

COMPUTER INFORMATION SYSTEMS CERTIFICATE

The Computer Information Systems Certificate is designed to prepare professionals who want to change careers to the computer field or upgrade their skills to keep up with new technologies. All courses are taught by highly skilled IT professionals in state-of-the-art labs with the latest versions of industry software. Upon completion of the Certificate graduates will have the hands-on-experience and skills that are needed to build a career or enhance their opportunities for advancement at their current jobs.

The program focuses on three main areas of Information Technology:

- Software Engineering
- Database Administration
- Web Application Development

The prerequisite for all computer science courses is MATH 105 Intermediate Algebra.

COMPUTER INFORMATION SYSTEMS CERTIFICATE IN SOFTWARE ENGINEERING

The Software Engineering track focuses on software development skills such as program design, code, development, systems analysis and design, project management and client interaction. The program provides practical skills in the latest Object Oriented Analysis and Design methods utilizing commercial CASE tools and current programming languages. The major concepts and components of object technology in the context of the various phases of Software Development Life Cycle using the Unified Modeling Language (UML) standard will be the main focus on this certificate.

The certificate program is valuable for software engineers, systems analysts, designers and programmers who need to take full advantage of the benefits of Object Oriented software development.

Graduates will have the necessary skills and knowledge to be employed as project managers system analysts, application developers, or software testers.

Requirements: COMP 101, COMP 152, COMP 302, COMP 310.

COMPUTER INFORMATION SYSTEMS CERTIFICATE IN DATABASE ADMINISTRATION

The Database Administration track focuses on the specific skills required to administer an enterprise database such as Microsoft SQL Server or Oracle Server. This certificate program will prepare students for professional certification exam in Oracle or Microsoft SQL Database administration.

Current database systems, because of their sizes and functionalities, are coming under increasingly stringent demands in terms of performance, reliability and scalability. This has resulted in increasing demand for database administrators.

This course is valuable to those involved in the management of enterprise databases, including administrators, consultants, analysts, engineers, designers and developers.

Requirements: COMP 101, COMP 152, COMP 250, COMP 450.

COMPUTER INFORMATION SYSTEMS CERTIFICATE (CONT.)

COMPUTER INFORMATION SYSTEMS CERTIFICATE IN WEB APPLICATION DEVELOPMENT

The Web Application Development track focuses on the technologies, formats, standards, tool products, and other elements in Web Application Development, with emphasis on Web systems for electronic-commerce (e-commerce), corporate support, entertainment, intranet, and extranet.

The Internet and the Web have created high demand for Web development experts. This Certificate program offers extensive hands-on exercises to provide students with practical experience in developing enterprise Web applications using Visual Studio.net, XML and Web service.

This program provides the skills to create fast, scalable enterprise-wide business applications. You build user interfaces and write database and business logic, using the new ASP.net component technologies and Web Services.

The program is valuable for those who wish to work in the Web production field involved in establishing, developing or maintaining a Web site, including application developers, Web developers, Web developers client-server programmers and technical managers and staff. It is also ideal for Web professionals who specialize in a particular area but wish to expand their breadth of knowledge by learning about the latest technologies and tools such as XML and Web Service.

Graduates will have the necessary skills and knowledge for career roles as webmasters, web application developers, web programmers and web administrators.

Requirements: COMP 101, COMP 152, COMP 302 or COMP 250, COMP 310, COMP 400.

COMPUTER SCIENCE SYSTEM DEVELOPMENT FEE

Computer Science students acquire over \$8000 worth of industry-standard software for only \$400 per year. This required purchase will include all updates and new releases as they become available throughout the year. The first time you register for any computer science course (except COMP 101, or COMP/BUSN 382), your student account will be charged \$400. You will have the entire semester to pay this fee. To avoid paying this fee twice, plan to complete all your computer science courses in one academic year.

To meet the requirements for the software you will be using, your machine should have the following minimum requirements:

- PC: 1 GB of RAM (2 GB recommended)
56k modem or access to Internet (DSL or Cable recommended)
- Mac: G4 or better 1 GB of RAM (2GB recommended)
56k modem or access to Internet (DSL or Cable recommended)

Software: the latest available browser and word processing packages.

COMPUTER INFORMATION SYSTEMS CERTIFICATE (CONT.)

COMP 101 Fundamentals of Information Systems and Technology

Broad overview of computer science. Topics include: basic concepts in hardware, operating systems and networks, algorithmic problem solving, introduction to the object-oriented paradigm, and an overview of the social context of computing. No background in computer science is assumed or expected. 3 credits

COMP 152 Programming and Object Structures

Concepts of object-oriented and procedural software engineering methodologies in data definition and measurement, abstract data type construction and use in developing screen editors, reports and other IS applications. Programming in visual development environment that incorporates event-driven and object-oriented design. 4 credits.

COMP 250 Database Program Development

Application program development in a database environment using a host language. Data structures, file organizations; models of data storage devices, data administration and data analysis, design and implementation. Prerequisite: COMP 152. 3 credits.

COMP 302 Software Engineering

Analysis, design, implementation and testing of a medium-scale software system as a member of a project team. Significant real-world group projects covering all the phases of software development life cycle using high-level automated analysis and design tools. Experience with other important skills such as fact-finding, communications, and project management. Prerequisite COMP 250. 3 credits.

COMP 310 Network and Web Application Development

Modern applications software in business environments. Topics include: Enterprise web application development and security, web service, and XML in the enterprise. Hands-on experience using current technology to build business-to-business (B2B) and business-to-consumer (B2C) applications. Prerequisite: COMP 250. 3 credits.

COMP 400 Applied Software Development Project

Comprehensive systems development project. Team approach to analyze, design, and document realistic systems of moderate complexity. Project management methods, scheduling and control, formal presentations, and group dynamics in solving systems problems. Development of a database. Prerequisite: COMP 305 and COMP 310. 3 credits.

COMP 450 Advanced Database Concepts

Database administration, technology, selection of database management systems. Practicum in data modeling and system development in a database environment. Trends in data management. Prerequisite: COMP 250. 3 credits.