COMPUTER INFORMATION SYSTEMS (CIS)

CIS 109. Introduction to Programming. 3 Credits.
This course introduces students to fundamental problem-solving and programming concepts using the high-level language Python. Topics covered include data types, variables, constants, decision statements, repetition, functions, string processing and file I/O. Prerequisites: FYE 101, MAT 092, RDG 098, (or placement).

CIS 118. Mobile and Web Development. 3 Credits.
This course will cover topics that include web servers, web development software such as Expression Web and Notepad++, web languages (HTML5/XHTML, and CSS), as well as mobile and website development. Students will learn how information is transferred over the Internet, how to write HTML5 and CSS code, and how to create, maintain, and publish a website for both mobile and traditional desktop devices. Topics will include working with forms, tables (and when to substitute tables with other formatting in mobile), images, graphics, hyperlinks, media queries, viewports, page weigh, network load (and testing), emulator use, and a one web design approach. All students will be expected to create, maintain, and publish several websites on a college web server. Prerequisites: FYE 101, MAT 092, RDG 098, or placement.

CIS 121. Spreadsheet Applications. 3 Credits.
Students should be comfortable with basic computer usage prior to enrolling in this course. Essential computer skills include utilizing web browsers and email as well as managing files and folders (save, locate, open, create, delete). This course is designed to develop spreadsheet skills, with an in-depth study of spreadsheet design and analysis as they relate to business applications. Topics include the fundamentals of spreadsheet design, coverage of business formulas and functions, linking multiple worksheets and files, proper layout and design, and an introduction to macros using the Visual BASIC for Applications (VBA) language. Prerequisites: ENG 098, FYE 101, MAT 092, RDG 098, or placement.

CIS 123. Microcomputer Database Management. 3 Credits.
This course is for students who are already familiar with computer use. Students must know how to use web browsers, email and manage files and folders (save, locate, open, create, delete). This course uses a database software package for a wide range of applications. Students create tables, construct queries, design forms, and generate reports. Students will also utilize constraints, data types, primary and foreign keys; define relationships and database design concepts; as well as import and export external data. Students will create action queries as well as select queries that use aggregate functions, calculated fields, wildcards, keywords, comparison criteria, Boolean terms, and table joins. Prerequisite: MAT 092.

CIS 127. Computer Technologies. 3 Credits.
This course is for students who are already familiar with computer use. Students must know how to use a word processor, web browsers, email and manage files and folders (save, locate, open, create, delete). A variety of computer applications will be used as tools to increase students’ productivity in school and in the workplace as well as enhance their problem solving ability. Students will use utilities to perform basic computer maintenance; evaluate computer hardware and devices for purchase based on need; identify and assess user habits in regard to security threats and vulnerabilities (including viruses, malware, spyware, firewalls, passwords, encryption, and privacy); locate, evaluate and use electronic information sources (including academic databases) to solve problems and enhance software skills; use a spreadsheet application to record data, perform calculations, create graphical representations, and interpret results; write and publish web pages using HTML tags (headings, paragraphs, lists, images, and links) and CSS (color, background, and font family); use Microsoft Access to create and execute queries (with Boolean terms and aggregate functions), as well as assess results; generate reports on tables and query results in Microsoft Access. The goal is for students to become independent users of information, computer technology, and library resources. Students will be expected to communicate and collaborate throughout the course as they present their projects and assignments. Prerequisites: ENG 098, FYE 101, RDG 098, or placement.

CIS 128. Introduction to Information Systems. 3 Credits.
This course provides a broad overview of information systems and their components. Students will learn the basic concepts of systems, business and web services software, networks, data storage and management, information and systems security and the development of information systems. Word processing, spreadsheet and database applications are utilized throughout the course to apply concepts to real-world examples. Electronic communication, presentation, and collaboration applications are also utilized to develop essential computing skills. Prerequisite: ENG 098, RDG 098, FYE 101, or placement.

CIS 131. Linux Programming. 3 Credits.
This course provides students a solid foundation in the fundamentals of the Linux operation system. Students gain system level experience through problem solving exercises at the command line and in the graphical use interface. Students learn the essential command-line commands necessary to be accomplished users of their Linux workstations, as well as be able to use the GUI when appropriate. Prerequisite: CIS 140.
CIS 132. iOS (iPhone and iPad) App Development. 3 Credits.
This course will teach you how to make your own iPhone and iPad apps utilizing the Swift language within the xCode IDE on MAC computers. Students (in the on campus class) will not be required to purchase Apple computers to complete classwork; additional lab time will be scheduled for assignments. And open lab time will also be available. Topics covered will include: basic iOS, xCode and Interface Builder, xCode Playground, testing on the iOS Simulator, Storyboards, the Cocoa Touch Frameworks, UIKit, Controls, previous introduction to programming topics (i.e. – variables, control flow, functions, and arrays), classes, and security. Prerequisites: CIS 109 or permission from the instructor. Spring.

