have credit for PHY 232 and 242. Prerequisite: PHY 211 or equivalent.

PHY 231 General University Physics (4)

First part of a two-semester survey of classical physics. Consequences of the principles of mechanics are developed conceptually, analytically and quantitatively. Lecture: 3 hours. recitation: 1 hour. Familiarity with elementary concepts and techniques of calculus (derivatives and integrals) is required. Prerequisite or concurrent: MA 114. IV

PHY 232 General University Physics (4)

A general course covering electricity, magnetism and optics. Lecture: 3 hours; recitation: 1 hour. This course is a prerequisite to a significant number of courses in this and related areas of study. Familiarity with elementary vector calculus is encouraged. Prerequisite: PHY 231. Concurrent: MA 213.

PHY 241 General University Physics Laboratory (1)

A laboratory course offering experiments in mechanics and heat, framed in a small work environment that requires coordination and team work in the development of a well-written lab report. Prerequisite or concurrent: PHY 231. IV

PHY 242 General University Physics Laboratory (1)

A laboratory course offering experiments in electricity, magnetism, and light, framed in a small group environment that requires coordination and team work in the development of a well-written lab report. Prerequisite: PHY 241; concurrent: PHY 232. IV

PHYSIOLOGY**PGY 206 Elementary Physiology (3)**

An introductory survey course in basic human physiology. Prerequisite: One semester of college biology.

POLITICAL SCIENCE

Note: It is assumed that all prerequisites include, in addition to any specific course listed, the phrase "or equivalent," or "consent of instructor."

PS 101 American Government (3)

A survey of national government and the political process in the United States, with emphasis on the Constitution, the President, Congress and the judicial system. V

PS 212 Culture and Politics of the Third World (3)

This course analyzes the politics of selected states in Africa, Asia, and Latin America. Various bases of political cleavage and cooperation will be examined: ethnicity, language, social class and ideology. Cultural differences between Africa, Asia, and Latin America will be identified and their political implications explored, as well as differences within geo-cultural areas. V

PS 235 World Politics (3)

A study of the most significant problems of world politics, including the fundamental factors governing international relations, the techniques and instruments of power politics, and the conflicting interests in organizing world peace. V

PS 255 State Government (3)

An introduction to the institutions, political processes and policies of state governments, and the relationships of state governments with other levels of government in the United States. V

PS 271 Introduction to Political Behavior (3)

The study of behavior in a political context; the analysis of basic behavioral concepts used in political science such as political roles, group behavior, belief systems, personality, power and decision-making. V

PS 280 Issues in Public Policy (3)

An examination of selected major public problems, focusing on their nature, political ramifications and alternate methods of dealing with them. Policies covered will vary from semester to semester, but will include such areas as poverty, health care, energy, education, race relations environment, etc. Prerequisite: PS 101.

PSYCHOLOGY**PSY 100 Introduction to Psychology (4)**

An introduction to the study of behavior covering theories, methods and findings of research in major areas of psychology. Topics covered will include the biological foundations of behavior; learning, perception, motivation, personality; developmental, abnormal, and social behavior; and methods of assessment. This course is a prerequisite to a significant number of courses in this and related areas of study. Lecture: 3 hours, laboratory/discussion, 1 hours. V

PSY 195 Orientation to Psychology (1)

An orientation to educational issues and career planning for students who have declared psychology as a major. Topics include career paths and opportunities, professional resources and issues, and educational planning. Pass/Fail only. Prerequisite: Declared major in Psychology, or consent of instructor.

PSY 215 Experimental Psychology (4)

A study of the application of scientific methods to psychological research. Special emphasis is placed on the critical evaluation of contemporary research in experimental psychology. Particular attention is focused on the design, execution, and written report of laboratory research. Lecture: 3 hours, laboratory: 2 hours. Prerequisite: PSY 100 and sophomore standing, or consent of instructor.

PSY 216 Applications of Statistics in Psychology (4)

An introduction to statistical procedures used in making decisions based on psychological data. May not be used to satisfy the laboratory requirement in the College of Arts and Sciences. Lecture: 3 hours; laboratory, 2 hours. Prerequisite: PSY 100.

PSY 223 Developmental Psychology (3)

An introduction to the principles of developmental psychology as seen in human growth over the entire lifespan, with the primary focus on infancy through adolescence. Emphasis is placed on theory and data relating to the developmental aspects of cognition, language and personality. Prerequisite: PSY 100 or equivalent. (Same as FAM 254.) V

PY 110 General Psychology (3)

A survey course in general psychology designed to give the student an introduction to the history, methods and content of modern psychology. Topics include the history and systems of psychology, psychological research, physiological psychology, psychological processes, developmental psychology, personality, abnormal behavior and social psychology. V

PY 230 Psychosocial Aspects of Death and Dying (3)

A one-semester course designed for students who have completed at least one semester of an introductory psychology or sociology course, or its equivalent. Focus will be on the understanding of the biopsychological, sociological and psychological aspects of death and dying. The primary goal of the course is to help the individual recognize the behavior and attitudes associated with death in preparation for dealing with dying and bereavement. Prerequisite: Introductory psychology or sociology, or consent of instructor. V

PY 297 Psychology of Aging (3)

An overview of the demographics of aging, theories of aging and research methods used to study adult development. The course will examine the biological, psychological and social impact of aging, longevity, work, retirement, death and bereavement. Prerequisite: PY 110 or PSY 100 or consent of instructor.

PY 298 Essentials of Abnormal Psychology (3)

An historical overview of the services provided to individuals with mental illness and theories of personality development. Assessment, diagnosis and treatment of the major mental disorders, and the biological, psychological, and sociological contributing causation factors are discussed. Prerequisite: PY 110 or PSY 100 or consent of instructor.

QUALITY TECHNOLOGY**QT 101 Quality Management Principles (3)**

Students are introduced to fundamental concepts, principles, and practices used to improve quality in organizations. The need for organizational change is reviewed and paradigms of quality are introduced. An overview of areas of change, methods of quality planning and methods for implementing quality policies are provided.

RADIOGRAPHY**RADI 100 Radiography I (8)**

An introduction to radiography that emphasizes historic perspective, professional ethics, introductory imaging, x-ray tube, patient management, and the role of the radiographer as a member of the health care team is included. The principles of human anatomy are applied to the study of fundamental radiographic procedures (exposure factors and patient positioning) used for different age groups. Procedures include: chest, abdomen, extremities, shoulder girdle, bony thorax, and pelvic girdle. Lecture: 6 credits (90 contact hours) Laboratory: 2 credits (30:1/60 contact hours)

Prerequisite: AAS – CPR must be obtained prior to enrolling in RADI 100 and certification must be kept current throughout the program. Admission to the Radiography program: BSL 110 & 111 or equivalent at other regionally accredited college/university

RADI 101 Clinical I (1)

Provides the student with an opportunity to operate equipment appropriately, apply basic patient care and position patients accurately. Lecture: 0 Lab: 0 Clinical: 1 credit (90:1/90 contact hours) Prerequisites: AAS – CPR must be obtained prior to enrolling in RADI 100 and certification must be kept current throughout the program. Admission to the Radiography program: BSL 110 & 111 or equivalent at other regionally accredited college/university. Prerequisite/Corequisite: RADI 100 with a grade of “C” or greater.

RADI 110 Radiography II (7)

Radiography II is a continuation of Radiography I with emphasis on radiographic imaging, related technical factors and accessories. The principles of human anatomy are applied to the study of fundamental radiographic procedures (exposure factors and patient positioning) used for different age groups. Procedures include: basic and complex skulls, vertebral column, alimentary canal, biliary, urinary system, tomography, hours. Special radiographic examinations and equipment are discussed. Lecture: 5 credits (75 contact hours) Laboratory: 2 credits (30:1/60 contact hours) Prerequisite: RADI 100 with a grade of “C” or greater.

RADI 111 Clinic II (2)

A continuation of Radiography Clinical I. Opportunities for more responsibility and independence with previously learned procedures are provided. Students will also practice and demonstrate competence of new procedures learned in RADI 110. Lecture: 0 Laboratory: 0 Clinical: 2 credits (90:1/180 contact hours) Prerequisite: RADI 101 with a grade of “C” or greater.

RADI 201 Clinical III (2)

Performance of a critical evaluation of the finished radiograph with emphasis on recognizing acceptable density, contrast, definition, distortion, and anatomical position is also included. Lecture: 0 Laboratory: 0 Clinical: 2 credits (90:1/180 contact hours) Prerequisite: RADI 111 with a grade of “C” or greater.

RADI 210 Radiography IV (4)

Theories and principles involved in the production, control, and application of ionizing radiation in radiography are covered. Emphasis will be on developing a quality assurance program, quality control testing of radiographic equipment, and image intensification. Lecture: 3 credits (45 contact hours) Laboratory: 1 credit (30:1/30 contact hours) Prerequisite: RADI 201 with a grade of “C” or greater.

RADI 211 Clinical IV (4)

Provides the student with an opportunity to refine skills learned in previous clinical courses. Continuous practice is performed to improve techniques and procedures previously learned. Lecture: 0 Laboratory: 0

Clinical: 4 credits (90:1/360 contact hours) Prerequisite: RADI 201 with a grade of "C" or greater.

