

INFORMATION SYSTEMS (ISC) (ISC)

ISC 190 IS Special Topics 1 cr

Selected topics in information systems. Prerequisite: Permission of the ISC coordinator.

ISC 245 Info Systems in Organizations 3 cr

An overview of information systems topics from an organizational and managerial perspective. Topics include current information technology and systems, such as the Internet and its organizational impacts; the emergence of global economy and digital firms; and the ethical and social impacts of information systems, such as privacy, intellectual property rights, and liability. Issues and strategies regarding information systems planning, systems development, decision making, and using IT for competitive advantage are discussed. Throughout the course, students will investigate the strategic uses of information technology in current industry-specific situations.

ISC 272 Systems Architecture 3 cr

This course introduces students to Information Technology hardware and systems software concepts. Topics include: computer hardware, operating systems, system software, hardware and software integration, operating procedures, system performance, security/safety, and compatibility. Student labs and hands-on activities will include: Windows, Unix, and Linux systems, system utilities and software tools. Credit cannot be received for both ITE 272 and ISC 272.

Prerequisite: CIS 115 Minimum Grade of C

Cross-Listed: ITE 272

ISC 285 Intermediate Programming 3 cr

A second course in visual, event-driven programming that builds on CIS 115. Topics include functions and procedures, arrays, LINQ, structures, text files, structured exception handling, additional controls and objects, and object-oriented programming. Programming projects are required. Credit cannot be received for both ISC 285 and ITE 285.

Prerequisite: CIS 115 Minimum Grade of C

Cross-Listed: ITE 285

ISC 300 Health Informatics Clin Env 3 cr

This course provides an overview of concepts, terms, organization, and processes associated with patient care and clinical environments as they pertain to health informatics. The entire process of how a person accesses, moves within, and exits the system both as an inpatient and outpatient to obtain care. Students will observe and report on a variety of clinical settings and healthcare specializations throughout the semester. This course is designed for students with no prior clinical experience.

ISC 305 Info Systems-Technology 3 cr

The analysis, design, and implementation of information systems. Analysis of the functional areas of business and integration of computer tools to satisfy information requirements. Current development in business computer systems, including surveys of current systems and the Internet. Computer classrooms are utilized to provide students with "hands on" experience.

Prerequisite: CIS 250 Minimum Grade of C

ISC 310 Health Informatics 3 cr

This course provides an overview of the concepts, terms, tools, and architectures associated with health informatics as applied to healthcare delivery. Topics include: electronic record systems, computerized physician order entry, health system standards, terminologies, workflow modeling, security and privacy of clinical data, clinical reporting, and the impact of information technology use on the quality and efficiency of health care delivery and outcomes. ISC 300 is a corequisite for students with no prior clinical experience.

ISC 353 Info Sys Appl Development 3 cr

This course provides an accelerated approach to programming in a high-level, object-oriented language, especially for information systems. Coverage includes algorithmic problem solving, fundamentals of programming, procedures, decisions, repetition, arrays, files, exception handling, and object-oriented programming. The format for this course is lecture/lab. The instructor will demonstrate in class, and students will learn by doing homework problems and programming assignments. This course does not count towards a graduate degree in CIS. Some prior programming experience is desired and permission of Coordinator. Prerequisites: Math placement score of 65 or higher.

Prerequisite: University test - Math 65 or DS 090 Minimum Grade of C or (MA 112 Minimum Grade of C or MA 171 Minimum Grade of C)

ISC 360 Info Sys Analysis and Design-W 3 cr

A thorough examination of the analysis and design of computer information systems from the systems analysts view. The course will use an established software development methodology. At each step in the software development life cycle, both the methodologies used and the documentation required will be examined.

Prerequisite: ISC 245 Minimum Grade of C and (EH 102 Minimum Grade of C or EH 105 Minimum Grade of C)

ISC 361 Database for Info Systems 3 cr

The course builds on relational database and programming concepts by exploring the analysis, design, and implementation of more complex database systems. Topics include advanced data modeling, advanced query design, and application development in a database programming environment. Credit cannot be received for both ITE 370 and ISC361.

Prerequisite: CIS 324 Minimum Grade of C and (ISC 285 Minimum Grade of C or ITE 285 Minimum Grade of C)

Cross-Listed: ITE 370

ISC 362 IS Object-Oriented Analy-Des 3 cr

This course provides an introduction to an object-oriented analysis and design (OOAD) methodology as well as the tools and techniques for supplementing this methodology. The course will also cover the use of notational metalanguages such as Unified Modeling Language (UML) and OOAD computer-assisted software engineering (CASE) tools.

Prerequisite: ISC 245 Minimum Grade of C

ISC 410 Health Informatics 3 cr

This course provides an overview of the concepts, terms, tools, and architectures associated with health informatics as applied to healthcare delivery. Topics include: electronic record systems, computerized physician order entry, health system standards, terminologies, workflow modeling, security and privacy of clinical data, clinical reporting, and the impact of information technology use on the quality and efficiency of health care delivery and outcomes.

