

Information Systems and Technology 2006-2007 Catalog Course Descriptions

INFO 1000 Computer Programming Concepts

3:3:0 F, Sp

Prerequisite(s): MAT 0990 or higher, Computer Proficiency

Helps students to gain confidence in logical thinking and expression. Teaches students to read and write in a formal language, learn how to communicate complex ideas simply, decompose problems logically, and gain an appreciation of elegance in program design

INFO 1100 Exploring the Digital Domain

3:3:0 F, Sp

Prerequisite(s): None

Examines the digital domain and how it affects every part of our society--home, work, education, and recreation. Studies why computing technology works the way it does. Helps students realize how important it is to learn the basic concepts and skills required for working and living in an information world. Explores how a variety of businesses and individuals use information systems and technologies for success. The course also provides hands-on experience with a variety of desktop, multimedia, and Internet tools.

INFO 1120 Information Systems and Technology Fundamentals

3:3:0 Su, F, Sp

Prerequisite(s): Computer Proficiency

Explores the fundamental concepts of information technology and the role played by enterprise systems in business and organizational strategy. Introduces types of systems, computer organization and hardware, operating systems and networking, project planning, software development, computer ethics, and career paths for enterprise developers and IT professionals.

INFO 1200 Computer Programming I for IS/IT

3:3:0 F, Sp

Prerequisite(s): INFO 1120, MAT 1010 or higher, programming aptitude test or INFO 1000

Presents concepts of modern computer programming. Emphasizes problem-solving and algorithm development; program constructs and design; data representation, fundamental types and data structures; and, testing, debugging, and documentation. Introduces object-oriented, event-driven, and component-based programming models.

INFO 1420 Computer Architecture and Systems Software

3:3:0 F, Sp

Prerequisite(s): INFO 1120

Provides a thorough grounding in computer hardware, system software, and contemporary information system architecture. Examines hardware structure, operating systems theory, and systems software applications as part of a technical foundation for enterprise systems development and IT infrastructure procurement and management.

INFO 1510 UNIX/Linux Operating System

3:3:0 Su, F, Sp

Prerequisite(s): INFO 1200 or CNS 1400

Introduces the UNIX Operating System using the popular Linux OS. The student will be introduced to the file system, Linux administration, shell scripts, OS utilities, and program features and uses. Aids the student in the development, understanding, and working knowledge of the details of the Linux Operating System with single and multiple processor computers, memory organization, disk architectures, demand paged virtual memory, computer systems organization, architecture, operating systems, and systems software.

INFO 2030 Data Communication Fundamentals

3:3:0 F, Sp

Prerequisite(s): INFO 1420

Provides an in-depth knowledge of data communications and enterprise networking including networking and telecommunications technologies, hardware, and software. Emphasis on underlying technologies and protocols. Design topics include wired and wireless architectures; topologies, models, standards and protocols; and operation of bridges, routers, switches, and gateways. Management of telecommunications networks, cost-benefit analysis, and evaluation of connectivity options are covered.

INFO 2050 Database Fundamentals

3:3:0 F, Sp

Prerequisite(s): INFO 1200

Introduces concepts and use of database management systems. Presents the relational model, Structured Query Language, database design including normalization theory, and application development tools using an enterprise-level relational database management system.

INFO 2200 Computer Programming II for IS/IT

3:3:0 F, Sp

Prerequisite(s): INFO 1200, INFO 2050, MATH 1050 or higher

Continues the object-oriented, event-driven, and component-based programming fundamentals introduced in Computer Programming I for IS/IT. Topics include advanced graphical user interface (GUI) development and multimedia; file I/O, serialization, database connectivity and exception handling; collections, advanced data structures, sorting, searching and recursive algorithms; threading and network programming; and, application packaging and deployment. Introduces unit testing frameworks, refactoring, and design patterns.

INFO 2230 Data and Discrete Structures

3:3:0 Sp

Prerequisite(s): INFO 1200

Explores data structures, algorithm analysis, and discrete mathematics using an integrated approach. Topics include: induction and recursion, time and space complexity, and big-O

notation, propositional logic, proof techniques, sorting, and mathematical properties of data structures including linked lists.

