MANAGEMENT COMPUTER SYSTEMS (MCS)

Courses

MCS 214 INFORMATION TECHNOLOGY CONCEPTS AND PRACTICE 3 Units

A survey course that covers the use of information technology in organizations, the processes used to create and manage information technologies, and the impact of information technology on individuals, organizations, the economy and society. Students learn how to do systems analysis, data modeling, system and database design, database queries, and construction and testing of a database application as part of a systems development life cycle.
PREREQ: COMPSCI 181 OR ITSCM 280 AND COMBINED CUMULATIVE GPA OF 2.50

MCS 220 Intermediate Java 3 Units

This course teaches more advanced topics in object-oriented program design and the Java programming language. Coverage includes mulit-dimensional arrays, methods, error handling, strings, regular expressions, encapsulation, inheritance, polymorphism, generic types, program debugging and testing, database and file processing, event-handling, and graphical user interfaces.
PREREQ: COMPSCI 172 OR (COMPSCI 174 AND CONSENT OF INSTRUCTOR)

MCS 231 CONCEPTS OF DATA STRUCTURES 3 Units

This course is an introduction to data structures, using the Java programming language. It covers static and dynamic implementations of data structures including lists, stacks, queues and trees. It emphasizes object-oriented design and programming methodology, including inheritance and polymorphism, and applies these in the development of large programming projects. UNREQ: MCS 231, COMPSCI 231, COMPSCI 223
PREREQ: COMPSCI 220 OR COMPSCI 222 AND A COMBINED CUMULATIVE GPA OF 2.50
UNREQ: MCS 231, COMPSCI 231, COMPSCI

MCS 232 COBOL AND COMPLEX SYSTEMS 3 Units

The course emphasizes how a complex system can be designed and implemented in terms of multiple independent layers. Topics include the fundamentals of COBOL and its integration with client/server and Web systems.
PREREQ: MCS 220 OR COMPSCI 222 AND A COMBINED CUMULATIVE GPA OF 2.50

MCS 314 ADVANCED DATABASE DESIGN AND ADMINISTRATION 3 Units

This coursecovers advanced topics in database analysis, design, access, integrity control, and implementation as well as a variety of emerging topics. The course is intended for students who already have a good understanding of database systems and relational database comcepts.
PREREQ: ITSCM 280, ADMISSION TO THE COLLEGE AND 2.50 FOR BUSINESS MAJORS OR 60 CREDITS AND 2.00 FOR MINORS/NON-BUSINESS MAJORS FOR WHICH THIS COURSE IS AN OPTION
CROSS-LISTED: ITSCM 314 AND MCS 314

MCS 325 WEB DEVELOPMENT 3 Units

This course will give students familiarity with client/server computing in two/three-tiered Internet environment. This includes the development of dynamic web pages to exchange data with relational database management systems using scripting technologies. Students will use an event-driven, object-oriented programming language to construct ActiveX components that connect with database servers. The course will also explore basic networking concepts.
PREREQ: ITSCM 285 AND COMPSCI 172 OR COMPSCI 174. ADMISSION TO UPPER DIVISION A 2.5 COMBINED CUMULATIVE GPA FOR BUSINESS MAJORS OR 60 UNITS AND 2.0 GPA FOR MINORS/NON-BUSINESS MAJORS FOR WHICH THIS COURSE IS AN OPTION.
CROSS-LISTED: MCS 325 AND ITSCM 325

MCS 331 SYSTEMS ANALYSIS AND DESIGN 1 3 Units

In this course, the student learns to analyze the business organization as a system, to structure both the information and processes of a business or organization, and to complete the systems development process through the logical design phase. The course utilizes an object-oriented methodology for the systems development process. The student begins a team project that is completed in MCS 431.
PREREQ: ITSCM 280, ADMISSION TO THE COLLEGE AND 2.50 FOR BUSINESS MAJORS OR 60 CREDITS AND 2.00 FOR MINORS/NON-BUSINESS MAJORS FOR WHICH THIS COURSE IS AN OPTION
CROSS-LISTED: MCS 331 AND ITSCM 321

MCS 391 MCS COOPERATIVE PROGRAM 3 Units

The student is to work as an information systems professional in a business or government organization and report on the experience to the MCS faculty and fellow students.
PREREQ: COMBINED CUMULATIVE GPA 2.50 AND ACHIEVE 60 CREDITS, MAINTAIN A 2.50 GPA OR BETTER AND A BUSINESS MAJOR IN ORDER TO TAKE 300 OR 400 LEVEL BUSINESS COURSES.