ISC 450 Health Sys Analysis and Design 3 cr

This course provides an overview of the concepts, terms, tools, and architectures associated with health informatics as applied to healthcare delivery. Topics include: electronic record systems, computerized physician order entry, health system standards, terminologies, workflow modeling, security and privacy of clinical data, clinical reporting, and the impact of information technology use on the quality and efficiency of health care delivery and outcomes.

Prerequisite: ISC 410 Minimum Grade of C

ISC 455 Health Data Mgt Decision 3 cr

This course focuses on the design and management of electronic medical record systems and clinical decision support systems. Course content related to electronic medical record systems includes architectural components, technical design issues, and management; and, content related to clinical decision support systems includes decision support roles, extracting useful information from data, and legal and regulatory restrictions. Laboratory assignments will provide students with opportunities to interact with these systems.

Prerequisite: ISC 410 Minimum Grade of C

ISC 457 Data Ware-Decision Support 3 cr

This course examines the analysis and design issues as well as the architectural infrastructures associated with enterprise data warehouses for decision support. Prerequisites: CIS 324.

Prerequisite: CIS 324 Minimum Grade of C

ISC 459 IS Appl Design-Implementation 3 cr

Analysis and design of information systems to support multiple locations via Intranet/Internet access. Additional and supporting topics, such as corporate privacy and security are also covered.

Prerequisite: CIS 324 Minimum Grade of C

ISC 462 IS Strategy and Policy 3 cr

This course provides the top management, strategic perspective for aligning competitive strategy with information systems. Issues include the development and implementation of policies and plans to achieve organizational goals, including security policy.

Prerequisite: CIS 324 Minimum Grade of C

ISC 463 IS Database Admn and Security 3 cr

An examination of the issues and activities associated with the administrator function for databases. This course will cover installation, implementation, user management, backup, and security.

Prerequisite: CIS 324 Minimum Grade of C

ISC 464 IS Security and Risk Mgmt 3 cr

This course provides an introduction to the fundamental principles and topics of information systems security and risk management at the organizational level. This course views information security as a management issue that incorporates technical and management solutions. Topics include risk management, security policy, disaster planning, security law and ethics, and security education, training and awareness.

Prerequisite: (MGT 300 Minimum Grade of C or MGT 322 Minimum Grade of C) and (CIS 321 Minimum Grade of C or CIS 221 Minimum Grade of C)

ISC 467 Enterprise Information Systems 3 cr

This course provides an introduction to enterprise information systems and to business process modeling. Key concepts and techniques for identifying, designing, and documenting business processes will be presented. The way information technology can be used to manage, transform business processes is discussed. Successful organizational change strategies will be reviewed.

Prerequisite: (MGT 300 Minimum Grade of C or MGT 322 Minimum Grade of C) and CIS 324 Minimum Grade of C

ISC 472 Advanced Data Management 3 cr

This course provides an introduction to the concepts and technologies of big data. Key concepts and techniques allow organizations to analyze structured and unstructured data/information collected from transaction processing systems, data warehouses, and distributed systems. The ultimate purpose of descriptive, predictive, and prescriptive analytics is to support high quality decision support for executives and managers. Concepts of data mining, data storage, non-relational platforms, and considerations for new and emerging technologies are described in detail.

Prerequisite: (CIS 324 Minimum Grade of C or CSC 324 Minimum Grade of C) and (ISC 285 Minimum Grade of C or ITE 285 Minimum Grade of C or CSC 231 Minimum Grade of C)

ISC 475 Info Systems Proj Management 3 cr

This course examines the principles and techniques of project management from an information systems perspective. Major topics covered include project context, project selection, and project planning. Students work in collaborative teams and are instructed in the use of a project software tool. Credit cannot be received for both ITE 475 and ISC 475.

Prerequisite: CIS 324 Minimum Grade of C

Cross-Listed: ITE 475

ISC 490 Special Topics 3 cr

Advanced selected topics in information systems. Prerequisite: Permission of the ISC Coordinator.

ISC 501 Programming for IS 3 cr

This course covers programming concepts required by Information Systems professionals to provide a solid foundation for building applications. Coverage includes: data types, decision structures, repetition structures, graphical user interfaces (GUI), methods, arrays, files, and object oriented programming (OOP) concepts.

ISC 507 IS Database Processing 3 cr

Analysis, design and implementation of database systems for IS professionals. Coverage includes DBMS models, E-R modeling, normalization concepts, and the use of queries for processing data.

ISC 510 Health Informatics 3 cr

This course provides an overview of the concepts, terms, tools, and architectures associated with health informatics as applied to healthcare delivery. Selected research topics are introduced and independently studied. Topics include: electronic record systems, computerized physician order entry, health system standards, terminologies, workflow modeling, security and privacy of clinical data, clinical reporting, and the impact of information technology use on the quality and efficiency of health care delivery and outcomes. Prerequisite: Permission of the Director of CI Graduate Studies.