RADI 220 Radiography V (3)

Equipment and advanced modalities used to complement diagnostic radiology are introduced. Principles of radiation biology, radiation protection, pathology and the systematic classifications of disease are included. Professional and legal standards are discussed. Lecture: 3 credits (45 contact hours) Laboratory: 0 hours Prerequisite: RADI 210 with a grade of "C" or greater

RADI 221 Clinical V (4)

Provides the student with an opportunity to exercise independent judgment and discretion in the technical performance of medical imaging procedures. Students will complete all remaining competencies of the program. This final section of clinical education ensures that the student is ready for entry-level employment. Lecture: 0 Laboratory: 0 Clinical: 4 credits (90:1/360 contact hours) Prerequisite: RADI 211 with a grade of "C" or greater.

RDL 210 Radiography V (9)

Theories and principles involved in the production, control, and application of ionizing radiation in radiography are covered. Additional topics include: developing a quality assurance program, quality control testing or radiographic equipment, processing the latent image, and image intensification. Advanced patient care skills are also included. Lecture: 4 hrs, laboratory: 2 hrs, clinic: 20 hrs.

RDL 220 Radiography VI (9)

Equipment and advanced modalities used to complement diagnostic radiology are introduced. Principles of radiation biology, radiation protection, pathology and the systematic classifications of disease are included. Professional and legal standards are discussed. Lecture: 4 hours, laboratory: 2 hours, clinic 20 hours. Prerequisite: RDL/RAD 210.

RDL 230 Sectional Anatomy for Advanced Imaging (3)

Digital images will be used to aid technologists in recognizing, locating, and identifying normal and abnormal anatomy. Areas of concentration will include the head, spine, soft tissue neck, thorax, abdomen, male and female pelvis, and upper and lower extremities. Prerequisite: Technologists registered by the American Registry of Radiologic Technologists or Nuclear Medicine Technology Certification Board, or students who have completed one year and are currently enrolled in an accredited Radiography or Nuclear Medicine Program, or consent of instructor.

RDL 240 Advanced Patient Care (3)

The technologist will be provided with advanced knowledge about patient assessment and care. Included will be: vital signs, arterial blood gases (ABG's); cardiac arrhythmias; neurological, cardiac, respiratory, and trauma symptoms and evaluation; treatment for medical emergencies, contrast media administration and allergic reactions; pharmacology and drug administration. Sections on legalities, informed consent, ethics, quality assurance, communication, patient education, education of community and other health care professionals, documentation, equipment safety and professional growth will be discussed. Prerequisite: Technologists registered by the American Registry of Radiologic Technologists or Nuclear Medicine Technology Certification Board, or students who have completed one year and are currently enrolled in an accredited Radiography or Nuclear Medicine Program, or consent of instructor. The student must also have current Basic Cardiac Life Support for health care providers (CPR), and venipuncture certification.

RDL 250 Computed Tomography Physics and Instrumentation (3)

The student will be provided with knowledge about the physics of computed tomography (CT) image production and the equipment

necessary to produce these images. History of CT development, basic principles of image production, use of computers to create the CT image, methods of acquisition, image display, radiation dose, patient safety, definition of terminology specific to CT, equipment characteristics and utilization, enhancement techniques and basic site planning requirements will be included. Prerequisite: RDL/RAD 230, RDL/RAD 240, and a basic computer course, or consent of instructor.

RDL 255 Magnetic Resonance Physics and Instrumentation (3)

Basic principles of magnetic resonance imaging will be introduced. Areas of concentration will include historical development, magnetic theory, instrumentation necessary for the production of magnetic resonance images, and basic pulse sequences. Prerequisite: Technologists registered by the American Registry of Radiologic Technologists or Nuclear Medicine Technology Certification Board, or students who have completed one year and are currently enrolled in an accredited Radiography or Nuclear Medicine program, and RDL/RAD 230 and RDL/RAD 240, or consent of instructor.

RDL 260 Computed Tomography Imaging Technology (3)

Imaging techniques related to the central nervous system, neck, thorax, musculoskeletal system and abdominopelvic regions will be presented. Patient assessment, clinical history, protocol selection, room and patient preparation, patient positioning, equipment utilization, manipulation and filming, image reformatting, evaluation of image quality, identification of pathology, and computer measurement evaluation techniques will be discussed. Interventional procedures will be covered, including common laboratory procedures ordered on specimens. Prerequisite: RDL/RAD 230, RDL/RAD 240, and/or concurrent with RDL/RAD 250, or consent of instructor.

RDL 265 Magnetic Resonance Imaging Technology (3)

Magnetic resonance (MRI) image quality, artifacts, advanced imaging techniques including cardiac gating and magnetic resonance angiography, fast and ultrafast scanning techniques and spectroscopy will be discussed. Students will be provided with safety considerations for patients and others. Prerequisite: RDL/RAD 255 or consent of instructor.

RDL 270 Computed Tomography Special Imaging (3)

Clinical experience will enable the student to develop the skills necessary to obtain high quality CT images. Clinical education will be conducted at a clinical facility after or in conjunction with RDL/RAD 260. CT case studies will be presented in a laboratory setting. Activities will include demonstration, observation, and performance of CT procedures under the direct supervision of a CT technologist at the facility. Patient assessment, protocol selection, imaging techniques, image quality, problem solving and critical thinking will be emphasized. The student must have current CPR certification in Basic Cardiac Life Support for health care providers and must have liability insurance for clinical practice. Laboratory: 15 hours. Prerequisite: RDL/RAD 230, RDL/RAD 240, RDL/RAD 250 and/or concurrent with RDL/RAD 260, or consent of instructor.

RDL 275 Magnetic Resonance Imaging Clinical Seminars (3)

Clinical experience will include patient screening and assessment, image production, image post processing and filming, and image archival and storage. Case studies will be presented during weekly seminars. The student must have current CPR certification in Basic Cardiac Life Support for health care providers and must have liability insurance for clinical practice. Laboratory: 15 hours. Prerequisite: RDL/RAD 265 or consent of instructor.

READING AND STUDY SKILLS

CMS 185 College Reading (3)
CMS 185 is designed to improve textbook reading at the college level by developing vocabulary techniques, comprehension strategies and understanding of textbook graphics. Theories and strategies taught in the course are applied to college level reading materials.

DRE 010 Reading Laboratory (3)
Designed to improve reading comprehension and vocabulary skills, to develop a variety of reading rates, and to prepare students for college reading through individualized and/or group instruction and practice. Students will be recommended to this course based on the placement examination.

DRE 015 College Study Strategies (3)
Deals with the development or improvement of study strategies such as time management, study management in the content areas, organization of ideas, listening, note-taking, memory, test-taking, concentration, cognitive styles, etc. Pass/fail.

DRE 030 Improving College Reading (3)
Designed to improve proficiency in reading comprehension, vocabulary, and critical reading skills. Strategies taught in the course are applied to college level reading materials. Students will be recommended to this course based on the placement examination.

GE 101 Strategies for Academic Success (3)
This course is designed to teach students how to have a successful college experience both academically and personally. The focus will be on the development of practical knowledge and skills to assist students toward that goal. Topics include time planning, test taking, study techniques, critical thinking, community and campus resources, and managing the personal and relationship issues that face many students.

REAL ESTATE

RE 100 Real Estate Principles I (3)
A general introduction to real estate as a business and as a profession, designed to acquaint the student with the wide range of subjects necessary to the practice of real estate. Topics include license law, ethics, purchase and listing agreements, brokerage, deeds, financing, appraisals, mortgages, and real estate property managements.

RE 120 Real Estate Marketing (3)
Marketing and selling of real estate properties are included. Topics emphasized are: qualifying prospects, preparing for property showing, negotiating the sale, developing a five-year goal plan, and managing time. Computer applications are utilized in the course.

RE 121 Appraising (3)
Appraising residential real estate for loans, estates, condemnations, and listings, and the factors that contribute to the value of real estate are addressed. The 3 methods of estimating value are included, with emphasis given to the market data approach.

RE 122 Construction and Blueprints (3)
The basic concepts of construction, design, and blueprint reading are included.

RE 200 Real Estate Principles II (3)
A continuation of Real Estate Principles I, with emphasis on license law, finance, property management, marketing, land planning and development, brokerage management, fair housing, and appraising. Prerequisite: RE 100.

RE 201 Property Management (3)
The basics of managing income-producing real property are examined and applied. Topics include management plans, tenant selection, marketing and advertising, accounting methods, net operating income statements, maintenance, and the Landlord Tenant Act. Prerequisite: RE 100.

RE 202 Real Estate Investments I (3)
A general introduction to the various types of real estate investments. A comparison of investments in real estate with other types of investments. Basic fundamentals of investment analysis and terminology. Prerequisite: RE 100.

RE 220 Real Estate Brokerage Management (3)
A study of the basic real estate principles and theories as they apply to real estate brokerage management are included. Topics included are: legal and work environment; brokerage management concepts; employment agreements; personnel selection, compensation, and management; policy manuals; listing and marketing management; and financial control. Prerequisite: RE 100.

RE 225 Real Estate Finance (3)
All aspects of real estate finance are examined, including financial instruments, financial institutions, buyer qualifications, and mortgage markets. Governmental influence, risk analysis, and financing of income-producing properties are included. Prerequisite: RE 100.

RE 230 Real Estate Law (3)
The laws and regulations pertaining to real estate and related environmental issues are studied. Topics include: ownership rights, title examination, planning and zoning, contracts of sale, Fair Housing regulations, agency issues, court systems and recent court decisions.