INFO 2450 Web Application Design

3:3:0 F, Sp

Prerequisite(s): Computer Proficiency, INFO 1120 or AIM 1060

Focuses on the design and construction of WWW home pages and maintenance of web sites in a multi-media platform environment. Teaches current SGML (HTML) standards and exposes students to the latest enhancements. Covers design concepts, page layout, legal issues, basic client-side and server-side security, and commercial use of the Web.

INFO 2490 Computer Help Desk Consulting

3:3:0 On Sufficient Demand

Prerequisite(s): Computer Proficiency, INFO 1120

Provides knowledge base and skills necessary to become a help desk consultant. Includes function of help desk, role of help desk personnel, tutoring and small group instruction models, hardware and software diagnostics, problem resolution tracking, and customer-oriented service approach. Requires a course project and significant in-lab experience.

INFO 2640 Router Management

3:3:0 F, Sp

Prerequisite(s): INFO 1420, INFO 2030

Introduces configuration and management of Cisco routers. Includes networking basics, Ethernet switching, router hardware basics, IP and IPX routing theory, router commands, VLANs, access lists, security and WAN link configuration.

INFO 2650 Voice and Data Cabling Fundamentals

3:3:0 On Sufficient Demand

Prerequisite(s): INFO 1120 or TCT 1210 strongly recommended

For students interested in the physical aspects of voice and data network cabling and installation. Focuses on cabling issues related to data and voice connections and provides an understanding of the industry and its worldwide standards, types of media and cabling, physical and logical networks, as well as signal transmission.

INFO 2660 Information Security I - Fundamentals

3:3:0 F

Prerequisite(s): INFO 2030

Explores current standards of due care and best business practices in Information Security through an examination of security technologies, methodologies and practices. Emphasis is on evaluation and selection of optimal security posture. Topics include evaluation of security models, risk assessment, threat analysis, organizational technology evaluation, security implementation, disaster recovery planning and security policy formulation and implementation.

INFO 281R Cooperative Work Experience**2-8:0-0:10-40 Su, F, Sp***Prerequisite(s): Department Approval*

Provides opportunities to apply classroom theory on the job. Students work as paid employees in a job that relates to their careers while enrolled at the College. Credit is determined by the number of hours a student works during the semester. Students shall meet at least monthly with the Departmental Coop/Internship Coordinator. Completers meet individually set goals. A total of six credits may be applied toward graduation with an AAS degree and three credits toward certificate programs.

INFO 297R Independent Study**1-3:0:3-9 On Sufficient Demand***Prerequisite(s): Department Approval*

Offers independent study as directed in reading in individual projects. Approval for this course is at the discretion of the department chairperson. May be repeated for a maximum of 9 credits toward graduation.

INFO 301R Digital Lecture Series**1:1:0 F, Sp***Prerequisite(s): None*

Guest speakers lecture on current topics in information systems and technology.

INFO 3030 Networks and Internetworking**3:3:0 Sp***Prerequisite(s): INFO 2030*

Teaches the skills and techniques needed to configure, troubleshoot and support reliable TCP/IP internetworks, in a laboratory-based course. Offers the students the opportunity to install a network operating system; create user accounts; build an internetwork with cables, network cards, and routers; configure the Domain Name Server (DNS); set up and manage a web server; configure a firewall and intrusion detection system; and implement standards-based e-mail. Emphasizes the analysis and design of networks in organizations.

INFO 3120 Principles of Information Systems--A Managerial Approach**3:3:0 Su, F, Sp***Prerequisite(s): (MGMT 2200 or ENGL 2010 or ENGL 2020) and Computer Proficiency*

Introduces the field of information systems and technology. Teaches the general business manager how to use and manage the most current information technologies (IT). Studies the Internet, Intranets, and Extranets for electronic commerce and enterprise collaboration. Examines business cases demonstrating IT contributions to competitive advantage, reengineering business processes, and decision making.

INFO 3410 Database Systems**3:3:0 Sp***Prerequisite(s): INFO 1420, INFO 2050, INFO 2200*

Presents concepts and methods of defining, creating, and managing database systems. Includes information, transaction processing and security issues, performance analysis,

and a survey of emerging technologies in database management. Develops complex database designs and implements them using commercial database products. Studies the application of data warehousing/data mining tools in performing data analysis for decision making.

