

Informatics (INFO)

Courses

INFO 1100 Fundamental Computer Literacy: 3 semester hours.

Use of basic productivity software. Includes familiarization with word processing, presentations, spreadsheet, Internet. D

INFO 1101 Digital Information Literacy: 3 semester hours.

Focuses on how to locate, evaluate, and utilize information using digital resources, i.e., computers, mobile devices, and the Internet. As such, the course begins by establishing a common model of computing that will help to understand current technologies, from cell phones to supercomputers, as well as future computing technologies. The course then investigates how best to use those tools to properly identify, collect, evaluate, synthesize, and present information. Satisfies Objective 8 of the General Education Requirements. F, S

INFO 1110 Web Development: Essentials: 3 semester hours.

Introduction to the fundamentals of web site creation. Students will develop, manage, and maintain professional web sites using HTML5 and Cascading Style Sheets, and explore web site design and layout, accessibility, and globalization issues. D

INFO 1150 Software and Systems Architecture: 3 semester hours.

Principles and application of computer hardware and systems software in the context of designing business IT infrastructures through combination of theory-based lectures and applied laboratory experiences. COREQ: INFO 1181/CS 1181. D

INFO 1181 Informatics and Programming I: 3 semester hours.

Problem-solving methods and algorithm development with an emphasis on programming style with Java or C#. Includes Secure Software Concepts, such as what constitutes secure software and what design aspects to take into consideration to construct resilient software. Equivalent to CS 1181. Satisfies Objective 7 of the General Education Requirements. PRE-or-COREQ: MATH 1143 or MATH 1147. F, S

INFO 1199 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 2220 Web Development: Client-Side Programming: 3 semester hours.

Introduces interactive web development using a client-side language like JavaScript. Exercises are designed to enhance students' problem-solving techniques and analytical thinking skills. PREREQ: CS 2281. D

INFO 2299 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 3303 Informatics Concepts: 3 semester hours.

A survey course to introduce basic informatics principles, theories, and technology to non-business students. D

INFO 3307 Systems Analysis and Design: 3 semester hours.

Develops systems analysis skills using proven techniques, prototyping, and structured analysis and design phases of the systems development life cycle. The course emphasizes Secure Software Design, which includes secure design elements, software architecture, secure design review, and threat modeling. Requirements gathering is emphasized, including secure software requirements gathering to capture all of the security requirements from various stakeholders and understand the sources and processes needed to ensure a more effective design. Equivalent to CS 3321. PREREQ: INFO 1181/CS 1181 or INFO 3303 or CS 3309, all with a C- minimum grade. D

INFO 3310 Introduction to Information Assurance: 3 semester hours.

A survey course providing an introduction to the fields of Information Assurance and Privacy. Emphasizes legal and ethical components of information security practices. The course is designed primarily for non-INFO majors. Not applicable toward INFO major. D

INFO 3320 Data Mining and Predictive Analytics: 3 semester hours.

Course that includes topics from major areas of business use of data analytics: modeling, predictive analytics, and data mining. The course will also include discussion of data warehousing and data cleaning. Using software, students will be expected to do case work with data providing an executive summary with supporting statistical analyses for business decision making. PREREQ: INFO 1181/CS 1181 and BA 3316 and MGT 2217, all with a C- minimum grade. D

INFO 3380 Networking and Virtualization: 3 semester hours.

Study of the implementation and development of network information systems. Protocols and techniques will be compared, and virtualization and cloud computing will be emphasized. PREREQ: INFO 1150 or INFO 3303 or CS 1337 or CS 3309. D

INFO 3393 Informatics Internship: 1-3 semester hours.

Internship program coordinated by faculty providing significant exposure to INFO issues. May not be used to fulfill major requirements. Graded S/U. F, S

INFO 3399 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 4150 Information Systems and Controls: 3 semester hours.

Principles and applications of computer hardware and systems software in the context of designing business IT Infrastructure. IT Governance, Risk Assessment, Change Management, and Application Controls will also be analyzed.

INFO 4380 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.

INFO 4407 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. PREREQ: INFO 1181/CS 1181. D

INFO 4411 Intermediate Information Assurance: 3 semester hours.

Focuses on homeland security, information assurance, integrity, control, and privacy. Covers CNSS-4011, NIST-800-16 standards, national policy, and international treaties. The course considers Software Deployment, Operations, Maintenance and Disposal, including security issues around steady state operations and management of software, as well as security measures that must be taken when a product reaches its end of life. PREREQ: INFO 1150 or CS 1337 or INFO 3310, or permission of instructor. D

INFO 4412 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. COREQ: INFO 4419. PREREQ: INFO 4416 or permission of instructor. D

INFO 4413 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. COREQ: INFO 4419. PREREQ: INFO 4411 or permission of instructor. D

INFO 4414 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. COREQ: INFO 4419. PREREQ: INFO 4413 or permission of instructor. D

INFO 4415 System Certification: 1-3 semester hours.

Describes the techniques and methods for certifying a system is in compliance with national and governmental information assurance standards. Evaluates various certification methodologies. COREQ: INFO 4419. PREREQ: INFO 4414 or permission of instructor. D

INFO 4416 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 insight into various likelihood and consequence combinations. COREQ: INFO 4419. PREREQ: INFO 4415 or permission of instructor. D

INFO 4419 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. PREREQ: Permission of instructor. D

INFO 4430 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. PREREQ: INFO 2220. PRE-or-COREQ: INFO 4407. D

INFO 4432 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. D

INFO 4480 Systems Administration and Cloud Computing: 3 semester hours.

Modern systems administration technologies will be explored throughout the course. Techniques will include: cloud computing, virtualization, data management, and end user experience. Current best practices for management IT professionals will be emphasized.

INFO 4482 Systems Development and Implementation Methodologies: 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. PREREQ: INFO 4407 or CS 4451. PRE-or-COREQ: INFO 4430 D

INFO 4484 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. PREREQ: INFO 4482. D

INFO 4485 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 using your data. The course will also focus on location analytics using ArcGIS Online, Business Analyst Online, and Community Analyst Online. PREREQ: BA 3316 and INFO 3320, both with a C- minimum grade. D

INFO 4486 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. PREREQ: MGT 2217. D

INFO 4487 Software Systems Study: 3 semester hours.

In addition to system optimization techniques, management strategies will be discussed. PREREQ: INFO 3307. D

INFO 4488 Informatics Senior Project: 3 semester hours.

Provides the knowledge and tools necessary to develop a physical design and an operational computerized system in a secure environment. 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. It will also cover Secure Software Testing, including integrated software testing for security, functionality, reliability, resiliency to attack, and recoverability. Software Acceptance will also be considered, such as reviewing security implications in the software acceptance phase including completion criteria, risk acceptance, and documentation, common criteria, and methods of independent testing. PREREQ: INFO 4407; and INFO 4430 or INFO 4487 or CS 3337. D

INFO 4491 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. PREREQ: Senior status in Business and permission of instructor. D

INFO 4492 Special Problems in Informatics: 1-3 semester hours.

Research and reports on problems or topics in business informatics. Each project may be taken between 1-3 credits. May be repeated for up to 9 credits with different content. PREREQ: Senior status in Business and permission of the Chair. D

INFO 4493 Advanced Informatics Internship: 3 semester hours.

Significant business experience coordinated by the faculty to provide broad exposure to informatics issues. Letter grade assigned. F, S

INFO 4499 Experimental Course: 1-6 semester hours.

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