RE 299 Selected Topics in Real Estate (Topic) (1-3)
Topics are presented to expand course offerings as new technology and information are developed, as well as to address local real estate needs. Topics may vary from semester to semester at the discretion of the instructor. May be repeated to a maximum of six credit hours. Prerequisite: Consent of instructor.

RELIGIOUS STUDIES

RS 101 — Introduction to Religious Studies (3)
An introductory study of religion with emphasis upon the varieties, differences, and similarities of religious experience and expression. The course will examine, through selected examples, the interaction between religious experience and expression and their particular social and cultural contexts.

RESPIRATORY CARE

RRT 110 Cardiopulmonary Anatomy & Physiology (3)
The normal structure and function of the respiratory and cardiovascular systems including acid-base physiology are addressed. Prerequisite: MAH 151 or MA 109, BSL 110 and BSL 111 with a grade of C or better, or consent of instructor.

RRT 120 Fundamentals of Respiratory Care (4)
An introduction to respiratory care including chest physical assessment, medical gas therapy, humidity and aerosol therapy, bronchial hygiene, airway management, medical asepsis and development of the respiratory care plan. Lecture: 3 hours. laboratory: 4 hours. Prerequisite: MAH 151 or MA 109, BSL 110 and BSL 111 with a grade of C or better, or consent of instructor.

RRT 121 Respiratory Care Practice I (1)

Students will observe and practice medical gas administration, humidity and aerosol therapy, infection control, airway management and bronchial hygiene. Students will also assess patients and participate in developing and implementing respiratory care plans. Laboratory: 4 hours.

Prerequisite: MAH 151 or MA 109, BSL 110 and BSL 111 with a grade of C or better, valid Healthcare Provider CPR card and concurrent with or successful completion of RRT 120.

RRT130 Cardiopulmonary Pharmacology (2)

Pharmacologic principles, general classifications, actions and interactions of drugs affecting the cardiopulmonary system are addressed.

Prerequisite: MAH 151 or MA 109, BSL 110 and BSL 111 with a grade of C or better; or consent of instructor.

RRT131 Respiratory Care Practice II (2)

Students will participate in the health care team while practicing techniques of basic respiratory care including airway management and bronchial hygiene. Laboratory: 8 hours. Prerequisite: RRT 110, RRT 120, RRT 121, and RRT 130 with a grade of C or better. Concurrent with or completion of RRT 140.

RRT 140 Cardiopulmonary Evaluation (2)

Cardiopulmonary assessment is addressed. Topics include blood gas analysis, pulmonary function studies, electrocardiography and chest radiography. Lecture: 1.5 hours, Laboratory: 2 hours. Prerequisite: RRT 110, RRT 120, RRT 121, and RRT 130 with a grade of C or better; or consent of instructor.

RRT 141 Respiratory Care Practice III (2)

Students will begin practicing adult mechanical ventilation procedures and airway management in the critical care setting in addition to continued performance of the basic respiratory care skills. Laboratory: 8 hours. Prerequisite: RRT 131 and RRT 140 with a grade of C or better.

RRT 150 Introduction to Mechanical Ventilation (2)

An introduction to the technological aspects of mechanical ventilation including the theory of operation, classification and patient-ventilator system checks. Lecture: 1.5 hours. Laboratory: 2 hours. Prerequisite: RRT 131 and RRT 140 with a grade of C or better; or consent of instructor

RRT 200 Patient-Ventilator System Management (4)

Concepts in ventilatory support, including physiologic effects, indications, monitoring and management of the patient-ventilator system are addressed. Lecture: 3 hours, laboratory: 4 hours. Prerequisite: RRT 141 and RRT 150 with a grade of C or better; or consent of instructor.

RRT 210 Cardiopulmonary Pathophysiology (3)

The etiology, diagnosis, clinical manifestations and management of cardiopulmonary disorders as related to respiratory care are addressed. Prerequisite: RRT 141 and RRT 150 with a grade of C or better; or consent of instructor.

RRT220 Neonatal/Pediatric Respiratory Care (3)

Evaluation, respiratory care and life support of the neonatal/pediatric are addressed with an emphasis on cardiopulmonary disorders. Lecture: 2.5 hours. Laboratory: 2 hours. Prerequisite: RRT 141 and RRT 150 with a grade of C or better; or consent of instructor.

RRT 221 Respiratory Care Practice IV (4)

Students will observe and practice advanced cardiopulmonary evaluation techniques while improving efficiency in the ventilatory management of adult patients. Students will also begin to practice pediatric/neonatal mechanical ventilation techniques. Laboratory: 16 hours. Prerequisite: RRT 141 and RRT 150 with a grade of C or better.

RRT 230 Preventive and Long-Term Respiratory Care (2)

Prevention of cardiopulmonary disorders and care of individuals with long term cardiopulmonary disability are covered. Psychosocial and physical needs of the client are addressed. Emphasis is on improving the quality of life and cardiopulmonary reserve. Special respiratory care needs of diverse client populations in a variety of settings are covered. Prerequisite: RRT 200, RRT 210, RRT 220 and RRT 221 with a grade of C or better; or consent of instructor.

RRT231 Respiratory Care Practice V (4)

Emphasis is on preparing the student to participate in effectively and efficiently planning, managing and delivering respiratory care to diverse client populations in various settings. Students will also practice pediatric/neonatal mechanical ventilation techniques as well as observe/practice techniques of advanced cardiac life support. Laboratory: 16 hours. Prerequisite: RRT 200, RRT 210, RRT 220 and RRT 221 with a grade of C or better.

RRT 240 Advanced Cardiopulmonary Evaluation (3)

Cardiopulmonary assessment is addressed. Topics include hemodynamic monitoring, pulmonary and cardiac exercise/stress testing, advanced cardiac procedures, blood chemistry/fluid and electrolyte balance. Lecture: 2.75 hours. Laboratory: 1 hour. Prerequisite: RRT 200, RRT 210, RRT 220 and RRT 221 with a grade of C or better; or consent of instructor.

RRT 250 Advanced Cardiac Life Support (2)

This course focuses on managing acute cardiovascular emergencies including: cardiac arrest, acute myocardial infarction and stroke. The course adheres to the American Heart Association Advanced Cardiac Life Support (ACLS) standards. It is designed for healthcare providers whose occupation requires knowledge of ACLS skills. The course is case study driven with group interaction and hands on skills. Students demonstrating essential knowledge and skills during evaluation situations and meeting American Heart Association standards on the written exam will receive an American Heart Association ACLS Provider CPR card. Lecture: 1.5 hours, laboratory: 2 hours. Prerequisite: Current Healthcare Provider CPR card and current enrollment in or graduation from a health program whose occupation requires knowledge of ACLS skills.

RRT 260 Respiratory Care Seminar (1)

This course will allow students to further analyze material previously studied in the program. In addition, students will systematically prepare for the National Board for Respiratory Care (NBRC) examinations. Job seeking skills will also be addressed. Prerequisite: RRT 200, RRT 210, RRT 220 and RRT 221 with a grade of C or better; or consent of instructor.

RUSSIAN AND EASTERN STUDIES**CHI/RAE 150 Beginning Chinese I (4)**

A course in first semester Chinese language

CHI/RAE 151 Beginning Chinese II (4)

A course in second semester Chinese language. Prerequisite: RAE 150 or equivalent.

SECURITY MANAGEMENT**LSI 100 — Fundamental Principles of Physical Security (2)**

Introduction to the basic elements of physical security techniques, along with the direction to implement a security program. Emphasis on designing a physical security program to be as effective and unobtrusive as possible. In addition, an introduction to security hardware and

access control systems to increase the effectiveness of evaluation, recommendation, and/or purchasing decisions. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 101 — Perimeter Security (2)

Perimeter security is truly the first line of defense for any facility. This class will cover the principles of perimeter security, including fences and walls. Defeat techniques are addressed. Perimeter intrusion detection systems will be addressed, including microwave systems, cable based fence sensors, buried cable and other technologies. Gates and Vehicle barriers are addressed. Water/floating barriers are addressed. Students will design and build a high-risk vehicle entrance. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 103 — Closed Circuit Television (CCTV) Systems (2)

Camera set up, lighting, environment, lensing and sensitivity. Hands-on involvement throughout the course including live reviews of students' final results. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 105 — Force Protection (3)

Provides necessary training for the U.S. Department of Defense and government security personnel to enable them to create a comprehensive physical security outline for the protection of personnel and property at a mobile or fixed command. Components: Lecture. Lecture: 3 credits (45 contact hours).

LSI 107 — Intrusion Detection (2)

Addresses current technologies in intrusion detection systems (IDS) and IDS equipment, in both interior and exterior applications. Techniques include office environments, and industrial environments, including docks, yards and shipping/warehouse environments. Microwave, Passive Infrared, and pros and cons of system components. Emphasis is on total system design, to include set-up on interior and exterior systems. Also addresses Video Intrusion. Includes practical exercises to reinforce material. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 110 — Security Surveys (2)

Addresses all aspects of security including personnel security, physical security, technical security and computer information security. Components: Lecture. Lecture: 2 credits (30 contact hours)

LSI 112 — Security Surveys/Security Audits (2)

Basics of conducting a security survey are discussed. Includes risk and threat analysis, pre-survey preparations, creating the survey team and conducting the survey. Covers indentifying the proper procedure for preparing and conducting a Security Survey/Audit. Lecture: 2 credits (30 contact hours). Components: Lecture.