INFO 3420 Web Systems Development I

3:3:0 F

Prerequisite(s): INFO 2450, INFO 3410

This course provides an introduction to e-business strategy and the development and architecture of e-business solutions and their components using a modern, object-oriented, Web-based application framework which will allow interaction between any machine, on any platform, and on any device. Students will learn how to implement security with authentication, transport and display data on the Internet or an Intranet, integrate important e-commerce issues, and deploy an e-business solution.

INFO 3430 Systems Analysis, Design, and Integration

3:3:0 F

Prerequisite(s): INFO 2030, INFO 2050, INFO 2200, INFO 2450, MGMT 2200 or ENGL 2010 or ENGL 2020

Introduces the student to the systems development process including project management and the systems development life cycle consisting of planning, analysis, design and implementation phases. Covers the use of appropriate methodologies, tools, and techniques including object-oriented modeling and the use of a CASE tool. Both client/server and Web applications will be addressed. Cases are used as the vehicle for student assignments.

INFO 3440 Enterprise Database Development

3:3:0 F

Prerequisite(s): INFO 3410

Presents concepts and methods of defining, creating, and managing database systems using Oracle database technology. Includes information and transaction processing, security and integrity issues, and performance analysis. Complex databases supporting data driven applications will be designed and implemented. Also includes the study of distributed databases and the application of data warehousing/data mining tools in performing data analysis for decision making. Includes coverage of PL/SQL, Oracle Forms and Oracle Reports.

INFO 3510 System Administration - UNIX/Linux

3:3:0 F, Sp

Prerequisite(s): INFO 1510, (CNS 2600 or INFO 3030)

Explores enterprise systems administration using the UNIX/Linux operating system. Students learn advanced administrative tasks including server installation, network configuration and user management, file management, network services deployment, server security, back up and recovery, Shell scripting, source compilation, performance monitoring and tuning, troubleshooting, and managing hardware and component changes. Requires a project and presentation based on advanced server management skills.

INFO 3630 System Administration - Windows Server

3:3:0 F, Sp

Prerequisite(s): INFO 1510, INFO 3030

Explores enterprise systems administration using the Microsoft Windows Server operating system. Students learn advanced administrative tasks including server installation; hardware change management; software application management; network configuration and user management; file management; printing; network services deployment; server security; back up and recovery; scripting; performance monitoring, tuning, and troubleshooting. Requires a project and presentation based on advanced server management skills.

INFO 3660 Information Security II - Network Defense and Countermeasures

3:3:0 Sp

Prerequisite(s): INFO 2660, INFO 3030

Examines the tools, techniques and technologies used in the technical securing of information assets. Provides in-depth information on the software and hardware components of Information Security and Assurance. Topics include: firewall configurations, hardening UNIX and NT servers, Web and distributed systems security, and specific implementation of security models and architectures.

INFO 4030 Enterprise Network Architectures and Administration

3:3:0 On Sufficient Demand

Prerequisite(s): INFO 3660, INFO 3510 or INFO 3630

Addresses the problems associated with providing a secure, stable, reliable enterprise network infrastructure. Covers principles of IT enterprise infrastructure management, including platform choices, functionality, cost, security, deployment, controls, flexibility, and adaptability. Topics includes Directory Services, QoS, Security, Network Management, Voice over IP (VOIP) and IP Telephony, Content and Storage Networking, Wireless Networking, and fine-tuning of Routing Protocols, Switching Structures, and IP Multicast.

INFO 4050 Computer Ethics and Professional Practice

3:3:0 Sp

Prerequisite(s): INFO 3430

Studies the IS/IT profession and what it means to be a professional, covers various IS/IT management roles and responsibilities, reviews best practices in IS/IT management and operations, covers emerging IS/IT technologies and trends, studies ethical issues in business and IS/IT and helps students develop appropriate ethical behaviors and problem solving skills, helps students develop an excellent resume and understand the process of finding a career position

INFO 4410 Database Administration

3:3:0 On Sufficient Demand

Prerequisite(s): INFO 3440, INFO 3510 or INFO 3630

Presents the concepts and methods used to manage and maintain relational databases. Covers topics such as the effects on performance of application and database design, performance monitoring and management, approaches to tuning, storage management, backup and recovery and disaster planning. Discusses methods to accomplish administrative and maintenance tasks for organizations requiring uninterrupted operation. Utilizes a vendor neutral perspective; however, hands-on assignments provide students with opportunities to apply the knowledge gained in the course to one or more popular commercial database management systems.