CIS 140. Microcomputer Networking Applications. 3 Credits.
This course provides students with the necessary knowledge and skills to perform competently in the role of network administrator or system manager. Major topics include networking concepts, setting up user and group accounts, securing network resources, configuring and administering network printers, backup, auditing events, and monitoring network resources. Prerequisites: FYE 101, MAT 092, RDG 098, or placement.

CIS 141. Supporting Private Clouds. 3 Credits.
This course will instruct future network administrators how to effectively implement and maintain private clouds with a balance of conceptual expertise and hands-on skills. With a focus on server administration, this course will introduce working with Virtual Machines and prepares students to work with large providers such as Amazon, Microsoft, and Google, as well as implement smaller scale cloud computing solutions within their own network environments. Specific topic coverage includes: Introduction to the Private Cloud, Creating and Managing Virtual Machines, Configuring the Hyper-V Environment, Installing and Using Virtual Machine Manager, Installing and Using the Self-Service Portal Using the Virtual Desktop Infrastructure (VDI), Implementing High Availability in the Private Cloud, Managing High-Availability Clusters and Managing the Private Cloud with PowerShell. Prerequisite: CIS 140.

CIS 142. Web Server Management. 3 Credits.
This course teaches students how to support the various features of an Internet information server. Learn how to configure a server for Internet access and publishing, Internet connectivity options, compare Internet and Intranet implementations, install and configure a web server, and optimize server performance. Prerequisite: CIS 140.

CIS 143. Computer Service and Repair. 3 Credits.
This is a current and comprehensive course on configuring, diagnosing, and repairing microcomputers and associated technologies. (PC compatible units are used in this course.) Topics covered include how computers work, how software and hardware work together, the systems board, understanding and managing memory, floppy disk and hard disk drives, installing and supporting disk drives, troubleshooting fundamentals, supporting I/O devices, and multimedia technology. Completion of this course will assist the student in preparing to pass the A+ certification exams and succeed in the PC repair industry. No electronic experience is assumed or required. Prerequisites: FYE 101, MAT 092, RDG 098, or placement.

CIS 144. Network Security. 3 Credits.
This hands-on course is designed to prepare students for the security challenges they will face as a networking professional. Specific topic coverage includes designing a secure network framework, securing servers based on function, designing a secure public key infrastructure, securing the network management process, securing network services and protocols, securing Internet information services, securing VPN and extranet communications, securing active directory, securing network resources, and securing network clients. Prerequisite: CIS 140 or permission of division dean.

CIS 219. Principles Of Information Security. 3 Credits.
This course provides students with a broad overview of information security and serves as the capstone course for the Computer Information Systems degree program. The required networking, database and programming courses for the Information Systems degree program lays a solid foundation for learning information security terminology and measures that protect confidentiality, preserve integrity, and promote availability of data. Topics include security policies, security models, business continuity plans, computer crime and security laws, physical security, operations security, access control, cryptography. Internet security and application development security. Students will complete at least one major research and writing project, at least one oral class presentation, and work on at least one team project. Students should find the topics covered informative and useful for their career in the Information Technology field, and the topics serve as a foundation for advance studies in Information Security. Prerequisite: Completion of 24 CIS credits or permission of division dean.

CIS 224. Beginning Pl/SqI. 3 Credits.
This course is designed to teach data modeling and PL/SQL skills. Students will be able to define a well-structured relational database; use database design concepts to create tables, keys, and constraints; and apply business rules and normalization models while creating ERDs and data dictionaries. Students will also write and run scripts to create tables and insert and delete records. Students will create select queries (using 'where' and 'order by' clauses, aggregate functions, inner and outer joins, and 'having' and 'group by' clauses).
as well as action queries to update, delete, and append data. Additionally, students will generate functions, procedures, and triggers. Prerequisites: CIS 109 (or corequisite); CIS 127 or CIS 128. Spring.

**CIS 232. Programming C++. 3 Credits.**
This course is an introduction to C++ as an object-oriented programming language. The fundamentals of data types, variables, access modifiers, scope, selection structures, repetition structures, functions, and arrays will be covered using C++ classes and objects. Key topics in object oriented program design include encapsulation, information hiding, member access control, constructors, destructors, software reusability, member functions, overloaded functions and operators, and dynamic memory allocation. All students will be expected to write programs in C++ to exercise these topics. Prerequisite: FYE 101, MAT 092, RDG 098, or placement.

**CIS 290. Java I. 3 Credits.**
This course is an introduction to object-oriented programming (OOP) using Java. Object-oriented programming enables the programmer to create flexible, modular programs and reuse code. Students learn what classes and objects are and how they interrelate to each other by writing programs in Java. The following topics will be covered: classes, objects, fundamental data types, control structures, repetition, operators, methods, strings, and arrays. Prerequisite: CIS 109 or comparable programming/course experience. Fall.

**CIS 292. Java II. 3 Credits.**
This course is continuation of CIS 290 Java I. Students will write object oriented programs in Java that include inheritance, polymorphism, packages, interfaces, advanced GUI programming, exception handling, file input/output and recursion. Prerequisite: CIS 290. Spring.