

Informatics (INFO)

Courses

INFO 5307 Intermediate Systems Analysis and Design: 3 semester hours.

Provides a general understanding of the systems development life cycle and develops the analytical skills required to thoroughly understand a problem and formulate the optimal solution. Projects will require the student to use process modeling techniques to assist in the analysis and design process. Requirements gathering is emphasized. The analysis and design of web-based systems is included.

INFO 5380 Networking and Cybersecurity: 3 semester hours.

Study of the implementation and development of network information systems. Protocols and techniques will be compared. Cybersecurity defense and prevention will be evaluated through common cybersecurity frameworks such as NIST and AICPA. Enterprise Network infrastructure, including cloud computing will be introduced. Specific evaluated graduate-level activities and/or performances are identified in the course syllabus.

INFO 5417 Statistical Methods for Data Analytics: 3 semester hours.

Encompasses data visualization, descriptive data analysis, ANOVA approaches, correlation and multiple regression and additional modeling topics. Emphasis will be based upon appropriate interpretation of statistical results. All data will include a business or health care context to acquaint students with current statistical practice.

INFO 5507 Database Design and Implementation: 3 semester hours.

Covers multi-user relational database management systems, stored procedures, SQL, transaction processing, etc. The course emphasizes Secure Software Design, which includes secure design elements, software architecture, secure design review, and threat modeling. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PRE-or-COREQ: INFO 5307.

INFO 5511 Intermediate Information Assurance: 3 semester hours.

Focuses on homeland security, information assurance, integrity, control, and privacy. Covers CNSS-4011, national policy, and international treaties. The course considers Access Control, Application Security, Business Continuity and Disaster Recovery Planning, Cryptography, Information Security and Risk Management, Legal, Regulations, Compliance and Investigations, Operations Security, Physical (Environmental) Security, Security Architecture. Includes security issues around steady state operations and management of software, as well as security measures taken when a product reaches its end of life. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PREREQ: INFO 2285 or CS 2275 or INFO 3310, or permission of instructor.

INFO 5512 Systems Security for Senior Management: 1-3 semester hours.

Review of system architecture, system security measures, system operations policy, system security management plan, and provisions for system operator and end user training. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. COREQ: INFO 5519. PREREQ: INFO 5511, INFO 5513, INFO 5514, INFO 5515, and INFO 5516 or permission of instructor.

INFO 5513 Systems Security Administration: 1-3 semester hours.

Outlines the basic principles of systems security administration. The student will be introduced to the methods and technologies associated with running a system to maintain privacy and security. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. COREQ: INFO 5519. PREREQ: INFO 5511 or permission of instructor.

INFO 5514 Systems Security Management: 1-3 semester hours.

Establishes a framework for managing both systems and systems administrators operating in a secure and private computing environment. The course deals with facilities management, contingency plans, laws, standards of conduct and operations management. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. COREQ: INFO 5519. PREREQ: INFO 5511 and INFO 5513 or permission of instructor.

INFO 5515 System Certification: 1-3 semester hours.

Describes techniques and methods for certifying a system is in compliance with national and governmental information assurance standards. Evaluates various certification methodologies. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. COREQ: INFO 5519. PREREQ: INFO 5511, INFO 5513, and INFO 5514 or permission of instructor.

INFO 5516 Risk Analysis: 1-3 semester hours.

Develops techniques to characterize and provide perspective on the likelihood of adverse events. Explains methods to characterize the consequences and general costs associated with the various adverse events occurring. The analysis provides insights into various likelihood and consequence combinations. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. COREQ: INFO 5519. PREREQ: INFO 5511, INFO 5513, INFO 5514, and INFO 5515 or permission of instructor.

INFO 5517 Information Assurance Engineer: 1-3 semester hours.

