

## Course Descriptions

This two-course sequence allows the student to work part-time on a job closely related to his or her academic major while attending classes on a full-time basis. Emphasis is placed on a student's work experience as it integrates academic knowledge with practical applications in the business environment. The grade is based on a term paper, job-site visits by the instructor, the employer's evaluation of the student, and the development and assessment by the student of a learning contract.

**BUS 297 BUSINESS INTERNSHIP II (3T) 3 credits**  
**PREREQUISITE: Minimum 6 semester hours completed. Minimum GPA 2.0 (C)**

This two-course sequence allows the student to work part-time on a job closely related to his or her academic major while attending classes on a full-time basis. Emphasis is placed on a student's work experience as it integrates academic knowledge with practical applications in the business environment. The grade is based on a term paper, job-site visits by the instructor, the employer's evaluation of the student, and the development and assessment by the student of a learning contract.

## CHEMISTRY (CHM)

**CHM 104 INTRODUCTION TO INORGANIC CHEMISTRY (3T, 2E) 4 credits**  
**PREREQUISITE: MTH 098 Elementary Algebra or equivalent math placement score.**

This is a survey course of general chemistry for students who do not intend to major in science or engineering and may not be substituted for CHM 111. Lecture will emphasize the facts, principles, and theories of general chemistry including math operations, matter and energy, atomic structure, symbols and formulas, nomenclature, the periodic table, bonding concepts, equations, reactions, stoichiometry, gas laws, phases of matter, solutions, pH, and equilibrium reactions. Laboratory is required.

**CHM 105 INTRODUCTION TO ORGANIC CHEMISTRY (3T, 2E) 4 credits**  
**PREREQUISITE: CHM 104 (Course taught in Spring Semester of even numbered years only)**

This is a survey course of organic chemistry and biochemistry for students who do not intend to major in science or engineering. Topics will include basic nomenclature, classification of organic compounds, typical organic reactions, reactions involved in life processes, function of biomolecules, and the handling and disposal of organic compounds. Laboratory is required.

**CHM 111 COLLEGE CHEMISTRY I (3T, 2E) 4 credits**  
**PREREQUISITE: MTH 112, Precalculus Algebra or CHM 099**

This is the first course in a two-semester sequence designed for the science or engineering major who is expected to have a strong background in mathematics. Topics in this course include measurements, nomenclature, stoichiometry, atomic structure, equations and reac-

tions, basic concepts of thermochemistry, chemical and physical properties, bonding, molecular structure, gas laws, kinetic-molecular theory, condensed matter, solutions, colloids, and some descriptive chemistry topics. Laboratory is required.

**CHM 112 COLLEGE CHEMISTRY II (3T, 2E) 4 credits**  
**PREREQUISITE: CHM 111**

This is the second course in a two-semester sequence designed primarily for the science and engineering student who is expected to have a strong background in mathematics. Topics in this course include chemical kinetics, chemical equilibria, acids and bases, ionic equilibria of weak electrolytes, solubility product principle, chemical thermodynamics, electrochemistry, oxidation-reduction, nuclear chemistry, an introduction to organic chemistry and biochemistry, atmospheric chemistry, and selected topics in descriptive chemistry including the metals, nonmetals, semi-metals, coordination compounds, transition compounds, and post-transition compounds. Laboratory is required.

**CHM 220 QUANTITATIVE ANALYSIS (3T, 2E) 4 credits**  
**PREREQUISITE: CHM 112 (Course Taught infrequently, only as enrollment demands)**

This course covers the theories, principles, and practices in standard gravimetric, volumetric, calorimetric, and electro-metric analysis with special emphasis on equilibrium in acid-base and oxidation-reduction reactions and stoichiometry of chemical equations. Laboratory is required and will include classical techniques in chemical analysis, modern methods of chemical separation, and basic instrumental techniques.

**CHM 221 ORGANIC CHEMISTRY I (3T, 2E) 4 credits**  
**PREREQUISITE: CHM 112**

This is the first course in a two-semester sequence. Topics in this course include nomenclature, structure, physical and chemical properties, synthesis, and typical reactions for aliphatic, alicyclic, and aromatic compounds with special emphasis on reaction mechanisms, spectroscopy, and stereochemistry. Laboratory is required and will include the synthesis and confirmation of representative organic compounds with emphasis on basic techniques.

**CHM 222 ORGANIC CHEMISTRY II (3T, 2E) 4 credits**  
**PREREQUISITE: CHM 221**

This is the second course in a two-semester sequence. Topics in this course include nomenclature, structure, physical and chemical properties, synthesis, and typical reactions for aliphatic, alicyclic, aromatic, and biological compounds, polymers and their derivatives, with special emphasis on reaction mechanisms, spectroscopy, and stereochemistry. Laboratory is required and will include the synthesis and confirmation of representative organic compounds with emphasis on basic techniques.

**CHM 250 DIRECTED STUDIES IN CHEMISTRY (1-3T) 1-3 credit**  
**PREREQUISITE: Permission of the instructor.**

This course is designed for independent study in specific areas of chemistry chosen in consultation with a faculty

member and carried out under faculty supervision. This course may be repeated three (3) times for credit.

experiences using developmental appropriate techniques, materials and realistic expectations. Course includes observations of young children in a variety of childcare environments.

**CHILD DEVELOPMENT (CHD)**

**CHD 100 INTRODUCTION OF EARLY CARE AND EDUCATION OF CHILDREN (3T) 3 credits**

This course introduces students to the child education and care profession. It is designed to increase understanding of the basic concepts of child development and the developmental characteristics of children from birth through age 8/9 years. This course is the foundation for planning appropriate activities for children and establishing appropriate expectations of young children. This class also offers an opportunity to study the developmental domains (social, emotional, cognitive/language and physical). Course includes observations of the young child in early childhood settings.

**CHD 201 CHILD GROWTH AND DEVELOPMENT PRINCIPLES (3T) 3 credits**

This course is a systematic study of child growth and development from conception through early childhood. Emphasis is on principles underlying physical, mental, emotional, and social development, and on methods of child study, and practical implications. Upon completion, students will be able to use knowledge of how young children differ in development and approaches to learning to provide opportunities that support the physical, social, emotional, language, cognitive, and aesthetic development. PSY 211 may be used as a suitable substitute for this course for the AAS degree program.

**CHD 202 CHILDREN'S CREATIVE EXPERIENCES (3T) 3 credits**

This course focuses on fostering creativity in preschool children and developing a creative attitude in teachers. Topics include selecting and developing creative experiences in language arts, music, art, science, math and movement with observation and participation with young children required. On completion, students will be able to select and implement creative and age-appropriate experiences for young children.

**CHD 203 CHILDREN'S LITERATURE AND LANGUAGE DEVELOPMENT (3T) 3 credits**

This course surveys appropriate literature and language arts activities designed to enhance young children's speaking, listening, pre-reading, and writing skills. Emphasis is placed on developmental appropriateness as related to language. Upon completion, students should be able to create, evaluate and demonstrate activities which support a language-rich environment for young children.

**\*CHD 204 METHODS AND MATERIALS FOR TEACHING CHILDREN (3T) 3 credits**

This course introduces basic methods and materials used in teaching young children. Emphasis is placed on student's compiling a professional resource file of activities used for teaching math, language arts, and science and social studies concepts. Upon completion, students will be able to demonstrate basic methods of creating learning

**CHD 205 PROGRAM PLANNING FOR EDUCATING YOUNG CHILDREN (3T) 3 credits**

This course provides students with knowledge to develop programs for early child development. Specific content includes a review of child development concepts and program contents. Upon completion, students will be able to develop and evaluate effective programs for the education of young children.

**CHD 206 CHILDREN'S HEALTH AND SAFETY (3T) 3 credits**

This course introduces basic health, nutrition and safety management practices for young children. Emphasis is placed on how to set up and maintain safe, healthy environments for young children including specific procedures for infants and toddlers and procedures regarding childhood illnesses and communicable diseases.

**CHD 208 ADMINISTRATION OF CHILD DEVELOPMENT PROGRAMS (3T) 3 credits**

This course includes appropriate administrative policies and procedures relevant to preschool programs. Topics include local, state and federal regulations; budget planning; record keeping; personnel policies and parent involvement. Upon completion, students should be able to identify elements of a sound business plan, develop familiarity with basic record-keeping techniques, and identify elements of a developmentally appropriate program.

