

**CIS 117 DATABASE MANAGEMENT SOFTWARE APPLICATIONS 3 cr. hrs.**

This course provides students with hands-on experience using database management software. Students will develop skills common to most database management software by developing a wide variety of databases. Emphasis is on planning, developing, and editing functions associated with database management.

**CIS 130. INTRODUCTION TO INFORMATION SYSTEMS 3 cr. hrs.**

This course is an introduction to computers that reviews computer hardware and software concepts such as equipment, operations, communications, programming and their past, present and future impact on society. Topics include computer hardware, various types of computer software, communication technologies and program development using the computer to write simple programs. Upon completion, students should be able to describe and use the major components of selected computer software and hardware.

**CIS 146. MICROCOMPUTER APPLICATIONS 3 cr. hrs.**

This course is an introduction to the most common software applications of microcomputers and includes “hands-on” use of microcomputers and some of the major commercial software. These software packages should include typical features of office suites, such as word processing, spreadsheets, database systems, and other features found in current software packages. Upon completion, students will understand common applications and be able to utilize selected features in these packages.

**CIS 147. ADVANCED MICRO APPLICATIONS 3 cr. hrs.**

This course is a continuation of CIS 146 in which students utilize the advanced features of topics covered in CIS 146. Advanced functions and integration of word processing, spreadsheets, database, and presentation packages among other topics are generally incorporated into the course and are to be applied to situations found in society and business. Upon completion, the student should be able to apply the advanced features of selected software appropriately to typical problems found in society and business. This course will help prepare students for the MOS certification. Prerequisite: CIS 146.

**CIS 151. GRAPHICS FOR THE WORLD WIDE WEB**

**3 cr. hrs.**

This course will provide an overview to the theory, tools, and techniques necessary for creating high-quality graphics using design software tools.

**CIS 160. MULTIMEDIA FOR THE WORLD WIDE WEB**

**3 cr. hrs.**

This course covers contemporary, interactive multimedia technology systems, focusing on types, applications, and theories of operation. In addition to the theoretical understanding of the multimedia technologies, students will learn how to digitize and manipulate images, voice, and video materials, including authoring a web page utilizing multimedia.

**CIS 161. INTRODUCTION TO NETWORKING**

**COMMUNICATIONS 3 cr. hrs.**

This course is designed to introduce students to basic concepts of computer networks. Emphasis is placed on terminology and technology involved in implementing selected networked systems. The course covers various network models, topologies, communications protocols, transmission media, networking hardware and software, and network troubleshooting. Students gain hands-on experience in basic networking. This course further helps prepare students for certification.

**CIS 196. COMMERCIAL SOFTWARE APPLICATIONS**

**3 cr. hrs.**

This is a "hands-on" introduction to software packages, languages, and utility programs currently in use, with the course being able to repeat for credit for each different topic being covered. Emphasis is placed on the purpose capabilities and utilization of each package, language or program. Upon completion, students will be able to use the features selected for the application covered.

**CIS 207. INTRODUCTION TO WEB DEVELOPMENT**

**3 cr. hrs.**

At the conclusion of this course, students will be able to use specified markup languages to develop basic Web pages.

**CIS 209. ADVANCED WEB DEVELOPMENT 3 cr. hrs.**

This is an advanced Web design course emphasizing the use of scripting languages to develop interactive Web sites. Upon

completion students will be able to create data driven Web sites. This course helps prepare students for the Certified Internet Webmaster (CIW) Foundations certification. Prerequisite: CIS 207.

**CIS 212. VISUAL BASIC PROGRAMMING**

**3 cr. hrs., Lec. 2, Lab. 2**

This course emphasizes BASIC programming using a graphical user interface. The course will emphasize graphical user interfaces with additional topics on such topics as advanced file handling techniques, simulation, and other selected areas. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests.

**CIS 213. ADVANCED VISUAL BASIC PROGRAMMING**

**3 cr. hrs.**

This course is a continuation of CIS 212, Visual Basic Programming. Prerequisite: CIS 212.

**CIS 251. C++ PROGRAMMING: 3 cr. hrs.**

This course is an introduction to the C programming language. Included in this course are topics in an algorithmic approach to problem solving, structured programming techniques and constructs, using functions and macros, simple data structures, and using files for input and output. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests.

**CIS 268. SOFTWARE SUPPORT 3 cr. hrs.**

This course provides students with hands-on practical experience in installing computer software, operating systems, and trouble-shooting. The class will help to prepare participants for the A+ Certification sponsored by CompTIA. This course is a suitable substitute for CIS 239, Networking Software. If used this is a CORE course for the AAT and AAS CIS programs.