INFO 4420 Web Systems Development II

3:3:0 Sp

Prerequisite(s): INFO 3420

Utilizes advanced enabling technologies for the design and development of enterprise-wide, Internet-based systems. Topics include Web Services, XML, and Service-Oriented Architectures (SOA).

INFO 4440 Software Acquisition, Implementation and Integration

3:3:0 Sp

Prerequisite(s): INFO 3430, INFO 4420

Builds on the concepts presented in Systems Analysis, Design and Integration. Evaluates the build vs. buy decision. Focuses on package acquisition through vendor identification, writing a request for proposal (RFP), evaluating proposals, and package evaluation and benchmarking. Studies the package implementation process including configuration and customization. Covers various integration approaches including Enterprise Resource Planning (ERP) systems and the use of enterprise application integration (EAI) methods and tools.

INFO 4460 Enterprise Database Architecture

3:3:0 On Sufficient Demand

Prerequisite(s): INFO 3440, INFO 3510 or INFO 3630

This course examines the benefits and challenges of installing and administering large, distributed, heterogeneous database systems supporting enterprise level applications such as data warehousing, data mining, SCM, CRM and ERP. The course will consider these applications from a theoretical perspective, an administrative and managerial perspective and from a practical, user-oriented perspective. The infrastructure requirements to support such applications will be studied. At least one enterprise level application will be installed and run during the class to give students direct experience with these systems. Students will prepare a research paper on some aspect of large scale database applications and present the findings from their research to the class.

INFO 4540 Senior Project I

3:3:0 F

Prerequisite(s): INFO 3430

This course has two parts. In the first part, the student develops the project management skills needed to initiate, plan, execute, manage, and close information technology projects. Topics include defining project goals, work breakdown structure, defining tasks,

project plans, estimation and scheduling techniques, work monitoring and measurement. A combination of theories, techniques, group activities, and computer tools such as Project Management, CASE and modeling software will be used to develop project plans. The technical and communication skills needed to manage inevitable change will be emphasized. In the second part, the student will apply the project management skills learned to the initial stages of a real world project.

INFO 4550 Senior Project II

3:3:0 Sp

Prerequisite(s): INFO 4540

This course is a continuation of Senior Project I. The student continues the implementation of a significant information systems or information technology project. The initial planning stages of the project should have been completed in Senior Project I. This course culminates in a presentation of the completed project by project developers to project stakeholders, interested faculty, and administration.

INFO 459R Current Topics in Information Systems and Technology

3:3:0 On Sufficient Demand

Prerequisite(s): Department Approval

Provides exposure to emerging technologies and topics of current interest in information systems and technology. Varies each semester depending upon the state of technology. May apply a maximum of six hours toward graduation.

INFO 4660 Security III - Computer Forensics

3:3:0 F

Prerequisite(s): INFO 3660, INFO 3510 or INFO 3630

Explores procedures for identification, preservation, and extraction of electronic evidence. Emphasizes auditing and investigation of network and host system intrusions, analysis and documentation of information gathered, and preparation of expert testimonial evidence. Examines forensic tools and resources for system administrators and information system security officers. Topics include ethics, law, policy, and standards concerning digital evidence. Lab experience and written research paper are required.

INFO 481R Internship

2-8:0:10-40 Su, F, Sp

Prerequisite(s): INFO 4540, Department Approval

For bachelor's degree students. Provides opportunities to apply classroom theory while students work as employees in a job that relates to their careers. Meet periodically with a Departmental Internship Coordinator. Credit is determined by the number of hours a student works during the semester and completion of individually set goals. Four credits may be applied toward a Bachelor of Science Degree in Information Systems or Information Technology. Graded credit or no-credit.

INFO 497R Independent Study

1-3:0:3-9 On Sufficient Demand

Prerequisite(s): Department Approval

For bachelor's degree students and other interested persons. Offers independent study as directed in reading, in individual projects, at the discretion and approval of the department chairperson. May be repeated for a maximum of 9 credits toward graduation.