**CHD 209 INFANT AND TODDLER EDUCATION PROGRAMS (3T) 3 credits**

This course focuses on child development from infancy to thirty-five months of age with emphasis on planning programs using developmentally appropriate material. Emphasis is placed on positive ways to support an infant or toddler's social, emotional, physical and intellectual development. Upon completion, students should be able to plan an infant-toddler program and environment, that is appropriate and supportive of the families and the children.

**CHD 210 EDUCATING EXCEPTIONAL CHILDREN (3T) 3 credits**

This course explores the many different types of exceptionalities found in young children. Topics include speech, language, hearing and visual impairments; gifted and talented children; mental retardation; emotional, behavioral, and neurological handicaps. Upon completion, students should be able to identify appropriate strategies for working with children.

**CHD 214 FAMILIES AND COMMUNITIES IN EARLY CHILDCARE AND EDUCATION PROGRAMS (3T) 3 credits**

This course provides students with information about working with diverse families and communities. Students will be introduced to family and community settings, the importance of relationships with children, and the pressing needs of today's society. Students will study and practice techniques for developing these important relationships and effective communication skills.

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**CHD 215 SUPERVISED PRACTICAL EXPERIENCES IN CHILD DEVELOPMENT (3E) 3 credits**  
**PREREQUISITE: Permission of instructor**  
 This course provides a minimum of 90 hours of hands-on, supervised experience in an approved program for young children. Students will develop a portfolio documenting experiences gained during this course.

**CHD 220 PARENTING SKILLS (3T) 3 credits**  
 This course introduces childcare providers to important issues in parenting education, beginning with prenatal concerns and continuing through childhood years. Emphasis is placed on using effective parenting and childrearing practices including appropriate guidance methods. Students learn to apply parenting skills for diverse families. Upon completion, students will be more effective in working with families and young children.

**\*Courses required in the Child Development Associate (CDA) Certification for employees currently employed within the industries.**

**COMPUTER INFORMATION SYSTEMS (CIS)**

**CIS 111 WORD PROCESSING SOFTWARE APPLICATIONS (3T) 3 credits**  
 This course provides students with hands-on experience using word processing software. Students will develop skills common to most word processing software by developing a wide variety of documents. Emphasis is on planning, developing, and editing functions associated with word processing. (Formerly CIS 197U)

**CIS 113 SPREADSHEET SOFTWARE APPLICATIONS (3T) 3 credits**  
 This course provides students with hands-on experience using spreadsheet software. Students will develop skills common to most spreadsheet software by developing a wide variety of spreadsheets. Emphasis is on planning, developing, and editing functions associated with spreadsheets. (Formerly CIS 197X)

**CIS 115 PRESENTATION GRAPHICS SOFTWARE APPLICATIONS (3T) 3 credits**  
 This course provides students with hands-on experience using presentation graphics software. Students will develop skills common to most presentation graphics software by developing a wide variety of presentations. Emphasis is on planning, developing, and editing functions associated with presentations. (Formerly CIS 197Z)

**CIS 117 DATABASE MANAGEMENT SOFTWARE APPLICATIONS (3T) 3 credits**  
 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. (Formerly CIS 197W)

**CIS 130 INTRODUCTION TO INFORMATION SYSTEMS (3T) 3 credits**  
 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 computers to execute software packages and/or 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 (3T) 3 credits**  
 This course is an introduction to the most common microcomputer software applications. These software packages should include typical features of applications, such as word processing, spreadsheets, database management, and presentation software. Upon completion, students will be able to utilize selected features of these packages. This course will help prepare students for the MOS and IC3 certification.

**CIS 147 ADVANCED MICROCOMPUTER APPLICATIONS (3T) 3 credits**  
**PREREQUISITE: CIS 146**  
 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.

**CIS 148 POST ADVANCED MICRO APPLICATIONS (3T) 3 credits**  
**PREREQUISITE: CIS 147**  
 This course builds on concepts associated with various microcomputer applications with emphasis on advanced features commonly found in software applications. Advanced features of word processing, spreadsheets, database, and presentation packages are introduced. Features such as macros, Visual Basic Applications, and online features are included in the content of the course. Upon completion, the student will be able to apply the advanced features of selected software to the workplace. This course will help prepare students for the MOS certification.

**CIS 150 INTRODUCTION TO COMPUTER LOGIC AND PROGRAMMING (3T) 3 credits**  
 This course includes logic, design and problem solving techniques used by programmers and analysts in addressing and solving common programming and computing problems. The most commonly used techniques of flowcharts, structure charts, and pseudo code will be covered and students will be expected to apply the techniques to designated situations and problems.

(Formerly CIS 110)

**CIS 151 GRAPHICS FOR THE WORLD WIDE WEB (3T) 3 credits**  
This course will provide an overview to the theory, tools and techniques necessary for creating high-quality graphics using design software tools.

**CIS 158 FUNDAMENTALS OF WIRELESS LANs (3T) 3 credits**  
This course provides an introduction to the design, planning, implementation, operation, and troubleshooting of wireless networks. The goal of Fundamentals of Wireless LANs is to offer students the most current knowledge of complex networking concepts as well as real-world experience that the future demands.

**CIS 160 MULTIMEDIA FOR THE WORLD WIDE WEB (3T) 3 credits**  
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 (3T) 3 credits**  
**PREREQUISITE: Previous CIS Course**  
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 171 FUNDAMENTALS OF UNIX/LINUX I (2T, 2E) 3 credits**  
**PREREQUISITE: CIS 150**  
This course presents fundamental applications in Unix/Linux. Included in this course are skills development for OS installation and setup, recompile techniques, system configuration settings, file/folder structures and types, run levels, basic network applications and scripting. Additionally, the course presents security features from an administrative and user consideration.

**CIS 172 FUNDAMENTALS OF UNIX/LINUX II (2T, 2E) 3 credits**  
**PREREQUISITE: CIS 171**  
This course is a continuation of CIS 171 and includes advanced features of Unix/Linux. Included in this course are web applications, integrated network configurations, file transfer, server administration, system controls, iptables/firewall to secure Unix/Linux systems, and strategic user-group applications specific to administration network control.

**CIS 196U COMPUTER LITERACY FOR SENIOR ADULTS (3T) 3 credits**

This course introduces such basic computer literacy topics as hardware, software, operating system, Internet research, microcomputer security, e-mail, and file and folder management. Although it is open to all students, the focus is on the learning style and interests of the senior population.

**CIS 196V ADVANCED COMPUTER LITERACY FOR SENIOR ADULTS (3T) 3 credits**  
This course introduces such topics as word processing, spreadsheet, presentation software, graphics, desktop management, and database. Although it is open to all students, the focus is on the learning style and interests of the senior population

**CIS 197V MICROSOFT WORD EXPERT (3T) 3 credits**  
This course is designed to prepare students to take the Microsoft Office Specialist certification exam in Microsoft Word (expert level). Topics emphasized are Microsoft Office Specialist exam objectives and test-taking skills. The student will demonstrate mastery of expert level word processing skills through hands-on, performance-based lab exercises. Practice test software will provide immediate feedback on areas where additional practice is needed. Calhoun is an authorized Microsoft testing center.

**CIS 197Y MICROSOFT EXCEL EXPERT (3T) 3 credits**  
This course is designed to prepare students to take the Microsoft Office Specialist certification exam in Microsoft Excel (expert level). Topics emphasized are Microsoft Office Specialist exam objectives and test-taking skills. The students will demonstrate mastery of expert level spreadsheet skills through hands-on, performance-based lab exercises. Practice test software will provide immediate feedback on areas where additional practice is needed. Calhoun is an authorized Microsoft testing center.

**CIS 197A MICROSOFT OUTLOOK (3T) 3 credits**  
This course is designed to prepare students to take the Microsoft Office Specialist certification exam in Microsoft Outlook. Topics emphasized are Microsoft Office Specialist exam objectives and test-taking skills. The students will demonstrate mastery of Outlook's integrated mail and scheduling skills through hands-on, performance-based lab exercise. Practice test software will provide immediate feedback on areas where additional practice is needed. Calhoun is an authorized Microsoft testing center.

**CIS 197B MICROSOFT PROJECT (3T) 3 credits**  
This course teaches the concepts of and the technical skills of Microsoft Project. Students will gain hands-on experience in managing production and other types of schedules. Topics include resource allocation, budgeting, adjusting time and scope, tracking cost, reporting, and balancing resource workloads.