Focuses on the practical application of systems design and engineering principles and processes to develop secure systems. Topics include analysis of organizational needs, definition of security requirements, designing systems architectures, developing secure designs, implementing system security, and support of systems security assessment/authorization for organizations. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PREREQ: INFO 5511, INFO 5513, INFO 5514, INFO 5515, and INFO 5516.

INFO 5519 Advanced Informatics Practicum: 1-3 semester hours.

Significant informatics experience including research coordinated by the faculty designed to provide broad exposure to issues in Information Assurance. Does not fulfill major/minor requirements. May be repeated for up to 6 credits. Graded S/U. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PREREQ: Permission of instructor.

INFO 5530 Web Application Development: 3 semester hours.

Focuses on the development of dynamic, online applications using a programming language like PHP or ASP.Net and a relational database. The course will consider Secure Software Implementation/Coding, which involves secure coding practices, avoiding vulnerabilities, and reviewing code to ensure that there are no errors in the code or security controls. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PREREQ: INFO 3307

INFO 5532 Mobile Application Development: 3 semester hours.

This course will introduce mobile app programming and provide theoretical and practical knowledge to design and build mobile applications. Students will learn various techniques in mobile app development using a programming language like Java. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PREREQ: INFO 1182.

INFO 5571 Computer Forensics Essentials: 1-3 semester hours.

Introduction to issues of both in data privacy and computer forensics - using available tools, learners can reveal the stored passwords on their computer and access previously deleted data. Explains the role of computer forensics in both the business and private world, identifies the current techniques and tools for forensic examinations; describes and identifies basic principles of good professional practice for a forensic computing practitioner; develops familiarity with forensic tools and application in different situations. Risk exposure for electronic commerce businesses; offenders and abuses; criminal opportunities; evidential aspects, case studies, E-discovery, forensic readiness corporate planning and response, from evidence collection to business continuity; testing vulnerabilities; reverse engineering. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PREREQ: INFO 5507 and INFO 3380 or permission of instructor.

INFO 5572 Cloud Security Essentials: 1-3 semester hours.

Cloud computing provides for distributed computing and data storage capabilities. Instead of buying large servers to store data and being saddled with the cost of building and maintaining those systems, users can now purchase those servers from a third party with the ability to expand or contract those needs as necessary. This course will look at current research results in cloud security in order to identify opportunities for continued research in this field. PREREQ: INFO 5507 and INFO 3380 or permission of instructor.

INFO 5573 Continuous Monitor, Intrusion Analysis, Response: 1-3 semester hours.

Using principles continuous monitoring and baselines, develop knowledge and understanding of the strategies, techniques, and technologies used in attacking and defending networks and how to design secure networks and protect against intrusion, malware and other hacker exploits. Introduces methods of attacking and defending a network; design of secure information infrastructure; servers, networks, firewalls, workstations, and intrusion detection systems. Intrusion detection and network monitoring techniques; worms, viruses and other malware; operation, detection and response; principles of penetration testing for assessment of system security; hacker exploits, tools and countermeasures. Investigative techniques, ethical, legal and privacy issues. PREREQ: INFO 5507, INFO 5511, and INFO 3380 or permission of instructor.

INFO 5574 SCADA Management and Lab: 1-3 semester hours.

Supervisory control and data acquisition systems are used to control many utility networks, chemical plants, pipelines and many other types of industries. This course will examine the vulnerabilities associated with these systems and discuss how they can be made secure from outside attack. Fundamentals of software-controlled processes will also be discussed. PREREQ: INFO 5511, INFO 5507, and INFO 3380 or permission of instructor.

INFO 5582 Systems Development and Implementation Methods: 3 semester hours.

This course presents the process of software development and the methodologies to lower development costs, increase software reliability, decrease development time and ensure application development success. An overview and comparison of traditional and modern methods of software development are presented. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PREREQ: INFO 5507.

INFO 5584 Secure Software Life Cycle Development: 3 semester hours.

In today's interconnected world, security must be included within each phase of the software lifecycle. This course contains the largest, most comprehensive collection of best practices, policies, and procedures to ensure a security initiative across all phases of application development, regardless of methodology. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus.