LSI 115 — Command Security Officer Training (4)

Provides Department of Defense and government security personnel with the necessary training to enable them to create a comprehensive physical security outline for the protection of personnel and property at a mobile or fixed command. Components: Lecture. Lecture: 3 credits (45 contact hours); Laboratory: 1 credit (30 contact hours/30:1 ratio). Prerequisites: Must be Department of Defense personnel to receive ATFP Level II certification.

LSI 120 — Comprehensive Security Specialist (4)

Provides the security professional with training in all aspects of security, including physical security, crime prevention, security surveys and contingency planning for internal and external threats. Addresses current trends in politics and procedures. Prerequisites: Students may be thoroughly investigated prior to taking of any LSI course. Components: Lecture. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (30 contact hours).

LSI 125 — Supply Chain Security (2)

Addresses security throughout Transportation, Storage, Shipping and Receiving of cargo and the concept of proactive versus reactive, planning and the overall needs of a security operation. Covers specific security systems, as well as the creation and implementation of security policies. A Security Design section of the program looks at ways to maximize the security benefit within operational (financial and aesthetic) constraints. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 127 — Cargo Crime (2)

An in-depth assessment of the cargo crime threat. Deals with threats to cargo while it is in transit. Includes containers, trucks, air cargo and movement through ports and truck stops. Addresses modern piracy and covers proactive (preventive security) measures, as well as reactive (investigation and documenting) cargo theft issues. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 130 — GSA: Locks, Vaults & Containers Certified Technician Training (4)

Provides instruction to successfully service, maintain, perform covert and forced entry and repair GSA approved security containers. Prerequisites: Students may be thoroughly investigated prior to taking of any LSI course. Components: Lecture. Lecture: 3 credits (45 contact hours). Laboratory: 1 credit (30 contact hours)

LSI 131 — GSA: Locks, Vaults & Containers Certified Inspectors Training (1)

Provides instruction to certify the student as an inspector of GSA locks, vaults, and containers. Certifies inspectors are able to assess and certify the complete functionality of GSA locks, vaults, and containers. Prerequisites: LSI 130 or consent of instructor. Components: Lecture. Lecture: 0.5 credits (8 contact hours). Laboratory: 0.5 credits (15 contact hours).

LSI 140 — Managing Terrorism and Other Crises (1)

Provides training to cover domestic and international terrorist groups and the effects they have on America and the concept of contingency planning in comparison to other types of operations planning. Provides a basic knowledge regarding the management of a bomb threat and identification of explosives and incendiary devices. Prerequisites: Students may be thoroughly investigated prior to the taking of any LSI course. Components: Lecture. Lecture: 1 credit (15 contact hours).

LSI 144 — Terrorism (2)

Addresses International and Domestic Terrorism and their threat to America. Introduces students to who terrorists are, what they are capable of, and when, where, and why they would most likely strike. Covers Pre-Incident planning and Incident and Post-Incident response. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 146 — Crisis Management/ Contingency Planning (2)

Homeland Security Presidential Directive #5, (HSPD-5), Issued February 28, 2003, requires all federal departments and agencies to adopt and use The National Incident Management System (NIMS) in their individual domestic incident management and emergency prevention, preparedness, response, recovery and mitigation programs and activities, as well as in support of those actions taken to assist state, local, or tribal entities. The Crisis Management/Contingency Planning course provides a NIMS approach to a consistent nationwide approach for Federal, State, Local, and Tribal governments to work effectively and efficiently together to prepare for, prevent, respond to, and recover from domestic incidents, regardless of cause, size, or complexity. HSPD-5 requires all federal departments and agencies to make adoption of the NIMS by state and local organization a condition for Federal preparedness assistance beginning in FY 2005. Short-term compliance includes adoption of the basic tenets of the Incident Command System. Components: Lecture. Lecture: 2 credits (30 hours).

LSI 150 — Professional Locksmithing (4)
A comprehensive hands-on knowledge of locks. Provides the student with the information necessary to become a competent technician who can service, maintain, troubleshoot and master any industrial key lock system. Prerequisites: The student may be thoroughly investigated prior to the taking of any LSI course. Components: Lecture. Lecture: 3 credits (45 contact hours); Laboratory: 1 credit (30 contact hours).

LSI 151 — Basic Penetration of Safes (1)
Addresses techniques and skills required to strategically drill into a container and defeat the locking mechanism in order to penetrate a safe or security container. Prerequisites: LSI 153. Components: Lecture. Lecture: 1 credit (15 contact hours).

LSI 152 — Combination Lock Manipulation (1)
Provides technicians a complex and in-depth investigation of the working of the combination lock that will provide the technician with the capability of determining the combination without drilling the lock. Prerequisites: LSI 153. Components: Lecture. Lecture: 0.5 credits (8 contact hours); Laboratory: 0.5 credits (15 contact hours).

LSI 153 — Safe Lock Servicing - Mechanical and Electronic(2)
Provides instruction in the operation and servicing of mechanical and electronic safe locks. Prerequisites: Students may be thoroughly investigated prior to the taking of any LSI course. Components: Lecture. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (30 contact hours).

LSI 160 — Fundamentals of Electricity (2)
Basic electrical principles, circuit design and application, and electrical components needed to comprehend the principles of electronic security systems. Prerequisites: Students may be thoroughly investigated prior to the taking of any LSI course. Components: Lecture. Lecture: 1 credit (15 contact hours). Laboratory: 1 credit (30 contact hours).

LSI 170 — Electronic Access Control (2)
Provides instruction in the latest security technology utilizing electronic access control systems. The technician will design, install, and troubleshoot the latest electronic access control systems. Prerequisites: LSI 160. Components: Lecture. Lecture: 1 credit (15 contact hours); Laboratory: 1 credit (30 contact hours).

LSI 174 — Access Control (2)
Addresses current technologies in access control; access control equipment, from card readers to biometric readers; output devices, such as electric strikes and magnetic locks; and pros and cons of system components. Emphasis is on total system design, to include set-up of zones' access levels, and provides exercises to practice the techniques taught. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 177 — Information Technology Security (2)
Covers the ever-growing threats of IT Security (Viruses, Worms, Trojans, DoD, etc.). How these threats can impact an organization. Outlines the tools, policies, and procedures that are required to have a solid IT security program. Reviews the role that Incident Response, Disaster Recovery, and Forensics play if a security breach occurs. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 180 — Security and Crime Prevention Management (1)
Provides instruction to allow the security manager to anticipate, recognize, and appraise crime risks, and to initiate some action to remove or reduce the risk. Discusses security hardware and procedures, and

conducts physical security surveys. Covers many specific techniques to prevent robbery, vandalism, and other types of crime. Components: Lecture. Lecture: 1 credit (15 contact hours). Prerequisites: Students may be thoroughly investigated prior to the taking of any LSI course.

LSI 182 — Managing a Security Operation (2)
Prepares a security manager to effectively and efficiently operate a security operation. Covers security specific and non-security specific management issues. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 184 — Guard Force Contracting (2)
The importance of applying sound selection and contracting procedures as it relates to Contract Guard forces. Identifying the need of the guard force, justifying the need, solicitation of the contract, award of the contract and proper administration of the contract. Includes a series of exercises on determining need, establishing source selection committees, determining selection criteria and developing inspection teams. Components: Lecture. Lecture: 2 credits (30 contact hours).

LSI 185 — Security and Crime Prevention Countermeasures(1)
Various methods of providing perimeter security and analysis of security design. The theory and application of closed circuit television systems, various applications and limitations of intrusion detection systems, and various types of protective lighting. Prerequisites: Students may be thoroughly investigated prior to the taking of any LSI course. Components: Lecture. Lecture: 1 credit (15 contact hours).

LSI 190 — Security Hardware and Bypass Techniques (1)
An introduction to the types of locks and locking systems currently available to the security profession. Lock construction and techniques to defeat locks. Prerequisites: Students may be thoroughly investigated prior to the taking of any LSI course. Components: Lecture. Lecture: 1 credit (15 contact hours).

LSI 195 — Tactical Entry (8)
Provides Law Enforcement or Government Personnel knowledge needed to gain safe entry into containers, rooms, buildings, facilities, or vehicles. Prerequisites: Restricted admission to Law Enforcement Professionals and US Military Personnel. Components: Lecture. Lecture: 5 credits (75 contact hours). Laboratory: 3 credits (90 contact hours).

SOCIAL WORK

SW 124 Introduction to Social Services (3)
Introduction to social welfare concepts and philosophies. Examination of the profession of social work and its philosophy and value commitments within social welfare. Public and private service delivery systems will be studied. Required of social work majors and recommended it be taken the first year.

SW 222 Development of Social Welfare (3)
Study of the cultural traditions, value orientations, and political and economic forces which have contributed to the emergence of present social welfare policies and systems in the United States. Required of social work majors and open to all others.