**CIS 197C DREAMWEAVER (3T) 3 credits**  
This course introduces Macromedia Dreamweaver, a web authoring tool. Topics include developing and publishing a basic web page, working with text and graph-

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ics, building links and tables, collecting data, using layers, adding multimedia elements, and managing library items and style sheets.

interactivity to HTML pages. Upon completion, the student will demonstrate knowledge of the topics through projects and appropriate tests. (Formerly CIS 244)

**CIS 197D FLASH (3T) 3 credits**  
This course introduces Macromedia Flash, a software tool used in designing web pages. Topics include creating animation, drawing, creating special effects, preparing and publishing movies, importing graphics, adding sounds, and using basic ActionScript. Students will build and publish web pages.

**CIS 212 VISUAL BASIC PROGRAMMING (3T) 3 credits**  
**PREREQUISITE: CIS 110**  
This course emphasizes Basic programming using a graphical user interface. The course will introduce 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 programming projects and appropriate tests.

**CIS 197E FIREWORKS (3T) 3 credits**  
This course introduces Macromedia Fireworks, a software tool that is tightly integrated with Flash and Dreamweaver. Using Fireworks, students will learn to produce web graphics and to build complex interactivity into web pages. Topics include designing graphics, working with vector objects and bitmaps, using text, managing images by using layers, exporting graphics, and designing interactive web graphics.

**CIS 213 ADVANCED VISUAL BASIC PROGRAMMING (3T) 3 credits**  
**PREREQUISITE: CIS 212**  
This course is a continuation of CIS 212, Visual Basic. It is designed to enhance student skills in Visual Basic, with an emphasis on understanding techniques and procedures for developing projects using an object oriented language.

**CIS 197F FREEHAND (3T) 3 credits**  
This course introduces Macromedia Freehand, a software tool used with other Macromedia Suite products to enhance web page drawings. Topics include creating images, using drawing tools, working with colors, applying fills and strokes, and inserting and formatting text.

**CIS 222 DATABASE MANAGEMENT SYSTEMS (3T) 3 credits**  
This course will discuss database system architectures. It will teach students how to design, normalize and use a database, and link these to the Web. Students will design and build a database-enabled Web site. Upon completion, the student will be able to demonstrate knowledge of the topics through projects and appropriate tests.

**CIS 197G WEB PAGE SCRIPTING (Perl) (3T) 3 credits**  
**PREREQUISITE: Previous CIS Course**  
This course introduces Perl, a popular and widely used cross-platform programming language. Topics include fundamentals of Perl, including data types, control structures, I/O operations, regular expressions, arrays, and functions. The course also explores the use of Perl in developing CGI (Common Gateway Interface) programs. (Formerly CIS 282)

**CIS 223 THREE DIMENSIONAL COMPUTER MODELING (3T) 3 credits**  
**PREREQUISITE: Previous CIS Course**  
This course is a study in 3D computer modeling and 3D painting beginning with primitive shapes and creating compelling 3D objects for use in model libraries, games, print material, web sites, visual simulation, and architectural applications. Powerful operations for modeling and 3D painting are incorporated into an interface that is simple and intuitive to use.

**CIS 207 INTRODUCTION TO WEB DEVELOPMENT (3T) 3 credits**  
**PREREQUISITE: CIS 146**  
This course is an introduction to Web page development techniques. Topics in this course include techniques and strategies for creating good Web pages. Upon completion, the student will be able to demonstrate knowledge of the topics through Web page development projects and appropriate tests. (Formerly CIS 198)

**CIS 224 THREE DIMENSIONAL COMPUTER ANIMATION (3T) 3 credits**  
**PREREQUISITE: Previous CIS Course**  
This course is a study in 3D computer animation. Course contents include a review of 3D modeling, rendering the 3D animations, compositing and special effects for both video and film recording, storyboarding and sound design, technical testing and production estimates and scheduling.

**CIS 208 INTERMEDIATE WEB DEVELOPMENT (3T) 3 credits**  
This course introduces students to basics of navigating the World Wide Web and coding simple web pages using an authoring tool such as Front Page.(Formerly CIS 197T)

**CIS 249 MICROCOMPUTER OPERATING SYSTEMS (3T) 3 credits**  
**PREREQUISITE: Previous CIS Course**  
This course provides an introduction to microcomputer operating systems. Topics include a description of the operating system, system commands, and effective and efficient use of the microcomputer with the aid of its system programs. Upon completion, students should understand the function and role of the operating system, its operational characteristics, its configuration,

**CIS 209 ADVANCED WEB DEVELOPMENT (3T) 3 credits**  
**PREREQUISITE: CIS 207 and CIS 255**  
This course will introduce students to a scripting language. Topics include objects, arrays, methods, and functions. Students will use a scripting language to add

	how to execute programs, and efficient disk and file management. (Formerly CIS 278)		
<b>CIS 250</b>	<b>E-COMMERCE (3T)</b> This course is an introduction into e-commerce. Topics include marketing, building an e-commerce store, security, and electronic payment systems. Upon completion, students will be able to building an e-commerce presence.	<b>3 credits</b>	
<b>CIS 251</b>	<b>C++ PROGRAMMING (3T)</b> <b>PREREQUISITE: CIS 110</b> This course is an introduction to the C++ programming language. This course is intended as a first course in problem-solving and program design. Topics covered include program style, algorithm and data structuring and modularization. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests.	<b>3 credits</b>	
<b>CIS 252</b>	<b>ADVANCED C++ PROGRAMMING (3T)</b> <b>PREREQUISITE: CIS 251</b> This course is an advanced object-oriented programming course and covers advanced program development techniques and concepts in the context of an object-oriented language. Subject matter includes object-oriented analysis, encapsulation, inheritance, polymorphism (operator and function overloading), information hiding, abstract data types, reuse, dynamic memory allocation, and file manipulation. Upon completion, students should be able to develop a hierarchical class structure necessary to the implementation of an object-oriented software system.	<b>3 credits</b>	
<b>CIS 255</b>	<b>JAVA PROGRAMMING (3T)</b> <b>PREREQUISITE: CIS 110</b> This course is a first course sequence in program design and implementation in the Java programming language using hands-on programming assignments, class demonstrations, and lectures. Topics include basic features of Java program structures, Java's built-in class libraries, data types, programming control structures, and object-oriented programming concepts.	<b>3 credits</b>	
<b>CIS 256</b>	<b>ADVANCED JAVA (3T)</b> <b>PREREQUISITE: CIS 255</b> This course is a second course of a sequence using the Java programming language. Topics include: Sun's Swing GUI components, JDBC, JavaBeans, RMI, servlets, and Java media framework. Upon completion, the student will be able to demonstrate knowledge of the topics through programming projects and appropriate exams. (Formerly CIS 293)	<b>3 credits</b>	
<b>CIS 268</b>	<b>SOFTWARE SUPPORT (3T)</b> <b>PREREQUISITE: Previous CIS Course</b> 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. (Formerly CIS 266)	<b>3 credits</b>	
<b>CIS 269</b>	<b>HARDWARE SUPPORT (3T)</b> <b>PREREQUISITE: Previous CIS Course</b> 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. (Formerly CIS 267)	<b>3 credits</b>	
<b>CIS 270</b>	<b>CISCO I (3T)</b> 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.	<b>3 credits</b>	
<b>CIS 271</b>	<b>CISCO II (3T)</b> <b>Prerequisite: CIS 270</b> 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.	<b>3 credits</b>	
<b>CIS 272</b>	<b>CISCO III (3T)</b> <b>PREREQUISITE: CIS 271</b> 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 cut-through and store and forward LAN switching; describe the operation of the Spanning Tree Protocol and its benefits; describe the benefits of virtual LANs.	<b>3 credits</b>	
<b>CIS 273</b>	<b>CISCO IV (3T)</b> <b>PREREQUISITE: CIS 272</b> 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 sub interfaces; 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.	<b>3 credits</b>	

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- CIS 279 NETWORK INFRASTRUCTURE DESIGN (3T) 3 credits**  
**PREREQUISITE: Previous CIS Course**  
This course provides a study of network infrastructure design. Topics included in this course are strategies for planning, implementing, and maintaining server availability and security, client addressing schemes, name resolution, routing, remote access, and network security. Students gain experience by designing plans for implementing common network infrastructure and protocols.
- CIS 280 NETWORK SECURITY (3T) 3 credits**  
This course provides a study of threats to network security and methods of securing a computer network from such threats. Topics included in this course are security risks, intrusion detection, methods of securing authentication, network access, remote access, Web access, and wired and wireless network communications. Upon completion, students will be able to identify security risks and describe appropriate counter measures.
- CIS 289 WIRELESS NETWORKING (3T) 3 credits**  
The purpose of this course is to allow students to explore current issues related to wireless technology. Students will be able to develop and maintain wireless networks using advancements in current technology.
- CIS 296 SPECIAL TOPICS (6E) 3 credits**  
This course allows study of currently relevant computer science topics, with the course being able to be repeated for credit for each different topic covered. Course content will be determined by the instructor and will vary according to the topic being covered. Upon completion, the student will be able to demonstrate specified skills.
- CIS 297 CO-OP FOR CIS II (3T) 3 credits**  
This course is part of a series wherein the student works in a degree/program related job. Emphasis is placed on student's work experience as it integrates academic knowledge with practical application through exposure to computer practices in informational technologies environment. The grade is based on the employer's evaluation of each student's productivity, content of a descriptive report submitted by the student, and student development and assessment of a learning contract
- CIS 299 DIRECTED STUDIES IN COMPUTER SCIENCE (3T) 3 credits**  
**PREREQUISITE: Permission of instructor**  
This course allows independent study under the direction of an instructor. Topics to be included in the course material will be approved by the instructor prior to or at the beginning of the class. Upon completion, the student will be able to demonstrate knowledge of the topics as specified by the instructor.