INFO 5585 Data Visualization.: 3 semester hours.

This course will focus on visualizing data using a variety of tools. The course will help each student develop competency in critical thinking, analysis, and writing results. The course will focus on using Tableau to develop appropriate displays of data. This will involve learning new software and telling a story with your data. The course will also focus on location analytics using ArcGIS Online, Business Analyst Online, and Community Analyst Online. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus.

INFO 5586 Data Analytics: 3 semester hours.

Provides an overview of the fundamentals of analysis to support decision makers in achieving organizational results. Students become familiar with the tools needed to frame problems, analytical techniques to generate and test hypotheses, and the skills to interpret the results into meaningful information. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PREREQ: MGT 2217.

INFO 5587 Software Systems Study: 3 semester hours.

In addition to system optimization techniques, management strategies will be discussed. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PREREQ: INFO 3307.

INFO 5591 Seminar in Informatics: 3 semester hours.

Reading, discussion, and reporting on selected topics. May be repeated for up to 6 credits with permission of instructor. Specific, evaluated graduate-level activities and/or performances are identified in the course syllabus. PREREQ: Graduate status in Business and permission of instructor.

INFO 5592 Special Problems in Informatics: 1-3 semester hours.

Research and reports on problems or topics in informatics. May be repeated for up to 9 credits with different content. PREREQ: Graduate status in Business and permission of the Chair.

INFO 5593 Informatics Internship: 1-3 semester hours.

Significant business experience coordinated by the faculty to provide broad exposure to informatics issues. Letter grade assigned. May be repeated for a total of 3 credits.

INFO 5599 Experimental Course: 1-6 semester hours.

The content of this course is not described in the catalog. Title and number of credits are announced in the Class Schedule. Experimental courses may be offered no more than three times with the same title and content. May be repeated.

INFO 6610 Advanced Information Assurance: 3 semester hours.

Network and IS security issues, risk assessment, technological, and procedural security measures; computer fraud and privacy issues; hacker attacks, phone fraud, denial of service, and virus and worm attacks; laboratory and professional practice.

INFO 6620 Advanced Systems Analysis and Design: 3 semester hours.

This course builds on basic system analysis and design concepts including distributed systems analysis and design. Use cases, quality assurance, and performance metrics are investigated. The course will also introduce students to some of the most significant trends, issues, and research results in system analysis, architecture, and design.

INFO 6630 Advanced Data Management: 3 semester hours.

This course builds on basic database design and implementation concepts. New developments in database technology are discussed. Students examine the impact of emerging database standards and evaluate the contribution of new approaches to practical implementations of data management. PREREQ: INFO 5507.

INFO 6640 Advanced Data Analytics: 3 semester hours.

This course covers advanced analytical techniques and methods designed to resolve key management issues. Students will learn to resolve issues involving risk and sensitivity and learn to identify patterns of performance, working toward a goal of recognizing insights into the data that will support good decision making. Students may work with a large dataset to convert it to meaningful information by using the analytical tools learned in class.

INFO 6650 Thesis: 1-6 semester hours.

1-6 credits. Graded S/U. May be repeated.

INFO 6660 Informatics Project: 1-3 semester hours.

A significant project involving informatics toward the completion of the M.S. program with non-thesis option. Includes a report and oral examination. Graded S/U. May be repeated.

INFO 6670 Management of Informatics Projects: 3 semester hours.

This course provides an informatics orientation for project management. Students learn techniques for planning, organizing, scheduling, and controlling informatics projects, including software cost estimation and software risk management. Establishing project communications, change management, quality assurance, and managing distributed software teams and projects are among the topics discussed.

INFO 6699 Experimental Course: 1-6 semester hours.

The content of this course is not described in the catalog. Title and number of credits are announced in the Class Schedule. Experimental courses may be offered no more than three times with the same title and content. May be repeated.