

Pre-Computer Science/Computer Information Systems/Computer Information Systems Technology/Computer Technology (CIS)

Availability of courses in this program is dependent upon student enrollment. See master schedule of classes or advisor for further information.

CIS 146 Microcomputer Applications 3-0-3
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. This course or an equivalent is CORE for the AAT and AAS CIS programs. NOTE: CIS 146 satisfies the mathematics proficiencies for Area III for the Cyber Security Technician Certificate and the Software Technician Certificate ONLY.

CIS 147 Advanced Microcomputer Applications 3-0-3
PREREQUISITE: CIS146 or permission of instructor.
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. **Offered only via distance education in the spring semester.**

CIS 148 Post Advanced Microcomputer 3-0-3
Applications
PREREQUISITE: CIS147
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. **Offered only via distance education in the summer semester.**

CIS 155 Introduction to Mobile App 3-0-3
Development
The purpose of this course is to introduce the students to various app development tools for various mobile platforms. Specific topics include: app distribution sources, mobile device operating systems, surveys of app development software, processes for design, build, deploying, and optimizing apps. At the conclusion of this course students will be able to design, build, deploy, and optimize a basic app. **Offered only in the fall semester.**

CIS 157 Introduction to App Development 1-2-3
With Swift
This introductory one semester course is designed to help students build a solid foundation in programming fundamentals using Swift as the language. Students get practical experience with the tools, techniques, and concepts needed to build a basic IOS system. **Offered only on the Shoals campus**

CIS 189 Co-op for CIS I 3-0-3
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 199 Network Communications 3-0-3
This course is designed to introduce students to the basic concepts of computer networks. Emphasis is placed on gaining an understanding of the terminology and technology involved in implementing networked systems. The course will cover the OSI and TCP/IP network models, communications protocols, transmission media, networking hardware and software, LANs (Local Area Networks) and WANs (Wide Area Networks), Client/Server technology, the Internet, Intranets and network troubleshooting. Upon completion of the course, students will be able to design and implement a computer network. Students will create network shares, user accounts, and install print devices while ensuring basic network security. They will receive hands-on experience building a mock network in the classroom. This course will help prepare students for the CCNA and Network + certifications. This is a CORE course for the AAT, AAS CIS programs. CIS 161 or CIS 273 may be used as a suitable substitute for this course. **Offered only on the Shoals campus in the summer semester.**

CIS 202 Python Programming 3-0-3
This course is an introduction to the Python programming language. Topics include input and output, decision structures, repetition structures, functions, working with files, strings, object-oriented programming and inheritance. Upon completion, students will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests. **Offered only in the summer semester.**

CIS 205 Control Language and Utilities Applications 3-0-3
This course introduces computer operation and the job or executive language on a mini- or mainframe computer using both batch and on-line techniques. Utilities including sorts, screen design aids, and control programs while operating system concepts such as scheduling are introduced. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests. **Offered only on the Shoals campus in the summer semester.**

CIS 207 Introduction to Web Development 3-0-3
Notepad and Internet Explorer are used in this course. At the conclusion of this course, students will be able to use specified markup languages to develop basic Web pages. **Offered only in the fall semester.**

CIS 209 Advanced Web Development 3-0-3
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. XAMPT is a free web portable server used in this course. **Offered only in the spring semester.**

CIS 214 Security Analysis (Pen Testing) 3-0-3
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. **Offered only on the Shoals campus in the spring semester.**

CIS 220 App Development With Swift 1-2-3
PREREQUISITE: CIS 157
This is the first of two courses designed to teach specific skills related to app development using Swift language. **Offered only on the Shoals campus**

CIS 227 App Development With Swift II 1-2-3
PREREQUISITE: CIS 220
This course focuses on building specific features for IOS apps. Students apply their knowledge and skills to developing new apps. **Offered only on the Shoals campus**

CIS 245 Cyber Defense 3-0-3
This course provides students with information on the concept of cyber defense. Topics include information relative to legal aspects of cyber-attacks, threats to various levels of national and local social infrastructure, financial systems, personal data, and other direct and indirect threats. As part of this course students explore current and historical cyber threats and U. S. policy regarding infrastructure protection. **Offered only on the Shoals campus in the fall semester.**

CIS 246 Ethical Hacking 3-0-3
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. **Offered only on the Shoals campus in the summer semester.**

CIS 249 Microcomputer Operating Systems 3-0-3
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, how to execute programs, and efficient disk and file management. CIS 249 satisfies the written communication proficiencies for Area I for the Cyber/ Security Technician Certificate and the Software Technician Certificate ONLY. **This course is offered only in distance format in the spring semester.**

CIS 251 C++ Programming 3-0-3
This course is an introduction to the C++ programming language including object oriented programming. Topics include: problem solving and design; control structures; objects and events; user interface construction; and document and program testing. **This course is offered only in the spring semester.**

CIS 255 JAVA Programming 3-0-3
This course is an introduction to the Java programming language. Topics in this course include object-oriented programming constructs, Web page applet development, class definitions, threads, events and exceptions. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests. **This course is offered only in the fall semester.**

CIS 261 COBOL Programming 3-0-3
This course is an introduction to the COBOL programming language. Included are structured programming techniques, report preparation, arithmetic operations, conditional

statements, group totals, and table processing. Upon completion, the student will be able to demonstrate knowledge of the topics through the completion of programming projects and appropriate tests.

CIS 263 Computer Maintenance 3-0-3

This course provides students with hands-on practical experience in installing software, operating systems, troubleshooting, and maintaining systems. The class will help to prepare participants for the A+ certification sponsored by CompTIA. *This course is offered only on the Shoals campus in the fall semester.*

CIS 280 Network Security 3-0-3

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, and 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. *This course is offered only on the Shoals campus in the spring semester.*

CIS 284 CIS Internship 3-0-3

This course is designed to provide the student with an opportunity to work in a degree/program related environment. Emphasis is placed on the student's "real world" work experience as it integrates academics with practical applications that relate meaningfully to careers in the computer discipline. Significance is also placed on the efficient and accurate performance of job tasks as provided by the "real world" work experience. Grades for this course will be based on a combination of the employer's evaluation of the student, and the contents of a report submitted by the student. Upon completion of this course, the student should be able to demonstrate the ability to apply knowledge and skills gained in the classroom to a "real world" work experience.

CIS 291 Case Study in Computer Science 3-0-3

This course is a case study involving the assignment of a complete system development project for analysis, programming, implementation, and documentation. Topics include planning system analysis and design, programming techniques, coding and documentation. Upon completion, students should be able to design, code, test and document a comprehensive computer information system.

CIS 294 Special Topics- Business and Industry Project I 3-0-3

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 296 Special Topics- Business and Industry Project II 3-0-3

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 knowledge of the course topic through completion of assignments and appropriate tests.

CIS 297 Co-op for CIS II 3-0-3

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 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 3-0-3

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.