## CLINICAL LABORATORY TECHNOLOGY (CLT)

- CLT 100 PHLEBOTOMY (1T, 3C) 2 credits**  
This course covers the basic techniques used in the collection of blood specimens. Presentation includes equipment and additives, basic anatomy, and techniques for safe and effective venipuncture. Upon completion, students should be able to correctly perform venipuncture. **(See specific enrollment requirements listed under CLT – AAS Degree Program of Study)**
- CLT 106 CLINICAL CALCULATIONS AND STATISTICS (2T) 2 credits**  
**PREREQUISITE: Permission of course instructor**  
This course incorporates practical application of mathematical concepts in the clinical laboratory. Instruction includes the metric system, solution preparation, dilutions, and other laboratory calculations. Upon completion, students should be able to make determinations of precision and accuracy using statistical data for various laboratory departments.
- CLT 111 URINALYSIS & BODY FLUIDS (2T, 2E) 3 credits**  
**PREREQUISITE: Required admission to the CLT program**  
This course focuses on the theory and techniques in the examination of urine and other body fluids. The student is introduced to the physical and chemical properties of these fluids as well as microscopic examination of sediment and the identification of cells and crystals. Upon completion, students should be able to perform basic urinalysis and correlate laboratory results to renal disorders and other disease states.
- CLT 121 CLT HEMATOLOGY (3T, 4E) 5 credits**  
**PREREQUISITE: Required admission to the CLT program**  
In this course, the theory and techniques of hematology are covered. The student is presented with blood components, normal and abnormal cell morphology, hemostasis, and selected automated methods. Upon completion, students should be able to perform various procedures including preparation and examination of hematologic slides and relate results to specific disorders.
- CLT 131 LABORATORY TECHNIQUES (2T, 2E) 3 credits**  
**PREREQUISITE: Required admission to the CLT program**  
This course covers the basic principles and techniques used in the clinical laboratory. Emphasis is placed on terminology, basic microscopy, safety, and computations. Upon completion, students should be able to perform various basic laboratory analyses and utilize basic theories of laboratory principles.
- CLT 141 CLT MICROBIOLOGY I (3T, 4E) 5 credits**  
**PREREQUISITE: Required admission to the CLT program**  
The student is presented with the theories, techniques, and methods used in basic bacteriology. Focus is on bacterial isolation, identification, and susceptibility testing. Upon completion, students should be able to select media, isolate and identify microorganisms, and discuss modern concepts of epidemiology. CORE
- CLT 142 CLT MICROBIOLOGY II (3T, 4E) 5 credits**  
**PREREQUISITE: Required admission to the CLT program**  
The student is presented with the theories, techniques, and

methods used in basic parasitology, mycology, and virology. Emphasis is placed on special bacteria, identification, life cycles, culture growth, and pathological states of infection and infestation. Upon completion, students should be able to identify certain parasites, demonstrate various staining and culture procedures, and discuss the correlation of certain microorganisms to pathological conditions. CORE

**CLT 151 CLT CLINICAL CHEMISTRY (3T, 4E) 5 credits**  
**PREREQUISITE: Required admission to the CLT program**

This course emphasizes theories and techniques in basic and advanced clinical chemistry. Coverage includes various methods of performing biochemical analyses on clinical specimens. Upon completion, students should be able to apply the principles of clinical chemistry, evaluate quality control, and associate abnormal test results to clinical significance. CORE

**CLT 161 CLT INTEGRATED LABORATORY SIMULATION (4E) 2 credits**  
**PREREQUISITE: Required admission to the CLT program**

This course provides an opportunity for the student to perform clinical laboratory procedures in all phases of laboratory testing as a review of previous laboratory courses. Emphasis is placed on case studies, organization of tasks, timing, accuracy, and simulation of routine operations in a clinical laboratory. Upon completion, students should be able to organize tasks and perform various basic laboratory analyses with accuracy and precision. CORE

**CLT 181 CLT IMMUNOLOGY (1T, 2E) 2 credits**  
**PREREQUISITE: Required admission to the CLT program**

Theory and techniques in immunology are presented to the student. Emphasis is placed on the basic principles of the immune system, serologic testing, the production of specific antibodies and their use in the identification of infectious organisms. Upon completion, students should be able to relate basic principles of immunology, describe techniques for analytical methods utilizing immunological concepts, and correlate results of analyses to certain disease states.

**CLT 191 CLT IMMUNOHEMATOLOGY (3T, 4E) 5 credits**  
**PREREQUISITE: Required admission to the CLT program**

Theory and techniques in immunohematology are presented to the student. In this course coverage includes antigen and antibody reactions including blood typing, antibody detection and identification, and compatibility testing. Upon completion, students should be able to apply theories and principles of immunohematology to procedures for transfusion and donor services and correlate blood banking practices to certain disease states and disorders. CORE

**CLT 294 CLINICAL LABORATORY PRACTICUM I (9C) 3 credits**  
**PREREQUISITE: Required admission to the CLT program**

This supervised practicum is within the clinical setting and provides laboratory practice in hematology and urinalysis. Emphasis is placed on clinical skills and performance in areas such as specimen preparation and examination, instrumentation, reporting of results, management of data and quality control. Upon completion, students should be able to process specimens, perform analyses utilizing various methods including instrumentation, report results, manage data and quality control using information systems.

**CLT 295 CLINICAL LABORATORY PRACTICUM II (9C) 3 credits**

**PREREQUISITE: Required admission to the CLT program**

This supervised practicum is within the clinical setting and provides laboratory practice in microbiology. Emphasis is placed on clinical skills and performance in areas such as recovery, isolation, culturing and identification of microorganisms. Upon completion, students should be able to isolate, culture, analyze microorganisms utilizing various methods, report results, manage data and quality control using information systems.

**CLT 296 CLINICAL LABORATORY PRACTICUM III (9C) 3 credits**

**PREREQUISITE: Required admission to the CLT program**

This supervised practicum is within the clinical setting and provides laboratory practice in serology and immunohematology. Emphasis is placed on clinical skills and performance in areas such as the detection and identification of antibodies, the typing of blood, and compatibility testing of blood and blood components. Upon completion, students should be able to perform the screening for and identification of antibodies, compatibility testing, record and manage data and quality control using information systems. CORE

**CLT 297 CLINICAL LABORATORY PRACTICUM IV (9C) 3 credits**

**PREREQUISITE: Required admission to the CLT program**

This supervised practicum is within the clinical setting and provides laboratory practice in clinical chemistry. Emphasis is placed on clinical skills and performance in areas such as computerized instrumentation and the ability to recognize technical problems. Upon completion, students should be able to perform biochemical analyses by various methods, including testing utilizing computer-oriented instrumentation, report test results, manage patient data and quality control statistics using information systems. CORE

**COSMETOLOGY INSTRUCTOR TRAINING (CIT)**

**CIT 211 TEACHING & CURRICULUM DEVELOPMENT (3T) 3 credits**

**PREREQUISITE: Licensed managing cosmetologist; 1 year experience**

This course focuses on the principles of teaching, teaching maturity, personality conduct, and the development of a cosmetology curriculum. Emphasis is placed on teacher roles, teaching styles, teacher challenges, aspects of curriculum development, and designing individual courses. Upon completion, the student should be able to describe the role of teacher, identify means of motivating students, develop a course outline, and develop lesson plans.