**CIS 269. HARDWARE SUPPORT 3 cr. hrs.**

This course provides students with hands-on practical experience in installation and troubleshooting computer hardware. The class will help to prepare participants for the A+ Certification sponsored by CompTIA.

**CIS 270. CISCO I 3 cr. hrs.**

This course is the first part of a four part curriculum leading to CISCO Certified Network Associate (CCNA) certification. This course concentrates on the physical part of networking including basic electronics, computer basics, network basics, addressing, number conversions, cabling, and planning. After completing this course the student will be able to: identify the functions of each layer of the OSI reference model; describe data link and network addresses; define and describe the function of the MAC address; explain the five conversion steps of data encapsulation; describe the different classes of IP addresses and subnetting; identify the functions of the TCP/IP network-layer protocols.

**CIS 271. CISCO II 3 cr. hrs.**

This course is the second part of a four part curriculum leading to CISCO Certified Network Associate (CCNA) certification. This course concentrates on router configuration. After completing this course the student will be able to: prepare the initial configuration of a router and enable IP; control router passwords and identification; configure IP addresses; add the RIP and IGRP routing protocols to a configuration. Prerequisite: CIS 270.

**CIS 272. CISCO III 3 cr. hrs.**

This course is the third part of a four part curriculum leading to CISCO Certified Network Associate (CCNA) certification. This course concentrates on LAN design, routing, switching, and network administration. After completing this course the student will be able to: describe LAN segmentation using bridges, routers, and switches; distinguish between cutthrough and store and forward LAN switching; describe the operation of the Spanning Tree Protocol and its benefits; describe the benefits of virtual LANs. Prerequisite: CIS 271.

**CIS 273. CISCO IV 3 cr. hrs.**

This course is the fourth part of a four part curriculum leading to CISCO Certified Network Associate (CCNA) certification. This course concentrates on WANs and WAN design. After completing this course the student will be able to: differentiate between LAPB, Frame Relay, ISDN, HDLC, PPP, and DDR; list commands to configure Frame Relay LMIs, maps, and subinterfaces; identify PPP operations to encapsulate WAN data on CISCO routers; identify ISDN protocols, function groups,

reference points, and channels; describe CISCO's implementation of ISDN BRI. Prerequisite: CIS 272.

**CIS 226 ORACLE DATABASE ADMINISTRATION I 3cr. hrs**

This course is designed to give students a firm foundation in basic administration of a database (i.e. Oracle Database 11g or higher). In this class, students learn how to install and maintain an Oracle Database. Students gain a conceptual understanding of the Oracle database architecture and how its components work and interact with one another. Students learn how to create an operational database and properly manage the various structures in an effective and efficient manner including performance monitoring, database security, user management, and backup/recovery techniques. The lesson topics are reinforced with structured hands-on practices. This course is the second of two courses required to acquire certification as Oracle Database Administrator – oracle Certified Associate (OCA) – maps to Oracle Exam 1Z0052.

**CIS 228 ORACLE DATABASE ADMINISTRATION II 3cr. hrs**

In this course, the concepts and architecture that support backup and recovery, along with the steps of how to carry it out in various ways and situations, are covered in detail. This includes how to define and test our own backup and recovery scenarios. Students learn to manage memory effectively and to perform some performance evaluation and tuning tasks, including using some of the advisors. All types of flashback technologies, scheduling jobs inside and outside of the database, and controlling system resource usage are covered. Topics are reinforced with hands-on practices. This course counts towards the hand-on course requirement for the Oracle Database 11g Administrator Certification. This course is the second of two courses required to acquire certification as Oracle Database Administrator – oracle Certified Associate (OCA) – Maps to Oracle Exam 1Z0053.

**CIS 245 Cyberterrorism 3cr. hrs**

This course focuses on ways that computers can be used to assist in terrorist activity. Students will learn to assess the potential of various kinds of cyber attacks and will learn to devise plans and contingencies against future attacks. Topics include current U.S. policy regarding infrastructure protection and various avenues of addressing threats.

**CIS 246 ETHICAL HACKING 3 cr. hrs**

This course emphasizes scanning, testing, and securing computer systems. The lab-intensive environment provides opportunities to understand how perimeter defenses work and how hackers are able to compromise information systems. With awareness of hacking strategies, students learn to counteract those attempts in an ethical manner.