SOCIOLOGY

SOC 101 Introductory Sociology (3)
Introduction to the concepts and methods of sociology. Investigation of socialization, group processes, social institutions and social change. Student may not receive credit for both this course and GEN 102. V

SOC 152 Modern Social Problems (3)
An introductory course involving an examination of selected social problems of the day. Topics may include family, poverty, education, crime, race, housing, population, health care, industrial development, and power. Prerequisite: SOC 101 or SOC 151 or equivalent social science background. V

SOC 235 Inequality in Society (3)
Analysis of the nature, development, and persistence of inequality in various societies. Diverse dimensions of inequality are viewed as the basis for a number of specific social problems in Western and non-Western societies. Social origins of inequality are emphasized. Policy implications are addressed. Prerequisite: Three hours of sociology or equivalent social science background. V

SOC 260 Population, Resource, and Change (3)
The interrelationship among population variables (size, composition, change), social systems, and environmental conditions will be explored from an issue of problems approach. The tools of populations studies will be introduced and used to examine how population influences society and mankind's use of the environment. Prerequisite: Three hours of sociology or equivalent social science background.

SOC 299 Special Introductory Topics in Sociology (Subtitle required) (3)
An introductory study of a selected topic in sociology. Topics may include, but are not limited to, industrial sociology, sociology of aging, sex roles, criminology, stratification and urban sociology. May be repeated to a maximum of six credits under different subtitle. Prerequisite: Three hours of introductory level sociology or consent of instructor.
Spanish

SPA 101 Elementary Spanish I (spoken approach) (4)
This course is designed to introduce basic modes of communication in Spanish. The emphasis is on everyday language which the students will learn by applying essential grammatical structures to vocabulary. Both listening and reading comprehension are stressed. The textbook provides instructional assignments and self-correctional exercises. Not open to students who have credit for SPI 141. VI

SPA 102 Elementary Spanish II (spoken approach) (4)
A continuation of SPI 101. Not open to students who have credit for SPI 142. Prerequisite: SPI 101 or consent of the department and placement test. VI

SPA 201 Intermediate Spanish III (spoken approach) (3)
Review and reinforcement of grammatical and phonological patterns. Emphasis will be given to developing reading, listening and speaking skills based on contemporary texts. Not open to students who have credit for SPI 241. Prerequisite: SPI 102 or consent of department and placement test. VI

SPA 202 Intermediate Spanish IV (spoken approach) (3)
Continuation of SPI 201. Not open to students who have credit for SPI 242. Prerequisite: SPI 201 or consent of department and placement test. VI

SPECIAL EDUCATION

SED 101 American Sign Language I (3)
A functional-notational approach to learning beginning competency in American Sign Language (ASL). The syntax, grammar, and non-manual markers (behaviors) of ASL and cultural information will be incorporated. After an initial orientation period, no verbal communication will be used in the classroom.

SED 102 American Sign Language II (3)
A functional-notational approach designed to follow SED 101 that will enhance students' knowledge of American Sign Language and expand their understanding and appreciation of the people who use it. Prerequisite: SED 101.

SED 203 American Sign Language III (3)
Emphasis is placed on practical application of ASL signing skills, development of cross-cultural communication abilities, and vocabulary expansion. Linguistic information is reviewed and additional linguistic materials are introduced. Prerequisite: SED 102.

SED 204 American Sign Language IV (3)
Continued expansion of sign vocabulary, sharpening of conversational skills including fingerspelling and numbers, semantics, morphology, syntax and other ASL features applied to conversational settings. Prerequisite: SED 203.

STATISTICS

STA 200 Statistics: A Force in Human Judgment (3)
This course is concerned with the interaction of the science and art of statistics with our everyday lives emphasizing examples from the social and behavioral sciences. The student will not be required to learn mathematical formulas. Topics include the nature of statistics, uses and misuses of statistics, the scope and limitations of statistics, criteria by which published statistics may be judged, interpretation of probability and the art of decision making. Prerequisite: Completion of the math requirement. III

STA 291 Statistical Method (3)
Introduction to principles of statistics. Statistical description of sample data including frequency distributions, measures of central tendency, and measures of dispersion. Theoretical distributions, statistical estimation, and hypothesis testing. Introduction to simple linear regression and correlation. Prerequisite: MA 113, 123 or equivalent. III

STUDENT DEVELOPMENT AND COUNSELING

SDC 100 College Survival Seminar (1)
This course is designed to introduce new students to college in order to facilitate a successful college experience. Students will discover campus resources and support services available to them. Students will be introduced to career and life planning, study strategies, coping skills (i.e., stress management, interpersonal relationships), team projects, activities aimed at self discovery, and issues that impact college campuses and our global society that are important to the development of the modern college student.

SDC 102 Stress Management (1)
Students will review various physiological and psychological approaches to stress with an emphasis on creating an awareness of how to change and manage their responses to stressful situations. Options and appropriate exercises for coping with anxiety will be presented. Topics will include time management, cognitive restructuring, health, wellness and relaxation training.

SDC 105 Career Planning Seminar (1)
Students will become more knowledgeable about themselves and career options. Self-assessments and vocational inventories measuring interests, work values, skills and abilities will be administered to students. Students will learn how to research careers, career alternatives and employment trends. Topics will include goal setting, decision-making

and employability skills. Students will complete a personal career plan at the conclusion of the course.

SDC 109 Employability Skills (1)

This course is designed to prepare students for the world of work. Students will be introduced to self and career assessment, employability skills (i.e., the application process, resume writing, interviewing, and follow-ups), and the job market and job search strategies.

SMALL ENGINE REPAIR

SET 100 — Introduction to Small Engine Repair (3)

This course introduces the student to small engines and their various applications. Also included are the identification and demonstration of hand tools, special tools, and measuring tools. It covers the selection and use of shop manuals and applying safety procedures when working with small engines. Components: Lecture. Prerequisites: None.

SET 110 — Basic Small Engine Theory (3)

This course introduces the student to the principles of construction and operation of internal combustion engines including the definitions of the following trade terms: valve overlap, reed valve, two-stroke cycle engine and four-stroke cycle engine. Components: Lecture. Corequisites: SET 100.

SET 111 — Basic Small Engine Lab (1)

This course provides applications of the theory presented in SET 110. It includes hands-on experience, step-by-step procedures for disassembling engines, identification of engine components, inspection of parts, performing precision measurements on crankshaft, cylinder bore and valves, and the reassembly of the engines. Components: Laboratory. Corequisites: SET 110.

SET 116 — Introduction to Marine Technology (3)

This course introduces the student to outboard and inboard motors and boats, safety practices and the operation of two-cycle and four-cycle motors. Components: Lecture. Prerequisites: None.

SET 117 — Marine Electrical and Fuel Systems (2)

This course presents electrical theory and applications for the marine technician including the marine battery, starter systems, alternator charging systems, and fuel systems. Components: Laboratory. Prerequisites: None.

SET 118 — Powerhead Overhaul (3)

This course presents instruction in overhauling two-cycle engines and repairing and/or replacing ignition systems. Components: Lecture. Prerequisites: None.

SET 119 — Powerhead Overhaul Lab (1)

This course presents hands-on experience in overhauling two-cycle motors, tuning-up motors and repairing and/or replacing ignition systems. Components: Laboratory. Corequisites: SET 118

SET 120 — Mid-Section, Lower Unit and Trim/Tilt (3)

This course presents the theory and application necessary to repair and/or replace parts in the mid-section, lower unit, and trim/tilt systems in marine applications. Components: Lecture. Prerequisites: None

SET 121 — Mid-Section, Lower Unit and Trim/Tilt Lab (2)

This course presents hands-on instruction in the theory necessary to repair and/or replace parts in the mid-section, lower units, and trim/tilt systems in marine applications. Components: Laboratory. Corequisites: SET 120.

SET 122 — Four-Cycle Engine/Stern Drive (3)

This course presents the theory and application of repair and overhaul methods for the four-cycle engines, and how to make repairs of various stern drive systems. Components: Lecture. Prerequisites: None.

SET 123 — Four-Cycle Engine/Stern Drive Lab (1)

This course presents hands-on training in the theory and application of repair and overhaul methods for the four-cycle engines, and how to make repairs of various stern drive systems. Components: Laboratory. Corequisites: SET 122

SET 200 — Electrical Systems (3)

This course presents electrical systems and their application. Basic electrical theory, including electrical pressure, current, resistance and power measured in volts, amperes, and ohms is also presented. Ohm's law will be discussed with its application to electrical circuits. Basic circuits (series, parallel, and combination of series and parallel) will be discussed. Components: Lecture. Prerequisites: None.

SET 201 — Electrical Systems Lab (1)

This course presents hands-on training in electrical systems and their application. Basic electrical theory, including electrical pressure, current, resistance and power measured in volts, amperes, and ohms is presented. Ohm's law will be discussed with its application to electrical circuits. Basic circuits (series, parallel, and combination of series and parallel) will be discussed. Components: Laboratory. Corequisites: SET 200

SET 210 — Ignition/Charging Systems (3)

This course presents ignition/charging systems theory, the principle of operation of a generator/alternator system, and component identification and application. Components: Lecture. Prerequisites: None

SET 211 — Ignition/Charging Systems Lab (1)

This course presents hands-on experience with ignition/charging systems, the principle of operation of a generator/alternator system, and component identification and application. Components: Laboratory. Corequisites: SET 210.

SET 220 — Fuel Systems (3)

This course introduces fuel systems used on two-cycle and four-cycle engines: the basic types, components, the types of carburetors, the types of fuel filters, and the types of fuel pumps and air filters. Components: Lecture. Prerequisites: None.