**CIT 212 TEACHER MENTORSHIP (9M) 3 credits**

**COREQUISITE: CIT 211 or Permission of instructor**  
**PREREQUISITE: Licensed managing cosmetologist; 1 year experience**

This course is designed to provide the practice through working with a cosmetology instructor in a mentoring relationship. Emphasis is placed on communication, student assessment, and assisting students in the lab. Upon com-

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pletion, the student should be able to communicate with students, develop a course of study, and apply appropriate teaching methods.

**CIT 213 LESSON PLAN DEVELOPMENT (3T) 3 credits**  
**COREQUISITE:** CIT 211, 212, or Permission of instructor  
**PREREQUISITE:** Licensed managing cosmetologist; 1 year experience

The course introduces students to methods for developing lesson plans. Emphasis is placed on writing lesson plans and on the four-step teaching plan. Upon completion, students should be able to write daily lesson plans and demonstrate the four-step teaching method.

**CIT 221 LESSON PLAN IMPLEMENTATION (9M) 3 credits**  
**PREREQUISITE:** Licensed managing cosmetologist; 1 year experience

This course is designed to provide practice in preparing and using lesson plans. Emphasis is placed on organizing, writing and presenting lesson plans using the four-step teaching method. Upon completion, students should be able to prepare and present a lesson using the four-step teaching method.

**CIT 222 INSTRUCTIONAL MATERIALS AND METHODS (3T) 3 credits**  
**COREQUISITE:** CIT 223 or Permission of instructor  
**PREREQUISITE:** Licensed managing cosmetologist; 1 year experience

This course focuses on visual and audio aids and materials. Emphasis is placed on the use and characteristics of instructional aids. Upon completion, the student should be able to prepare teaching aids and determine their most effective use.

**CIT 223 INSTRUCTIONAL MATERIALS AND METHODS APPLICATIONS (9M) 3 credits**  
**COREQUISITE:** CIT 222 or Permission of instructor  
**PREREQUISITE:** Licensed managing cosmetologist; 1 year experience

This course is designed to provide practice in preparing and using visual and audio aids and materials. Emphasis is placed on the preparation and use of different categories of instructional aids. Upon completion, the student should be able to prepare and effectively present different types of aids for use with a four-step lesson plan.

## COSMETOLOGY (COS)

**COS 111 INTRODUCTION TO COSMETOLOGY (3T) 3 credits**  
**COREQUISITE:** COS 112 or Permission of instructor

This course is designed to provide students with an overview of the history and development of cosmetology and standards of professional behavior. Students receive basic information regarding principles and practices of infection control, diseases, and disorders. Additionally, students receive introductory information regarding hair design. The information presented in this course is enhanced by hands-on application performed in a controlled lab environment. Upon completion, students should

be able to apply safety rules and regulations and write procedures for skills identified in this course.

**COS 112 INTRODUCTION TO COSMETOLOGY LAB (9M) 3 credits**  
**COREQUISITE:** COS 111 or Permission of instructor

In this course, students are provided the practical experience for sanitation, shampooing, hair shaping, and hairstyling. Emphasis is placed on disinfection, shampooing, hair shaping, and hairstyling for various types of hair for men and women. This course offers opportunities for students to put into practice concepts learned in the theory component from COS 111.

**COS 113 THEORY OF CHEMICAL SERVICES (1T, 2E, 3M) 3 credits**  
**COREQUISITE:** COS 114 or COS 115, or Permission of instructor

During this course students learn concepts of theory of chemical services related to chemical hair texturing. Specific topics include basics of chemistry and electricity, properties of the hair and scalp, and chemical texture services. Safety considerations are emphasized throughout this course. This course is foundational for other courses providing more detailed instruction on these topics.

**COS 114 CHEMICAL SERVICES LAB (9M) 3 credits**  
**COREQUISITE:** COS 113 or Permission of instructor

During this course students perform various chemical texturing activities. Emphasis is placed on cosmetologist and client safety, chemical use and handling, hair and scalp analysis, and client consulting.

**COS 115 HAIR COLORING THEORY (3T) 3 credits**  
**COREQUISITE:** COS 116

In this course, students learn the techniques of hair coloring and hair lightening. Emphasis is placed on color application, laws, levels and classifications of color and problem solving. Upon completion, the student will be able to identify all classifications of haircoloring and the effects on the hair.

**COS 116 HAIR COLORING LAB (9M) 3 credits**  
**COREQUISITE:** COS 115

In this course, students apply hair coloring and hair lightening techniques. Topics include consultation, hair analysis, skin test and procedures and applications of all classifications of hair coloring and lightening. Upon completion, the student will be able to perform procedures for hair coloring and hair lightening.

**COS 117 BASIC SPA TECHNIQUES (3T) 3 credits**  
**COREQUISITE:** COS 118

This course is the study of cosmetic products, massage, skin care, and hair removal, as well as identifying the structure and function of various systems of the body. Topics include massage skin analysis, skin structure, disease and disorder, light therapy, facials, facial cosmetics, anatomy, hair removal, and nail care. Upon completion, the student will be able to state procedures for analysis, light therapy, facials, hair removal, and identify the structures, functions, disorders of the skin, and nail care.

- COS 118 BASIC SPA TECHNIQUES LAB (9M) 3 credits**  
**COREQUISITE: COS 117**  
This course provides practical applications related to the care of the skin and related structure. Emphasis is placed on facial treatments, product application, skin analysis, massage techniques, facial make-up, hair removal, and nail care. Upon completion, the student should be able to prepare clients, assemble sanitized materials, follow procedures for product application, recognize skin disorders, demonstrate facial massage movement, cosmetic application, and hair removal using safety and sanitary precautions, and nail care.
- COS 119 BUSINESS OF COSMETOLOGY (3) 3 credits**  
This course is designed to develop job-seeking and entry-level management skills for the beauty industry. Topics include job seeking, leader and entrepreneurship development, business principles, business laws, insurance, marketing, and technology issues in the workplace. Upon completion, the student should be able to list job-seeking and management skills and the technology that is available for use in the salon.
- COS 123 COSMETOLOGY SALON PRACTICES (9M) 3 credits**  
This course is designed to allow students to practice all phases of cosmetology in a salon setting. Emphasis is placed on professionalism, receptionist duties, hairstyling, hair shaping, chemical, and nail and skin services for clients. Upon completion, the student should be able to demonstrate professionalism and the procedures of cosmetology in a salon setting.
- COS 125 CAREER AND PERSONAL DEVELOPMENT (3T) 3 credits**  
This course provides the study and practice of personal development and career building. Emphasis is placed on building and retaining clientele, communication skills, customer service, continuing education, and goal setting. Upon completion, the student should be able to communicate effectively and practice methods for building and retaining clientele.
- COS 133 SALON MANAGEMENT TECHNOLOGY (1T, 6M) 3 credits**  
This course is designed to develop entry-level management skills for the beauty industry. Topics include job-seeking, leader and entrepreneurship development, business principles, business laws, insurance, marketing, and technology issues in the workplace. Upon completion, the student should be able to list job-seeking and management skills and the technology that is available for use in the salon.
- COS 134 ADVANCED ESTHETICS (1T, 6M) 3 credits**  
This course includes an advanced study of anatomy and physiology relating to skin care, cosmetic chemistry, histology of the skin, and massage and facial treatments. Upon completion, the student should be able to discuss the functions of the skin, effects of chemicals on skin, different types of massage and benefits, and key elements of the basic facial treatment.
- COS 135 ADVANCED ESTHETICS APPLICATIONS (9M) 3 credits**  
This course provides advanced practical applications related to skin care. Principal topics include massage techniques, various facial treatments, proper product applica-

tion through skin analysis, and introduction to ingredients and treatments used by the esthetician. Upon completion, the student should be able to perform various massage techniques, prescribe proper type of facial treatment and product, and demonstrate facials using any of the eight functions of the facial machine.