**CIS 214 Security Analyst (PEN Testing) 3cr. hrs**

This course introduces students to the concept of security analysis, or penetration testing, of information systems. Students will evaluate the security of a computer system or network, assessing security risks from the position of a potential attacker. Emphasis is on identifying security flaws and providing technical solutions.

**CIS 267 ENTERPRISE VIRTUALIZATION 3 cr. hrs**

This course is designed to provide students with the knowledge and skills required to implement enterprise visualization. Students will gain hands-on experience installing, configuring, and managing enterprise virtualization technologies.

**EET 100. INTRODUCTION TO ENGINEERING TECHNOLOGIES 3 cr. hrs.**

This course is designed to introduce the student to the basic concepts, terminology, and procedures associated with applied analytical skills needed to succeed in higher level courses. To include: engineering notation, use of scientific calculators, triangulation methods, and the basic laws of electricity.

**EET 103. DC FUNDAMENTALS 3 cr. hrs., Lec. 2, Lab. 2**

This course provides an in depth study of direct current (DC) electronic theory. Topics include atomic theory, magnetism, properties of conductors and insulators, and characteristics of series, parallel, and series-parallel circuits. Inductors and capacitors are introduced and their effects on DC circuits are examined. Students are prepared to analyze complex DC circuits, solve for unknown circuit variables and to use basic electronic test equipment. This course also provides hands on laboratory exercises to analyze, construct, test, and troubleshoot DC circuits. Emphasis is placed on the use of scientific calculator and the operation of common test equipment used to analyze and troubleshoot DC and to prove the theories taught during classroom instruction. Prerequisite: EET 100.

**EET 104. AC FUNDAMENTALS 3 cr. hrs., Lec. 2, Lab. 2**

This course provides an in depth study of alternating current (AC) electronic theory. Students are prepared to analyze complex AC circuit configurations with resistors, capacitors, and inductors in series and parallel combinations. Topics include electrical safety and lockout procedures, specific AC theory functions such as RLC, impedance, phase relationships, and power factor. Students will be able to define terms, identify waveforms, solve complex mathematical problems, construct circuits, explain circuit characteristics, identify components, and make accurate circuit measurements using appropriate measurement instruments. They should also be able to perform fundamental tasks associated with troubleshooting, repairing, and maintaining industrial AC systems. . Prerequisite: EET 103.

**EET 105. SOLID STATE FUNDAMENTALS**

**3 cr. hrs., Lec. 1, Lab. 4**

This course provides instruction in basic solid state theory beginning with atomic structure and includes devices such as diodes, bipolar transistors, field effect transistors, amplifiers, thyristors, operational amplifiers, oscillator and power supply circuits. Emphasis is placed on the practical application of solid-state devices, proper biasing and amplifier circuit analysis and the use of test equipment to diagnose, troubleshoot and repair typical solid-state device circuits. This course also provides the opportunity for students to apply the solid-state principles and theories learned in class in the laboratory setting. Emphasis is placed on the practical application of solidstate devices, proper biasing, and amplifier circuit analysis and the use of test equipment to diagnose, troubleshoot and repair typical solid-state device circuits. Prerequisite: EET 104.

**EET 109 ELECTRICAL BLUEPRINT READING I**

**3 cr hrs.**

This course will enable the student to obtain a working knowledge of the elements of blueprint reading, the ability to interpret electrical, mechanical, and architectural drawing, and the ability to visualize the entire building structure in relationship to the electrical system.

**EET 119. CIRCUIT FABRICATION I 1 cr. hr., Lab. 2**

This course provides instruction in fabrication of functional circuits and is an introduction to device construction and fabrication. Utilizing discrete components, students will fabricate functional circuits. Topics include soldering, cable construction, coaxial cable connection and termination, component mounting, cases and chassis, printed circuit board design, layout, fabrication and repair, as well as soldering techniques, care of tools, wire splicing, wire wrapping, connector maintenance, and related shop safety. Upon completion of this course, students should be able to perform basic circuit and project construction. Prerequisite: EET 203

**EET 203. ELECTRONIC CIRCUITS I 3 cr. hrs., Lec. 1, Lab. 4**

This course covers the commonly utilized circuits found in all areas of electronics. These include the various rectifier, filter, voltage regulating circuits, and linear solid-state amplifier circuits. The entire course emphasizes the typical circuits,

their principles of operation, and troubleshooting defective circuits. This course has an embedded lab with laboratory exercises designed to develop the skills listed in the Industry competencies. Prerequisite: EET 105.