MCS 425 MOBILE DEVELOPMENT 3 Units

This course teaches students how to develop Web applications using Java technologies. The course focuses on design and implementation of distributed applications for the Internet and/or intranets. Topics include object-oriented distributed systems and technologies, database access, security, advanced Java programming, and technical design issues for e-Commerce systems.
PREREQ: ITSCM 285 AND COMPSCI 172 OR COMPSCI 174 AND 2.50 COMBINED CUMULATIVE GPA
CROSS-LISTED: MCS 425 AND ITSCM 425

MCS 431 SYSTEMS ANALYSIS AND DESIGN 2 3 Units

This course is a study of the principles and activities associated with the physical design and implementation of computer based information systems using object oriented methodologies. It includes object-oriented decomposition, system testing, documentation, system security, conversion and implementation. The student completes the team project started in MCS 331.
PREREQ: ITSCM 314 AND ITSCM 321 AND ADMISSION TO THE COLLEGE AND 2.50 FOR BUSINESS MAJORS OR 60 CREDITS AND 2.00 FOR MINORS/NON-BUSINESS MAJORS FOR WHICH THIS COURSE IS AN OPTION
CROSS-LISTED: MCS 431 AND ITSCM 421

MCS 475 NETWORK ENGINEERING 3 Units

This class will explore the OSI (Open Systems Interconnection) networking model, standard networking protocols, and network architecture including implementation, administration and maintenance. Students will also gain "hands-on" networking experience by installing and setting up a network operating system, building a small LAN, and managing network servers.
PREREQ: MCS 325, MCS 231 OR COMPSCI 223 AND A COMBINED CUMULATIVE GPA OF 2.50

MCS 485 PROJECT *Repeatable* 1-3 Units
This course provides students with the opportunity to participate on a student project team under the management of a faculty member and industry practitioners. The project will be sponsored by a partnering business firm and may involve a wide array of technologies, functional areas and geographically dispersed teammates. This course will only be offered when projects are available. Students will be carefully chosen through an interview process. The number of credits will be determined by the complexity of the project and the level of student involvement.
PREREQ: COMBINED CUMULATIVE GPA 2.50 AND ACHIEVE 60 CREDITS, MAINTAIN A 2.50 GPA OR BETTER AND A BUSINESS MAJOR IN ORDER TO TAKE 300 OR 400 LEVEL BUSINESS COURSES.

MCS 496 SPECIAL STUDIES *Repeatable* 3 Units
Variable topics. Group activity. Not offered regularly in the curriculum but offered on topics selected on the basis of timeliness, need, and interest, and generally in the format of regularly scheduled Catalog offerings. Consent of Instructor Required.
PREREQ: COMBINED CUMULATIVE GPA 2.50 AND ACHIEVE 60 CREDITS, MAINTAIN A 2.50 GPA OR BETTER AND A BUSINESS MAJOR IN ORDER TO TAKE 300 OR 400 LEVEL BUSINESS COURSES.

MCS 497 EXCHANGE STUDY *Repeatable* 1-12 Units
Variable topics.

MCS 498 INDEPENDENT STUDY *Repeatable* 1-3 Units
Study of a selected topic or topics under the direction of a faculty member. Department Consent Required.
PREREQ: APPROVAL OF THE MCS COORDINATOR AND THE FACULTY MEMBER SUPERVISING THE COURSE. COMPLETION OF AT LEAST FOUR MCS CORE COURSES AND A COMBINED CUMULATIVE GPA OF 2.50