

## Computer and Information Science Courses

### **CIS 111 Introduction to Computer Usage** (3 credits)

An introduction to DOS, MS Windows, and MS Office Pro for the general student. This course concentrates on the basic skills and knowledge needed to use a computer in everyday life. The emphasis is on word-processing and the use of spreadsheets with an introduction to database and presentation software.

### **CIS 127 Introduction to Programming & Abstraction** (3 credits)

Using the C++ programming language, the student will learn to develop objects and methods to implement algorithms and abstractions. The emphasis will be on how to create an abstraction and how to test the validity of the abstraction. A strong emphasis will be placed on learning basic problem solving skills and how to apply these skills to problems that can be solved using a computer.

### **CIS 224 Introduction to Web Design** (3 credits)

Students will learn how to navigate in cyberspace and how to create an effective web page. Students will apply the techniques of outlining to producing effective and manageable web pages. They will learn how to manage a web site, and will create their own web page.

### **CIS 225 Databases** (3 credits)

The database will be an important information commodity in the business and academic world in the 21st century. This course will be a study of the implementation of computer-based information systems in a database environment. The emphasis is on design, documentation, and implementation of databases. This will be a hands-on course in which the students will be responsible for designing and implementing a database.

### **CIS 226 Object-Oriented Programming and Design** (4 credits)

This course will extend principles from CIS 127 to include object oriented design and programming with abstraction development in the Java programming language. Prerequisite: CIS 127 or permission of the instructor.

### **CIS 332 Data Structures & Algorithm Analysis** (3 credits)

A study of data organization using stacks, arrays, queues, linked lists, tables, and trees. Use of recursion and hash coding in algorithms and data structures. Analysis of algorithms and basic sorting techniques will also be studied. Prerequisite: CIS 226 and MAT 216 or permission of the instructor.

### **CIS 333 Introduction to Computer and Information Organization** (3 credits)

Discussion of the hardware, systems software, and architecture of typical computer systems. Topics such as chip and register level processes, operation system functions, parallel processing, time sharing, input and output processing, etc. Prerequisite: CIS 226 or permission of the instructor.

### **CIS 335 Computer Information Systems** (3 credits)

Focuses on 1.) specification of information requirements associated with organizational decision-making, 2.) identification of data sources, 3.) matching of information requirements with data sources into information flows, and 4.) evaluation, modification and integration of information flows into information systems. Prerequisite: CIS 111 and CIS 225 or permission of the instructor.

### **CIS 337 Networking Essentials I** (3 credits)

This course is designed to prepare students to understand, plan and support a computer network in an organization. This will cover the basics of networking and the OSI model. It will cover network media and topology, connectivity, administration and troubleshooting, and resources necessary to run a multi-user computing facility. Prerequisite: CIS 127 or permission of the instructor.

### **CIS 338 Networking Essentials II** (3 credits)

This course will focus on the integration of workstations into client/server architectures and the integration of a server into the collection of servers in an enterprise. This will be a hands-on course in which the students will initialize and maintain workstations and servers. Prerequisite: CIS 337 or permission of the instructor.