**EET 206. DIGITAL FUNDAMENTALS**

**3 cr. hrs., Lec. 1, Lab. 4**

This course provides instruction on basic logic gates, flip-flops, registers, counters, microprocessor/computer fundamentals, analog to digital conversion, and digital analog conversion. Emphasis is placed on number systems, Boolean algebra, combination logic circuits, sequential logic circuits, and typical microprocessor data manipulations and storage. This course also has an embedded lab with exercises designed to develop skills required by industry. Upon completion, students should be able to analyze digital circuits, draw timing diagrams, determine output of combinational and sequential logic circuits, draw timing diagrams, determine output of combinational and sequential logic circuits and diagnose and troubleshoot electronic components as well as demonstrate knowledge of microprocessor and computer circuits. Prerequisite: EET 105.

**EET 207. INTRODUCTION TO ROBOTICS 3 cr. hrs.**

This course provides an introduction to robots for students preparing to work in environments using robots. Topics covered include the service and repair of robots plus applications and uses of robots. Upon completion of this course and EET 212 a student will be able to program and operate a simple robot.

**EET 213. PRESS CONTROL AND INSTRUMENTATION**

**3 cr. hrs.**

This course provides introduction to the field of process control and instrumentation. Topics covered include sensors, transducers, signal conditioning, control devices, an introduction to ladder logic, and PLC's. Upon completion of this course and EET 238 a student will be able to analyze a simple industrial process control system. Prerequisite: EET 105

**EET 224. ELEMENTS OF INDUSTRIAL CONTROL**

**3 cr. hrs.**

This course covers the basics of automatic control of industrial systems using the programmable logic controller. Topics

include relay logic, ladder logic, and the development of ladder logic using software. Upon completion of this course and EET 229 a student will be able to configure and program a PLC. Prerequisite: EET 203 or advisor approval.

**EET 229. ELEMENTS OF INDUSTRIAL CONTROL LAB**

**2 cr. hrs., Lab. 4**

This course covers the basics of automatic control of industrial systems using the programmable logic controller. Topics include relay logic, ladder logic, motor controls, and the development of ladder logic using software. Upon completion of this course and the associated theory course a student should be able to configure and program a PLC. Prerequisite: EET 203 or advisor approval. Corequisite: EET 224.

**EET 238. PRESS CONTROL AND INSTRUMENTATION**

**LAB 2 cr. hrs., Lab. 4**

Companion to EET 213. Emphasizes hands-on experience for the student using transducers and sensors as well as control of processes. Upon completion of this course and EET 213 a student will be able to analyze a simple industrial process control system. Corequisite: EET 213.

**EET 276 ELEMENTS OF INDUSTRIAL CONTROL II**

**3 cr. hrs.**

This course includes the advanced principals of PLC's including hardware, programming, variable speed drives, and troubleshooting. Emphasis is placed on developing advanced working programs, and troubleshooting hardware and software communication problems. Upon completion, students should be able to demonstrate their ability in developing programs and troubleshooting the system. Prerequisite: EET 224 and 229

**EET 277 ELEMENTS OF INDUSTRIAL CONTROL II LAB**

**2 cr. hrs., Lab. 4**

This course includes the advanced principals of PLC's including hardware, programming, variable speed drives, and troubleshooting. Emphasis is placed on developing advanced working programs, and troubleshooting hardware and software communication problems. Upon completion, students should be able to demonstrate their ability in developing programs and troubleshooting the system. Corequisite EET 276 (Prerequisite: EET 224 and 229)

**EET 281 SPECIAL TOPICS IN ELECTRONIC ENGINEERING TECHNOLOGY 3 cr; hrs Lec. 3 Lab 3**

This course provides specialized instruction in various areas related to electronic engineering technology. Emphasis is placed on meeting students' needs.

**EET 286 MICROCOMPUTERS REPAIR**

**3 cr. hrs., Lec. 2, Lab 2.**

An introduction to microcomputer repair. Topics include microcomputer architecture, clocks, microprocessors, BUS lines, memory maps, input/output boards, monitors, disk drives, and power supplies. Upon completion of this course a student will be able to locate and replace a defective microcomputer circuit board or device. Instructor approval

**EET 281 SPECIAL TOPICS IN ELECTRONIC ENGINEERING TECHNOLOGY 3 cr. hrs Lab 3**

This course provides specialized instruction in various areas related to electronic engineering technology. Emphasis is placed on meeting students' needs.