- COS 141 APPLIED CHEMISTRY FOR COSMETOLOGY (9M) 3 credits**  
This course focuses on chemistry relevant to professional hair and skin care products, hair and its related structures, permanent waving, chemical hair relaxing, and hair coloring. Topics include knowledge of basic chemistry, pH scale measurements, water, shampooing and cosmetic chemistry, physical and chemical changes in hair structure. Upon completion, the student should be able to define chemistry, types of matter, and describe chemical and cosmetic reactions as related to the hair and skin structure.
- COS 142 APPLIED CHEMISTRY FOR COSMETOLOGY LAB (9M) 3 credits**  
This course provides practical applications of the knowledge and skin learned in reference to chemical reactions, as well as the chemical application to the hair and skin. Emphasis is placed on knowledge of basic chemistry, pH scale, cosmetic chemistry, and physical and chemical changes in the hair and skin structure. Upon completion, the student should be able to determine the proper chemical product for each prescribed service.
- COS 143 SPECIALTY HAIR PREPARATION TECHNIQUES (1T, 6M) 3 credits**  
This course focuses on the theory and practice of hair designing. Topics include creating styles using basic and advanced techniques of back combing, up sweeps and braiding. Upon completion, the student should be able to demonstrate the techniques and procedures for hair designing.
- COS 144 HAIR SHAPING AND DESIGN (1T, 6M) 3 credits**  
In this course, students learn the art and techniques of hair shaping. Topics include hair sectioning, correct use of hair shaping implements, and elevations used to create design lines. Upon completion, the student should be able to demonstrate the techniques and procedures for creating hair designs.
- COS 145 HAIR SHAPING LAB (9M) 3 credits**  
This covers the study of the art and techniques of hair shaping. Topics include hair sectioning, correct use of hair shaping implements, and elevations used to create design lines. Upon completion, the student should be able to demonstrate the techniques and procedures for creating hair designs using safety and sanitary precautions.
- COS 146 HAIR ADDITIONS (2T, 2E, 3M) 4 credits**  
This course focuses on the practice of adding artificial hair. Topics include hair extensions, weaving, and braiding. Upon completion, the student should be able to demonstrate the techniques and procedures for attaching human hair and synthetic hair.
- COS 150 MANICURING (1T, 6M) 3 credits**  
This course focuses on the theory and practice of nail care.

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Topics include sanitation, nail structure, nail disorders and diseases, manicuring, pedicuring, nail wrapping, sculptured nails and acrylic overlays.

**COS 151 NAIL CARE (3T) 3 credits**  
**COREQUISITE: COS 152 or Permission of instructor**

This course focuses on all aspects of nail care. Topics include salon conduct, professional ethics, sanitation, nail structure, manicuring, pedicuring, nail disorders, and anatomy and physiology of the arm and hand. Upon completion, the student should be able to demonstrate professional conduct, recognize nail disorders and diseases, and identify the procedures for sanitation and nail care services.

**COS 152 NAIL CARE APPLICATIONS (9M) 3 credits**  
**COREQUISITE: COS 151 or Permission of instructor**

This course provides practice in all aspects of nail care. Topics include salon conduct, professional ethics, bacteriology, sanitation and safety, manicuring and pedicuring. Upon completion, the student should be able to perform nail care procedures.

**COS 153 NAIL ART (3T) 3 credits**  
**COREQUISITE: COS 154 or Permission of instructor**

This course focuses on advanced nail techniques. Topics include acrylic, gel, fiberglass nails, and nail art. Upon completion, the student should be able to identify the different types of sculptured nails and recognize the different techniques of nail art.

**COS 154 NAIL ART APPLICATIONS (9M) 3 credits**  
**COREQUISITE: COS 153 or Permission of instructor**

This course provides practice in advanced nail techniques. Topics include acrylic, gel, fiberglass nails, and nail art. Upon completion, the student should be able to perform the procedures for nail sculpturing and nail art.

**COS 158 EMPLOYABILITY SKILLS (3T) 3 credits**

This course provides the study of marketable skills to prepare the student to enter the world of work. Emphasis is placed on resumes, interviews, client and business relations, personality, computer literacy and attitude. Upon completion, the student should be prepared to obtain employment in the field for which they have been trained.

*The following labs are designed for students in need of additional lab hours or services in preparation for licensure exams. The labs will be directed by instructors according to the student's area of specialty and may be taken during the course of the program as needed.*

**COS 161 SPECIAL TOPICS IN COSMETOLOGY (1T) 1 credit**  
**PREREQUISITE: Permission of instructor**

This course is designed to allow students to explore issues relevant to the profession of cosmetology. Upon completion, students should have developed new skills in areas of specialization for the cosmetology profession.

**COS 162 SPECIAL TOPICS IN COSMETOLOGY (9M) 3 credits**  
**PREREQUISITE: Permission of instructor**

This course is designed to allow students to explore issues relevant to the profession of cosmetology. Upon comple-

tion, students should have developed new skills in areas of specialization for the cosmetology profession.

**COS 163 FACIAL TREATMENTS (1T, 6M) 3 credits**

This course includes all phases of facial treatments in the study of skin care. Topics include treatments for oily, dry, and special skin applications. Upon completion, students will be able to apply facial treatments.

**COS 164 FACIAL MACHINE (9M) 3 credits**

This is a course designed to provide practical experience using the vapor and facial machine with hydraulic chair. Topics include the uses of electricity and safety practices, machine and apparatus, use of the magnifying lamp, and light therapy. Upon completion, the student will be able to demonstrate an understanding of electrical safety and skills in the use of facial machines.

**COS 165 RELATED SUBJECTS ESTHETICIANS (9M) 3 credits**

This course includes subjects related to the methods for removing unwanted hair. This course includes such topics as electrolysis information and definitions, safety methods of permanent hair removal, the practice of removal of superfluous hair, and the use of depilatories. Upon completion of this course, students will be able to apply depilatories and practice all safety precautions.

**COS 167 STATE BOARD REVIEW (1T, 6M) 3 credits**

Students are provided a complete review of all procedures and practical skills pertaining to their training in the program. Upon completion, the student should be able to demonstrate the practical skills necessary to complete successfully the required State Board of Cosmetology examination and entry-level employment.

**COS 169 SKIN FUNCTIONS (9M) 3 credits**

This course introduces skin functions and disorders. Topics include practical application for skin disorder treatments, dermabrasion, and skin refining. Upon completion of this course, the student will be able to demonstrate procedures for acne, facials and masks for deeper layers and wrinkles.

**COS 168 BACTERIOLOGY AND SANITATION (3T) 3 credits**

In this skin care course, emphasis is placed on the decontamination, infection control and safety practiced in the esthetics facility. Topics covered include demonstration of sanitation, sterilization methods and bacterial prevention. Upon completion, the student will be able to properly sanitize facial implements and identify non-reusable items.

**COS 181 SPECIAL TOPICS (3T) 3 credits**

This course is designed to allow students to explore issues relevant to the profession of cosmetology. Upon completion, students should have developed new skills in areas of specialization for the cosmetology profession.

**COS 182 SPECIAL TOPICS (9M) 3 credits**

This course is designed to allow students to explore issues relevant to the profession of cosmetology. Upon completion, students should have developed new skills in areas of specialization for the cosmetology profession.

**COS 190 INTERNSHIP IN COSMETOLOGY (9M) 3 credits**  
**PREREQUISITE: Permission of instructor**  
 This course is designed to provide exposure to cosmetology practices in non-employment situations. Emphasis is on dependability, attitude, professional judgment, and practical cosmetology skills. Upon completion, the student should have gained skills necessary for entry-level employment.

**COS 191 CO-OP (9M) 3 credits**  
**PREREQUISITE: Permission of instructor**  
 This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

**COS 291 CO-OP (9M) 3 credits**  
 This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

**CRIMINAL JUSTICE (CRJ)**

**CRJ 100 INTRODUCTION TO CRIMINAL JUSTICE (3T) 3 credits**  
 This course surveys the entire criminal justice process from law enforcement to the administration of justice through corrections. It discusses the history and philosophy of the system and introduces various career opportunities.

**CRJ 110 INTRODUCTION TO LAW ENFORCEMENT (3T) 3 credits**  
 This course examines the history and philosophy of law enforcement, as well as the organization and jurisdiction of local, state, and federal agencies. It includes the duties and functions of law enforcement officers.

**CRJ 130 INTRODUCTION TO LAW AND JUDICIAL PROCESS (3T) 3 credits**  
 This course provides an introduction to the basic elements of substantive and procedural law and the stages in the judicial process. It includes an overview of state and federal court structure.

**CRJ 140 CRIMINAL LAW AND PROCEDURE (3T) 3 credits**  
 This course examines both substantive and procedural law. The legal elements of various crimes are discussed, with emphasis placed on the contents of the Alabama Code. Areas of criminal procedure essential to the criminal justice profession are covered.

**CRJ 146 CRIMINAL EVIDENCE (3T) 3 credits**  
 This course considers the origins of the law of evidence and current rules of evidence. Types of evidence, their definitions and uses are covered, as well as the functions of the court regarding evidence.

**CRJ 150 INTRODUCTION TO CORRECTIONS (3T) 3 credits**  
 This course provides an introduction to the philosophical and historical foundations of corrections in America. Incarceration and some of its alternatives are considered.