SET 221 — Fuel Systems Lab (1)

This course provides hands-on experience with fuel systems. The student will diagnose carburetor problems, rebuild diaphragm-type and float type carburetors, test carburetors and make needed adjustments, and adjust the governor according to manufacturers' specifications on two-cycle and four-cycle engines. Components: Laboratory. Corequisites: SET 220.

SET 230 — Introduction to Motorcycle Technology (3)

This course will introduce the student to motorcycle repair. It will cover the career of the motorcycle repair technician, including entry-level skills, advancement opportunities and activities performed at a dealership. Safe working practices, accident prevention, proper lifting, and recognizing typical hazards around a motorcycle service department will be stressed. Components: Lecture. Prerequisites: None.

SET 231 — Motorcycle Chassis Systems (3)

After completion of this course, the student will be able to identify front fork components and service procedures for the steering assembly. The student will be able to identify the service requirements for final drives and the front fork. Instruction will be given in the inspection of brake systems, safe handling of brake fluid, replacing brake shoes and pads, and bleeding hydraulic brake systems. Components: Laboratory. Prerequisites: None.

SET 233 — Carburetors and Fuel Systems (2)
The student will be able to identify parts of a motorcycle carburetor and discuss the components and operations of various carburetor circuits. The student will also be able to remove, clean, and install a carburetor and remove, clean and install a fuel valve. Components: Laboratory. Prerequisites: None.

SET 235 — Clutches and Starter Systems (1)
Upon completion of this course the student will be able to discuss starter systems found on motorcycles and have a working knowledge of servicing kick and electric starters. The student will also be able to identify parts of a clutch, discuss guidelines for clutch service and be able to remove, disassemble, inspect and reassemble a motorcycle clutch. Components: Laboratory. Prerequisites: None.

SET 237 — Engine Tune-Up (2)
After completion of this course the student will be able to perform motorcycle engine tune-ups including: ignition systems, replacing points and condensers, adjusting and verifying timing and service guidelines. Components: Laboratory. Prerequisites: None.

SET 239 — Tools and Measurements (1)
After completing this course the student will be able to list and demonstrate the ability to use the tools of the motorcycle technician, including hand tools, power tools, measuring instruments and specialty tools. Components: Laboratory. Prerequisites: None.

SET 240 — Four Stroke Cycle Engine (3)
This course presents theory, repair and overhaul methods of four-cycle engines. The student will learn to inspect engines for problems, follow service manuals for measuring cylinder bore, piston fit, ring clearance, rod clearance, crankshaft clearance and valve train components. The student will use special tools including a cylinder hone, valve guide reamer, valve seat cutter, and valve grinder and demonstrate safety practices while using this equipment. Components: Lecture. Prerequisites: None.

SET 241 — Four Stroke Cycle Engine Lab (1)
In this course, students repair and overhaul four-cycle engines, inspect engines for problems, follow service manual specifications needed for measuring cylinder bore, piston fit, ring clearance, rod clearance, crankshaft clearance and valve training components. Students will use the following special tools: cylinder hone, valve guide reamer, valve seat cutter, and valve grinder. Safety practices will be observed while using the equipment. Components: Laboratory. Corequisites: SET 240.

SET 250 — Two Stroke Cycle Engine (3)
This course presents theory, repair and overhaul methods of two-stroke cycle engines. Students learn to inspect engines for problems, follow a service manual for measuring cylinder bore, piston fit, ring clearance, rod clearance, crankshaft clearance and valve training components. This course introduces students to the following special tools: cylinder hone, valve guide reamer, valve seat cutter, and valve grinder. Safety practices will be observed while using equipment. Components: Lecture. Prerequisites: None.

SET 251 — Two Stroke Cycle Engine Lab (1)
Students repair and overhaul two-cycle engines. Students disassemble, inspect, and service cylinder, piston rings and connecting rod, crankshaft and crankcase assembly, and demonstrate effective safety practices while using special equipment. Students also reassemble and test engines and components to standards set by manufacturer. Components: Laboratory. Corequisites: SET 250.

SET 255 — Chassis Systems (2)
This class presents hands-on application of the theory, repair, and overhaul methods of manual and hydrostatic transmissions. It includes how to inspect, diagnose, and repair manual and hydraulic steering systems and deck assemblies. The student will also learn how to perform preventative maintenance, adjust wheel bearings, check steering alignment and remove and replace tires. This course will introduce the student to special tools, tire changers, and the safety practices associated with the use of this equipment. Components: Laboratory. Prerequisites: None.

SET 257 — Welding for Small Engines (1)
This class introduces students to the art and science of welding. Students learn to prepare the equipment and to perform basic welding operations. Components: Laboratory. Prerequisites: None.

SET 259 — Portable Two Cycle Equipment Lab (2)
This class will enable the student to identify the external parts of the equipment, operate equipment, handle and mix fuel, and transport and handle trimmers and saws. Instruction will be given to identify and diagnose related problems in chain saws, trimmers and other two-stroke cycle equipment. Components: Laboratory. Prerequisites: None.

SET 298 — Practicum (2)
Practicum provides supervised on-the-job work experience related to the student's education objectives. Students participating in practicum do not receive compensation. Components: Practicum. Prerequisites: Permission of Instructor.

SET 299 — Cooperative Education (2)
Co-op provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Co-op Education Program receive compensation for their work. Components: Co-Op. Prerequisites: Permission of Instructor.

SURGICAL TECHNOLOGY

SUR 100 — Surgical Technology Fundamentals/Theory (12)
Provides a brief overview of the history of surgery and an in-depth introduction of the role and responsibilities of the surgical technologist, an integral health care professional in the delivery of perioperative patient care and surgical services. Includes professional responsibilities, legal and ethical considerations, interpersonal relationships and communications skills. The course also incorporates safety, aseptic technique and duties of the scrubbed and the circulating surgical technologist during a surgical procedure. It provides in-depth information for the successful preparation, performance and completion of basic surgical procedures. Specialty areas of general surgery, ob/gyn with attendant specialty equipment are addressed. It further introduces the theory of abdominal incisions, wound closures, and standard precaution skills in each clinical assignment. Components: Lecture
Lecture: 12 credits.
Prerequisites: HEA 110 or BSL 107 or (BSL 110 & 111); HEA 120 or CLA 131 or AHS 115 or OST 103; HEA 130 or (BIO 208 & 209) or BSL 212; Current CPR

SUR 101 — Surgical Technology Fundamentals/Lab (1)
In a lab setting, the student will prepare the patient, operating room, basic equipment, supplies and perform the daily functions of an operating room team member. The student will incorporate safety, aseptic technique, and duties of both the scrubbed and circulating technologist during a surgical procedure, following OSHA standards. **Students must successfully complete SUR 101 prior to being eligible to participate

in SUR 125; failure to successfully complete SUR 101 leads to being administratively withdrawn from the program. (SUR 101 is usually offered the first half of the semester.)

Components: Laboratory

Lecture: 0; Lab 1 credit (90:1 ratio). Prerequisites: HEA 110 or BSL 107 or (BSL 110 & 111). HEA 120 or AHS 115 or CLA 131 or OST 103. HEA 130 or (BIO 208 & 209) or BSL 212. Current CPR certification for Healthcare Professional. CPU 150 or CIS 100. WPP 2

SUR 103 — Surgical Technology Didactic Practicum (1)

Additional experience in the following areas as needed by the individual student: Preparation and maintenance of operating room physical environment, patient preparation, scrub, gown and glove, setup (instrumentation, equipment, supplies) and counts. An adjunct course to SUR 101. This course is Pass/Fail. Lab 1 credit (45:1 ratio). Prerequisites: HEA 110 or BSL 107 or (BSL 110 & 111); HEA 120 or AHS 115 or CLA 131 or OST 103; HEA 130 or BSL 212 or (BIO 208 & 209); current CPR certification for Healthcare Professionals; CPU 150 or CIS 100; WPP 200 or BA 250. All prerequisites must be achieved with a grade of C or greater. Co-requisites: SUR 100 & SUR 101.

Components: Laboratory

SUR 125 — Surgical Technology Skills Practicum I (2)

Designed to provide students experience in a clinical setting, performing the duties of a scrubbed and/or circulating technologist during an assigned surgical procedure. OSHA standards are emphasized.

Components: Clinical

Lecture: 0; Lab 0; Clinical 2 credits (60:1 ratio).

Prerequisites: HEA 110 or BSL 107 or (BSL 110 & 111); HEA 120 or CLA 131 or AHS 115 or OTM 150; HEA 130 or (BIO 208 & 209) or BSL 212; Current CPR certification for Healthcare Professionals; CPU 150 or CIS 100; WPP 200 or BE 250; SUR 101. All prerequisites must be achieved with a grade of C or greater. Co-requisites: SUR 100 and SUR 130.

Corequisites: SUR 100, 130

SUR 130 — Principles of Surgical Pharmacology (2)

Designed to introduce the fundamental principles of the clinical use of drugs. Emphasis is placed on the role and responsibility of the surgical technologist related to drugs, a review of basic mathematic skills, a thorough knowledge of the systems of measurement, and conversion and application of skills to perform dosage calculations. Information related to medicines in common use in the surgical setting is presented. Anesthesia drugs and techniques including regional, general, and local administration are covered.