**CRJ 157 COMMUNITY BASED CORRECTIONS (3T) 3 credits**  
 This course examines various forms of community corrections and alternative sentences. Probation, parole, halfway houses, work release, community service, electronic monitoring and camps are among the programs considered.

**CRJ 160 INTRODUCTION TO SECURITY (3T) 3 credits**  
 This course surveys the operation, organization and problems in providing safety and security to business enterprises. Private, retail and industrial security are covered.

**CRJ 166 PRIVATE AND RETAIL SECURITY (3T) 3 credits**  
 This course surveys the legal foundations, regulations, training, and other issues in private security. Typical offenses, laws, and law enforcement strategies common in the field are covered. Methods of loss prevention are examined.

**CRJ 168 INTERNATIONAL SECURITY (3T) 3 credits**  
 This course provides an understanding of the security implications of international programs, commercial sales, the interrelationship of the information disclosure and technology transfer, the International Traffic in Arms Regulations, and the Export Administration Regulations.

**CRJ 169 SECURITY MANAGEMENT (3T) 3 credits**  
 This course introduces the student to sound security management theories, principles, budgeting, communications, and education.

**CRJ 170 INTRODUCTION TO PHYSICAL SECURITY (3T) 3 credits**  
 This course provides an overview of the protection of people, property, and facilities through the use of security forces, systems, and procedures.

**CRJ 171 SECURITY RISK MANAGEMENT (3T) 3 credits**  
 This course deals with the identification of assets, threats, and vulnerabilities, and the development of countermeasures.

**CRJ 208 INTRODUCTION TO CRIMINOLOGY (3T) 3 credits**  
 This course delves into the nature and extent of crime in the United States as well as criminal delinquent behavior and theories of causation. The study includes criminal personalities, principles of prevention, control and treatment.

**CRJ 209 JUVENILE DELINQUENCY (3T) 3 credits**  
 This course examines the causes of delinquency. It also

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reviews programs of prevention and control of juvenile delinquency as well as the role of the courts.

### CRJ 216 POLICE ORGANIZATION AND ADMINISTRATION (3T) 3 credits

This course examines the principles of organization and administration of law enforcement agencies. Theories of management, budgeting, and various personnel issues are covered.

### CRJ 220 CRIMINAL INVESTIGATION (3T) 3 credits

This course explores the theory and scope of criminal investigation. The duties and responsibilities of the investigator are included. The techniques and strategies used in investigation are emphasized.

### CRJ 230 CRIMINALISTICS (3T) 3 credits

This course surveys the different techniques of scientific investigation. Emphasis is given to ballistics, photography, fingerprints, DNA, trace evidence, body fluids, casts and the like.

### CRJ 256 CORRECTIONAL REHABILITATION (3T) 3 credits

This course surveys the different methods used in the rehabilitation of public offenders. Topics include individual and group counseling, education, recreation, religion, drug treatment, and vocational programs.

### CRJ 280 INTERNSHIP IN CRIMINAL JUSTICE (1-3T) 1-3 credits

**PREREQUISITE:** Permission of instructor

This course involves practical experience with a criminal justice agency under faculty supervision. Permission of the instructor is required. This course may be repeated with the approval of the department head.

### CRJ 290 SELECTED TOPICS - SEMINAR IN CRIMINAL JUSTICE (1-3T) 1-3 credits

This course involves reading, research, writing, and discussion of selected subjects relating to criminal justice. Various contemporary problems in criminal justice are analyzed. This course may be repeated with approval of the department head.

## DENTAL ASSISTING (DNT)

### DNT 100 INTRODUCTION TO DENTAL ASSISTING (2T) 2 credits

**PREREQUISITE:** Admission to the Dental Assisting Program and Permission of instructor

**COREQUISITE:** DNT 101, DNT 102, DNT 103, DNT 104, PSY 200

This course is designed to provide an introduction to dentistry and the history of dentistry, dental equipment, dental auxiliaries, psychology application to dentistry, personal and certification requirements, legal and ethical considerations, and work ethics and communication skills. Emphasis is placed on the Alabama Dental Practice Act and OSHA Standards. Upon completion, students should be able to discuss basic aspects of dentistry.

### DNT 101 PRE-CLINICAL PROCEDURES I (2T, 3S) 3 credits

**PREREQUISITE:** Admission to the Dental Assisting Program and Permission of instructor  
**COREQUISITES:** DNT 100, DNT 102, DNT 103, DNT 104, PSY 200

This course is designed to introduce chairside assisting including concepts of four-handed dentistry, sterilization techniques, dental instruments, anesthesia, and operative dentistry. Emphasis will be placed on preparation of the student for clinical dental assisting. Upon completion, the student should be able to perform dental assisting skills in a clinical setting.

### DNT 102 DENTAL MATERIALS (2T, 3S) 3 credits

**PREREQUISITE:** Admission to the Dental Assisting Program and Permission of instructor  
**COREQUISITES:** DNT 100, DNT 101, DNT 103, DNT 104, PSY 200

This course is designed to study the characteristics, manipulation, and application of dental materials ordinarily used in the dental office. Students will be given intra and extra-oral technical tasks to perform. Upon completion, students should be able to take and pour alginate impressions, trim study models, construct custom trays and temporary crowns, prepare and place restorative material, and manipulate cements and impression materials.

### DNT 103 ANATOMY AND PHYSIOLOGY FOR DENTAL ASSISTING (3T) 3 credits

**PREREQUISITE:** Admission to Dental Assisting Program and Permission of instructor  
**COREQUISITE:** DNT 100, DNT 101, DNT 102, DNT 104, PSY 200

This course is designed to study dental anatomy and the structure of the head and neck with a basic understanding of body structure and function. Emphasis will be placed on tooth and root morphology, and embryological and histological correlations will provide a foundation essential to an understanding of dental health. Upon completion, students should be able to discuss and identify the basic structure and function of the human body specifically the head, neck, and dentition.

### DNT 104 BASIC SCIENCES FOR DENTAL ASSISTING (2T) 2 credits

**PREREQUISITE:** Admission to Dental Assisting Program and Permission of instructor  
**COREQUISITE:** DNT 100, DNT 101, DNT 102, DNT 103, PSY 200

This course is designed to study basic microbiology, pathology, pharmacology, and medical emergencies. Emphasis is placed on the correlation of these sciences to the practice of dentistry. Upon completion, students should be able to apply basic science to the dental field.

### DNT 111 CLINICAL PRACTICE I (1T, 12C) 5 credits

**PREREQUISITE:** Admission to Dental Assisting Program or Permission of instructor  
**COREQUISITE:** DNT 112, DNT 113, DNT 116, DNT 124, MTH 100 or 112 or 116, SPH 107

This course is designed to allow the student the opportunity for clinical observation and practical work experience in clinical settings under the supervision of a licensed dentist. Emphasis will be placed on the basic skills of chairside

assisting. Upon completion, students should be able to demonstrate basic skills in the area of chairside assisting.

team work, and communication skills. Emphasis will be placed on clinical procedures. Upon completion, students should be able to demonstrate proficiency in the area of chairside assisting.

**DNT 112 DENTAL RADIOLOGY (2T, 3S) 3 credits**  
**PREREQUISITE: Admission to Dental Assisting Program or Permission of instructor**

**COREQUISITE: DNT 111, DNT 113, DNT 116, DNT 124, MTH 100 or 112 or 116, SPH 107**

This course is designed to cover the essential knowledge of radiographic technique for the practice of dentistry. Students will be taught to produce diagnostically acceptable intra and extra-oral radiographs with emphasis being placed on x-ray properties, generation of x-rays, film processing, infection control, quality assurance, intraoral radiographic technique and image characteristics. Upon completion, students should be able to expose, process, and mount radiographs for diagnostic purposes under the direct supervision of a licensed dentist.

**DNT 123 DENTAL ASSISTING SEMINAR (4T) 4 credits**  
**PREREQUISITE: Admission to Dental Assisting Program and Permission of instructor**

**COREQUISITE: DNT 121 and DNT 122, ENG 101**

This course is designed to discuss and evaluate the students' clinical experiences and the resume and interview process. Emphasis will be placed on new technology in dental practices as related to dental assisting and the certification exam review. Upon completion, students should be able to successfully complete the Dental Assisting National Board Examination to become a Certified Dental Assistant.