Components: Lecture

Prerequisites: HEA 110 or BSL 107 or (BSL 110 & 111); HEA 120 or AHS 115 or CLA 131 or OST 103; HEA 130 or BSL 212 or (BIO 208 & 209); current CPR certification for Healthcare Professionals; CPU 150 or CIS 100; WPP 200 or BA 250.

Corequisites: SUR 100 and SUR 101 and SUR 125

SUR 200 — Surgical Technology Advanced Theory (9)

Focuses on the relevant anatomy, indications for surgery, patient preparation, special equipment and supplies, purpose, expected outcomes, and possible complications of specialty areas following OSHA standards.

Components: Lecture

Lecture: 9 credits.

Prerequisites: SUR 100 and SUR 125 and SUR 130. All prerequisites must be achieved with a grade of C or greater.

Corequisites: SUR 201

SUR 201 — Surgical Technology Skills Practicum II (6)

Designed to provide students experience in a clinical setting, performing the duties of a scrubbed and/or circulating technologist during an assigned surgical procedure, following OSHA standards.

Components: Clinical

Lecture: 0; Lab: 0; Clinical: 6 credits (60:1 ratio).

Prerequisites: SUR 100 and SUR 101 and SUR 125 and SUR 130. All prerequisites must be achieved with a grade of C or greater.

Corequisites: SUR 200.

SUR 275 — Surgical Technology Advanced Clinical Practicum

Designed to provide students experience in an advanced clinical setting performing the duties of a scrubbed and/or circulating technologist during an assigned surgical procedure, with limited supervision. OSHA standards will be followed.

Components: Clinical

Lecture: 0; Lab: 0; Clinical 2 credits (60:1 ratio).

Prerequisites: SUR 200 and SUR 201. All prerequisites must be achieved with a grade of C or greater.

SUR 280 — Surgical Anatomy (7)

The Surgical Anatomy course provides accurate information about the structure and function of the human body. The course is planned for students who are pursuing a career as a Surgical First Assistant.

Components: Lecture

Lecture: 7 hours.

Prerequisites: Program admission.

SUR 282 — Perioperative Bioscience (3)

This course promotes an understanding of microbial physiology, specific and non-specific defense mechanisms, and an understanding of the effects of pre and post-operative drugs. The course will also cover drugs used during the operation by the surgical team. The Anesthesia section of the course is designed to promote an understanding of general principles/techniques and drugs used.

Components: Lecture

Lecture: 3 hours.

Prerequisites: Program admission.

SUR 284 — Principles of Surgical Assisting (4)

This course introduces the student to the theory involved in surgical assisting. The course incorporates anatomy, surgical techniques, aseptic techniques, draping, positioning, suturing, safety, and duties of the surgical team.

Components: Laboratory, Lecture

Lecture: 3 hours, Lab: 3 hours.

Prerequisites: Program admission.

SUR 292 — Applied Bio-Science (2)

This course introduces the student to diagnostic testing e.g. radiology, laboratory, cardio graphics and EKG. Included in the course will be information on wound healing, nutrition preoperatively, fluid and electrolyte balance and techniques in maintaining homeostasis. In addition, exploration of potentially life threatening conditions surrounding the critical ill patient when surgery is considered will be examined.

Components: Lecture

Lecture: 2 hours.

Prerequisites: Program admission.

SUR 295 — Surgical First Assistant Clinical (4)

In a clinical setting the student will perform the duties of a Surgical First Assistant during assigned surgical procedures. The nature of the cases shall be varied according to the Association of Surgical Technologists' standards for certification and meet the minimum of 100 cases.

Components: Clinical

Laboratory: 12 hours.

Prerequisites: Program admission.

THEATRE

TA 101 — Introduction to Theatre: Principles and Practice (3)

The cultivation of judgment, perception, and creative response to theatre, with emphasis on what and how theatre communicates through examination of both the processes and product of theatre.

TA 126 — Acting I: Fundamentals of Acting (3)

A broad spectrum of skills will be explored in the creative process of acting ensemble. These skills include improvisation, movement disciplines (including theatre games, modern dance, and characterization), emotional and sensory awareness, and the process of integrating these into a clearly defined stage technique.

TA 150 — Fundamentals of Production (3)

A comprehensive study of the basic organizational structure, processes and techniques involved in theatre design, technology and management with particular reference to the UK Theatre.

WELDING

WLD 100 — Oxy-Fuel Systems (2)

A working knowledge of oxy-fuel identification, set-up, inspection, and maintenance; consumable identification, selection and care; principles of operation; and effects of variables for manual and mechanized oxy-fuel cutting, welding, brazing principles and practices, and metallurgy. Shop safety and equipment use are also covered.

Components: Lecture

Lecture: 2 credits (30 contact hours) Co-requisite: WLD 101 or Consent of Instructor.

WLD 101 — Oxy-Fuel Systems Lab (2)

Manipulative skills necessary to weld and cut plate and pipe in all positions, as well as brazing, braze welding, and gouging. Lab: 2 credits (60 contact hours/30:1 ratio) Co-requisite: WLD 100 or Consent of Instructor.

Components: Laboratory

WLD 110 — Cutting Processes (2)

A working knowledge of various cutting processes used by the welding industry. Will include, but is not limited to, safety, theory of operation, setup and operating techniques, troubleshooting and making minor equipment repairs, terms and definitions, identification, evaluation, repair and prevention of discontinuities of cut surfaces. Includes oxy-fuel cutting, plasma arc cutting, exothermic cutting, air carbon arc cutting, shielded metal arc cutting, and mechanical cutting process.

Components: Lecture

Lecture: 2 credits (30 contact hours) Co-requisite: WLD 111 or Consent of Instructor.

WLD 111 — Cutting Processes Lab (3)

Designed to provide the student with practical experience to become proficient in the use of various metal cutting processes. Safety, setup, and operating techniques are employed. Students will troubleshoot and make minor repairs to equipment. Students will also learn to identify, repair, and prevent reoccurrence of cut surface discontinuities. Processes shall include, but not limited to: OFC, PAC, AAC, and mechanical methods. Various materials will be used where appropriate. Lab: 3 credits (90 contact hours/30:1 ratio) Co-requisite: WLD 110 or Consent of Instructor.

Components: Laboratory

WLD 120 — Shielded Metal Arc Welding (2)

Teaches students the identification, inspection, and maintenance of

SMAW electrodes; principles of SMAW; the effects of variables on the SMAW process to weld plate and pipe; and metallurgy.

Components: Lecture

Lecture: 2 credits (30 contact hours). Co-requisite: WLD 121 or Consent of Instructor.

WLD 121 — Shielded Metal Arc Welding Fillet Lab (3)

Provides laboratory experiences in which the student acquires the manipulative skills to perform fillet welds in all positions. Lab: 3 credits (90 contact hours/30:1 ratio) Co-requisite: WLD 120 or Consent of Instructor.

Components: Laboratory

WLD 123 — Shielded Metal Arc Welding Groove with Backing Lab

Provides experiences in which students acquire the manipulative skills to do groove welds in all positions with backing.

Components: Laboratory

Laboratory: 3 credits (90 contact hours/30:1 ratio). Prerequisites: WLD 120 and 121 or Consent of Instructor.

WLD 130 — Gas Tungsten Arc Welding (2)

Identification, inspection, and maintenance of GTAW machines; identification, selection and storage of GTAW electrodes; principles of GTAW; the effects of variables on the GTAW process; and metallurgy. This course also teaches the theory and application of Plasma Arc Cutting. Co-requisite: WLD 131 or Consent of Instructor.

Components: Lecture

Lecture: 2 credits (30 contact hours).

WLD 131 — Gas Tungsten Arc Welding Fillet Lab (3)

Teaches the necessary manipulative skills needed to apply the Gas Tungsten Arc on various joint designs on plate with both ferrous and non-ferrous metals. Plasma Arc cutting included. Co-requisite: WLD 130 or Consent of Instructor.

Components: Laboratory

Laboratory: 3 credits (90 contact hours/30:1 ratio).

WLD 133 — Gas Tungsten Arc Welding Groove Lab (3)

Teaches the method of operation and application of the gas tungsten arc welding process for welding groove welds in both ferrous and non-ferrous plate in all positions.

Components: Laboratory

Laboratory: 3 credits (90 contact hours/30:1 ratio).

Prerequisites: WLD 130 or Consent of Instructor.

WLD 140 — Gas Metal Arc Welding (2)

Identification, inspection, and maintenance of GMAW machines; identification, selection, and storage of GMAW electrodes; principles of GMAW; and the effects of variables on the GMAW process. Theory and applications of related processes such as FCAW and SAW and metallurgy are also included.

Components: Lecture

Lecture: 2 credits (30 contact hours).

WLD 141 — Gas Metal Arc Welding Fillet Lab (3)

Teaches the practical application and manipulative skills of Gas Metal Arc Welding and the proper safety situations needed in this process. Both ferrous and non-ferrous metals will be covered, as well as various joint designs on plate in all positions. Co-requisite: WLD 140 or Consent of Instructor.

Components: Laboratory

Laboratory: 3 credits (90 contact hours/30:1 ratio).

WLD 143 — Gas Metal Arc Welding Groove Lab (3)

Teaches the method of operation and application of the gas metal arc

welding process for welding groove welds in both ferrous and non-ferrous plate in all positions using both short circuiting and spray transfer where appropriate.