**DNT 113 DENTAL HEALTH EDUCATION (2T) 2 credits**  
**PREREQUISITE: Admission to Dental Assisting Program and Permission of instructor**

**COREQUISITE: DNT 111, DNT 112, DNT 116, DNT 124, MTH 100 or MTH 112 or MTH 116, SPH 107**

This course is designed to introduce the student to the basic principles of nutrition, preventive dentistry, and dental health education. Emphasis will be placed on philosophy of preventive dentistry including: oral hygiene, patient motivation and management, and methods of oral health education. Upon completion, students should be able to apply the basic principles of nutrition and preventive dentistry.

**DNT 124 CLINICALLY APPLIED INFECTION CONTROL AND OSHA STANDARDS (3C) 1 credit**

**PREREQUISITE: DNT 100 or Permission of instructor**

**COREQUISITE: DNT 111, DNT 112, DNT 113, DNT 116, SPH 107, MTH 100 or 112 or 116**

This course is designed for the integration of previously acquired knowledge of OSHA Standards and Infection Control in a clinical setting. Emphasis will be placed on clinical application of Infection Control and Compliance of OSHA Standards as it relates to dental chairside assisting. Upon completion, students should be able to demonstrate skills in the area of Infection Control and OSHA Guidelines.

**DNT 116 PRECLINICAL PROCEDURES II (2T) 2 credits**  
**PREREQUISITE: DNT 101 Pre-Clinical Procedures I and Permission of the instructor**

**COREQUISITE: DNT 111, DNT 112, DNT 113, DNT 124, SPH 107 and MTH 100 or MTH 112 or MTH 116**

This course is a continuation of Pre-Clinical Procedures I. Emphasis is placed on dental specialties. Upon completion, the student should be able to discuss and identify dental specialty procedures and instrumentation.

**DESIGN DRAFTING TECHNOLOGY (DDT)**

**DDT 104 BASIC COMPUTER AIDED DRAFTING (1T,4E) 3 credits**

This course provides an introduction to basic Computer Aided Drafting and Design (CADD) functions and techniques, using "hands-on" applications. Topics include terminology, hardware, basic CADD and operating system functions, file manipulation, and basic CADD software applications in producing softcopy and hardcopy.

**DNT 121 DENTAL OFFICE PROCEDURES (4T) 4 credits**  
**PREREQUISITE: Admission to Dental Assisting Program and Permission of instructor**

**COREQUISITE: DNT 122, DNT 123, ENG 101**

This course is designed to address basic dental office procedures including appointment and recall systems, financial records, accounting procedures, insurance claims, filing systems, purchasing and inventory of supplies and equipment, and the utilization of computers to perform business office procedures. Emphasis is placed on the duties of a dental receptionist. Upon completion, students should be able to demonstrate efficiently in practice management.

**DDT 111 FUNDAMENTALS OF DRAFTING AND DESIGN TECHNOLOGY (1T, 4E) 3 credits**  
**COREQUISITE: DDT 104**

This course serves as an introduction to the field of drafting and design and provides a foundation for the entire curriculum. Topics include safety, lettering, tools and equipment, geometric constructions, orthographic sketching, and drawing.

**DNT 122 CLINICAL PRACTICE II (12C) 4 credits**  
**PREREQUISITE: Admission to Dental Assisting Program and Permission of instructor**

**COREQUISITE: DNT 121, DNT 123, ENG 101**

This course is designed to provide the student the opportunity to develop advanced dental assisting skills in chairside dental assisting procedures, radiology, receptionist duties,

**DDT 122 ADVANCED TECHNICAL DRAWING (1T, 4E) 3 credits**  
**PREREQUISITE: DDT 111 AND DDT 127**

This course covers the methods of providing size description and manufacturing information for production drawings. Emphasis will be placed on accepted dimensioning and tolerancing practices including Geometric Dimensioning and Tolerancing for both the Customary English System and the ISO System. Upon completion, students should be able to apply dimensions, tolerances, and notes to drawings to acceptable standards, including

## Course Descriptions

Geometric Dimensioning and Tolerancing, and produce drawings using and specifying common threads and various fasteners, including welding methods.

**DDT 124 BASIC TECHNICAL DRAWING (1T,4E) 3 credits**  
**PREREQUISITE: DDT 104, DDT 111**

This course covers sections, auxiliary views, and basic space geometry. Emphasis will be placed on the theory as well as the mechanics of applying sections, basic dimensioning, auxiliary views, and basic space geometry.

**DDT 127 INTERMEDIATE COMPUTER AIDED DRAFTING AND DESIGN (1T, 4E) 3 credits**  
**PREREQUISITE: DDT 104**

This course covers intermediate-level concepts and applications of CADD. Emphasis will be placed on intermediate-level features, commands, and applications of CADD software.

**DDT 128 INTERMEDIATE TECHNICAL DRAWING (1T,4E) 3 credits**  
**PREREQUISITE: DDT 127**

This course is designed to develop a strong foundation in common drafting and design practices and procedures. Topics include dimensioning concepts and pictorial drawings.

**DDT 131 BASIC MACHINE DRAFTING (1T, 4E) 3 credits**  
**PREREQUISITE: DDT 127, DDT 111, DDT 122**

This course in machine drafting and design provides instruction in the largest specialty area of drafting in the United States in terms of scope and job opportunities. Emphasis will be placed on the applications of multi-view drawings, including drawing organization and content, title blocks and parts lists, assembly drawings, detail drawings, dimensioning and application of engineering controls in producing industrial-type working drawings. Upon completion, students should be able to organize, layout, and produce industrial-type working drawings, including the application of title blocks, parts lists, assemblies, details, dimensions, and engineering controls.

**DDT 132 ARCHITECTURAL DRAFTING (1T, 4E) 3 credits**  
**PREREQUISITES: DDT 127**

This course in architectural design and drafting introduces basic terminology, concepts and principles of architectural design and drawing. Topics include design considerations, lettering, terminology; site plans, and construction drawings. Upon completion, students should be able to draw, dimension, and specify basic residential architectural construction drawings.

**DDT 150 THEORY OF RESIDENTIAL DRAWING AND DESIGN (3T) 3 credits**

This course provides the theory of residential drawing and design. Topics include architectural styles, house design, site and space planning, climate, drawing requirements, construction materials and process, terminology, and specific types of drawings required to complete a full set of construction documents. Introductory, intermediate, and advanced topics are covered. Emphasis is placed on an understanding of the various requirements essential to the field of residential drawing and design.

**DDT 155 DRAWING FOR RESIDENTIAL CONSTRUCTION (8E) 4 credits**

**PREREQUISITE: DDT 127, DDT 150**

This course is a direct applications lab to the topics covered within DDT 150. Emphasis is placed upon the production of quality construction documents.

**DDT 213 CIVIL DRAFTING, PLAT MAPS (1T, 4E) 3 credits**  
**PREREQUISITE: DDT 127**

This course introduces the drafting practices, symbols, conventions, and standards utilized in civil engineering contract documents. Topics include site planning, land surveying, topographic surveys, along with civil terminology. Upon completion, students should be able to draw accurate plat maps giving legal descriptions of land parcels, draw simple site plans, and identify and use proper symbols and conventions on civil engineering drawings.

**DDT 225 STRUCTURAL STEEL DRAFTING (1T, 4E) 3 credits**  
**PREREQUISITE: DDT 127**

This course covers the theory and practical applications necessary to understand the basic design and terminology of structural steel components used in light commercial buildings. Emphasis is placed on structural steel drafting techniques, bolted and welded connections, framing plans, sections, fabrication and connection details, and bills of material. Upon completion, students should be able to produce engineering and shop drawings incorporating standard shapes, sizes, and details using the A.I.S.C. Manual and incorporating safety practices.

**DDT 233 SOLIDS MODELING (2T, 2E) 3 credits**  
**PREREQUISITE: DDT 104**

This course provides instruction in 3D capabilities of CAD software. Emphasis is placed on 3D wire-frame, surface and solids modeling along with the development of 2D detail drawings from 3D models. Upon completion, students should be able to generate 3D surface and solid models and 2D orthographic production drawings from created solid models.

## ECONOMICS (ECO)

**ECO 130 CONSUMER ELECTRONICS (3T) 3 credits**

This course explores the application of general economic principles and practices concerning personal consuming, saving, and investing. It also stresses the relationship of sound personal financial management with successful career goals. Topics covered will include: consumerism, income and family financial planning, insurance, and investments.

**ECO 231 PRINCIPLES OF MACROECONOMICS (3T) 3 credits**

This course is an introduction to macroeconomic theory, analysis, and policy applications. Topics include the following: scarcity, demand and supply, national income analysis, major economic theories concerning monetary and fiscal policies as stabilization measures, the banking system, and other economic issues or problems including international trade.