Components: Laboratory

Prerequisites: WLD 140 or Consent of Instructor. Laboratory: 3 credits (90 contact hours/30:1 ratio).

WLD 145 — Gas Metal Arc Welding Aluminum Lab (1)

Teaches welding aluminum using the GMAW process. Fillets and groove welds are made in all positions in both plate and pipe. Short Circuiting and Spray transfers are used where appropriate.

Components: Laboratory

Laboratory: 1 credit (30 contact hours/30:1 ratio)

Prerequisites: WLD 140 or Consent of Instructor.

WLD 147 — Flux Cored Arc Welding Lab (1)

Acquaints the student with the method of operation and application of the flux cored welding system.

Components: Laboratory

Laboratory: 1 credit (30 contact hours/30:1 ratio).

Prerequisites: WLD 140 or Consent of Instructor.

WLD 151 — Basic Welding A (2)

Introduction to welding, cutting processes, and related equipment. Basic setup, operation, and related safety are applied.

Components: Laboratory, Lecture

Lecture: 1 credit (15 contact hours).

Laboratory: 1 credit (30 contact hours/30:1 ratio).

WLD 152 — Basic Welding B (5)

An introduction to common cutting and welding processes used in industry. Theory, setup, operation, and related safety are applied.

Components: Laboratory, Lecture

Lecture: 2 credits (30 contact hours);

Laboratory: 3 credits (90 contact hours/30:1 ratio).

WLD 161 — Submerged Arc Welding Lab (1)

Designed to provide the student with a working knowledge of SAW set-up, maintenance, and consumable identification. Includes practice in basic SAW principles and techniques related to the field of study.

Components: Laboratory

Laboratory: 1 credit (30 contact hours/30:1 ratio). Prerequisites: WLD 140 or Consent of Instructor.

WLD 170 — Blueprint Reading for Welding (2)

Provides a study of occupationally specific prints for welders. Advanced study of multi-view drawings, assembly drawings, datum dimensions, numerical control drawings, sheet metal prints, castings and forgings, instrumentation and control charts and diagrams, working drawings, geometric dimensioning and tolerancing and use of reference materials and books are included. Occupational specifics including welding drawings, symbols, joint types, grooves, pipe welding symbols, testing symbols and specification interpretations are stressed.

Components: Lecture

Lecture: 2 credits (30 contact hours). Co-requisite: WLD 171 or Consent of Instructor.

WLD 171 — Blueprint Reading for Welding Lab (3)

Provides students with practice fabricating from a blueprint. Students will read and fabricate from detail prints, control distortion during fabrication, and follow the proper sequence in welding a fabricated part. Students will use welding symbols and study weld sizes and strengths.

Lab: 3 credits (90 contact hours/30:1 ratio). Co-requisite: WLD 170 or Consent of Instructor.

Components: Laboratory

WLD 181 — Advanced Welding Systems Lab (1)

Provides the student a working knowledge and hands on experience using advanced arc welding machines (STT surface tension transfer and pulsed GMA welding) on various joints and metals.

Components: Laboratory

Laboratory: 1 credit (30 contact hours/30:1 ratio). Prerequisites: WLD 140 and 141 and 143 or Consent of Instructor.

WLD 191 — Plasma Arc Welding Systems Lab (1)

Teaches the necessary manipulative techniques for plasma arc welding. Plasma arc cutting may be included.

Components: Laboratory

Laboratory: 1 credit (30 contact hours/30:1 ratio).

WLD 198 — Special Topics in Welding (1-6)

Various Welding Technology topics, issues and trends will be addressed. Topics may vary from semester to semester at the discretion of the instructor; course may be repeated with different topics to a maximum of six credit hours.

Components: Lecture

Lecture: Varies.

Laboratory: Varies.

Prerequisites: Consent of instructor.

WLD 220 — Welding Certification (2)

Provides the student with a working knowledge of certification encountered in welding. The student will start with developing a WPS, qualify the WPS, and qualify personnel. Documents used in welding certification are developed and used. Co-requisite: WLD 221 or Consent of Instructor.

Components: Lecture

Lecture: 2 credits (30 contact hours).

WLD 221 — Welding Certification Lab (3)

Hours: 3

Course ID: 004590

Provides the student with an opportunity to test to certification standards on all types of welding. Lab: 3 credits (90 contact hours/30:1 ratio).

Components: Laboratory

Prerequisites: WLD 220 or Consent of Instructor.

WLD 225 — Shielded Metal Arc Welding Open Groove Lab(3)

Designed to build upon SMAW Plate Lab I & II. Offers the student the opportunity to advance skills in the practical aspects of vee-butt plate welding using SMAW. Lab: 3 credits (90 contact hours/30:1 ratio).

Components: Laboratory

Prerequisites: WLD 120 and 121 or Consent of Instructor.

WLD 227 — Shielded Metal Arc Welding Pipe Lab A (3)

Teaches the required manipulative skills to arc weld pipe using mild steel electrodes in the 2G and 5G positions including proper pipe preparations, electrodes, safety precautions, and welding sequences. Fillet welds on pipe joints are also included in 2F, 2FR, 4F, and 5F positions. Lab: 3 credits (90 contact hours/30:1 ratio).

Components: Laboratory

Prerequisites: WLD 225 or Consent of Instructor.

WLD 229 — Shielded Metal Arc Welding Pipe Lab B (3)

Teaches the required manipulative skills to arc weld pipe using mild steel electrodes in the 6G position including proper pipe preparations, electrodes, safety precautions, and welding sequences. Lab: 3 credits (90 contact hours/30:1 ratio).

Components: Laboratory

Prerequisites: WLD 225 or Consent of Instructor.

WLD 230 — Welding Quality Control Lab (1)
Provides the student with a working knowledge of quality controls encountered in welding.
Components: Laboratory
Laboratory: 1 credit (30 contact hours/30:1 ratio).
Prerequisites: Consent of Instructor.

WLD 235 — Gas Tungsten Arc Welding Pipe Lab A (3)
Teaches the method of operation and application of the gas tungsten arc welding system for welding of both ferrous and non-ferrous pipe in 2G and 5G positions. Lab: 3 credits (90 contact hours/30:1 ratio).
Components: Laboratory
Prerequisites: WLD 133 or Consent of Instructor.

WLD 237 — Gas Tungsten Arc Welding Pipe Lab B (3)
Teaches the method of operation and application of the gas tungsten arc welding process for welding of both ferrous and non-ferrous pipe in 6G position. Lab: 3 credits (90 contact hours/30:1 ratio).
Components: Laboratory
Prerequisites: Prerequisites: WLD 133 or Consent of Instructor.

WLD 240 — Materials Technology (2)
Provides the student with a working knowledge of materials used in welding. This class includes materials identification and classification. Metallurgy is included with a detailed analysis of physical, mechanical, and chemical properties. Introduces the student to the application of metallurgy to welding including preheat, interpass temperature, and post-weld heat treatment and their effects on welding and welding's effect on them.
Components: Lecture
Lecture: 2 credits (30 contact hours)

WLD 245 — Gas Metal Arc Welding Pipe Lab A (3)
Acquaints the student with the operation and application of the Gas Metal Arc System for welding pipe in 2G and 5G positions.
Components: Laboratory
Laboratory: 3 credits (90 contact hours/30:1 ratio). Co-requisite: WLD 143 or Consent of Instructor.

WLD 247 — Gas Metal Arc Welding Pipe Lab B (3)
Acquaints the student with the operation and application of the Gas Metal Arc System for welding groove welds in pipe in 6G position. Lab: 3 credits (90 contact hours/30:1 ratio).
Components: Laboratory
Prerequisites: WLD 143 or Consent of Instructor.

WLD 251 — Welding Automation Lab (1)
Provides the student a working knowledge and hands-on experience using automatic welding equipment such as robotic welding systems, bug-o systems, and automated GTA welding systems. Lab: 1 credit (30 contact hours/30:1 ratio).
Components: Laboratory

WLD 253 — Pipe Fitting and Template Development Lab (1)
Provides experiences in pipe template development and job knowledge and experience with the techniques and tools used to field layout, cut, and fit the various pipe joints that are used in pipe trades. Lab: 1 credit (30 contact hours/30:1 ratio).
Components: Laboratory

WLD 298 — Welding Practicum (1-6)
Provides on-the-job work experience related to the student's educational objectives. Students participating in the Practicum do not receive compensation.
Components: Practicum
Laboratory: 1-6 credits (30-180 contact hours/30:1 ratio).
Prerequisites: Consent of Instructor.

WLD 299 — Cooperative Education Program (1-6)
Provides supervised on-the-job work experience related to the student's educational objectives.
Components: Co-Op
Prerequisites: Consent of Instructor.

WOMEN'S STUDIES

WS 200 Introduction to Women's Studies in the Social Sciences (3)
An introduction to women's studies from a social science perspective, using a cross-cultural and interdisciplinary approach. Introduces students to social science explanations for sex-typed behavior, to social perceptions of women and men, and to the roles of women in social and cultural life. V

WS 201 Introduction to Women's Studies in the Arts and Humanities (3)
An introduction to women's history in work, family and creative production. This course presents a set of organizing ideas for examining issues and problems of women in contemporary society, and gives students opportunities for writing, interviewing and discussing issues of gender, class and race from an interdisciplinary point of view. It introduces students to the basic methods of humanistic inquiry in general and humanistic women's studies in particular. VI