Prerequisite: CSGR Prof Component Eligible P

ISC 516 AI Theory and Programming 3 cr

Introduction to basic concepts, implementation techniques, and philosophies of artificial intelligence and intelligent systems. Introduction to expert systems, fuzzy logic systems, neural networks, and techniques for artificial intelligence programming. The fundamentals of an AI programming language (LISP or PROLOG) will be presented. The language will then be used to solve problems in typical AI applications. Prerequisite: Graduate Professional Component Standing.

Prerequisite: Computer Science Graduate 030

ISC 545 Management Information Systems 3 cr

This course provides an overview of information systems from an organizational, managerial, and technical perspective. The topics covered will focus on the strategic role of information systems and information technology in business processes, change and knowledge management, group and individual decision-making, and electronic commerce. Specific topics include current hardware, infrastructure and connectivity technologies, software and systems development methodologies. Internet-based applications, management challenges and opportunities created by information systems and global connectivity such as privacy, data and systems security and control, intellectual property, ethical and social consequences of information technology, and the impact of digital integration on an organization's competitiveness, products, services, procedures, and management structures. Prerequisite: Permission of the Director of CIS Graduate Studies.

Prerequisite: CSGR Prof Component Eligible P

ISC 550 Health Data Security & Comp 3 cr

This course involves a thorough examination of the security and privacy requirements of the Health Insurance Portability and Accountability Act (HIPAA) and the implementation of these requirements in the clinical environment. Students will learn how to address security development all the way through post-implementation, how to evaluate systems for vulnerabilities, and how to identify protected health information and covered entities.

Prerequisite: CSGR Prof Component Eligible P

ISC 551 Human-Comp Interface Design 3 cr

The course covers principles, guidelines, and methods in human computer interface design. Students complete a project involving the development, evaluation, and demonstration of a user interface. The interface is designed around a user and task analysis performed on a given problem. Students plan and conduct a usability study of a working prototype and report on results and recommendations. Prerequisite: Graduate Professional Component.

Prerequisite: (CIS 501 Minimum Grade of B and CIS 507 Minimum Grade of B)

ISC 553 IS Web Site Management 3 cr

This course addresses the design, development, and management of a web server. Topics include the selection, installation, and configuration of an operating system and web server software, web server security and monitoring, and website maintenance. Prerequisites: Graduate Professional Component.

Prerequisite: CSGR Prof Component Eligible P

ISC 555 Health Data Mgt/Decision Supp 3 cr

This course focuses on the design and management of electronic medical record systems and clinical decision support systems. Course content related to electronic medical record systems includes architectural components, technical design issues, and management; and, content related to clinical decision support systems includes decision support roles, extracting useful information from data, and legal and regulatory restrictions. Laboratory assignments will provide students with opportunities to interact with these systems.

Prerequisite: CSGR Prof Component Eligible P

ISC 557 Data Ware-Dec Support Systems 3 cr

This course examines the analysis and design issues as well as the architectural infrastructures associated with enterprise-wide data warehouses. Prerequisite: CIS Graduate Professional Component.

Prerequisite: Computer Science Graduate 030

ISC 559 IS App Design-Implementation 3 cr

Analysis and design of information systems infrastructures to support multiple locations, intranet/internet access, corporate privacy, and security. Capacity analysis and planning, installation, performance monitoring, and problem solving strategies. Prerequisites: Graduate Professional Component.

Prerequisite: (ISC 501 Minimum Grade of B and ISC 561 Minimum Grade of B)

ISC 560 Info Systems Analysis-Design 3 cr

This course will include an introduction to the systems development life cycle as well as a survey of analysis and design techniques. Detail topics will include information systems planning and project identification and selection, requirements collection and structuring, process modeling, data modeling, design of interface and data management, system implementation and operation, system maintenance, and change management implications of systems. Globalization issues in systems will also be discussed. Students will use current methods and tools such as rapid application development, prototyping, and visual development.

Prerequisite: Graduate Professional Component

Prerequisite: CSGR Prof Component Eligible P

ISC 561 IS Database Management 3 cr

An introduction to database management systems. The data environment, basic technical concepts and systems resources, database concepts, including use and management of databases. Classical and current DBMS models will be presented. Laboratory project activity will involve definition, creation, and development of a database. Prerequisites: Graduate Professional Component.

Prerequisite: (ISC 507 Minimum Grade of B)

ISC 562 IS Policy and Strategy 3 cr

This course provides the top management, strategic perspective for aligning competitive strategy, core competencies, and information systems. Issues include the development and implementation of policies and plans to achieve organizational goals, including defining systems that support the operational, administrative, and strategic needs of the organization, its business units, and individual employees. Prerequisites: Professional Component

Prerequisite: CSGR Prof Component Eligible P

ISC 563 IS Database Administration 3 cr

This course will examine the issues and activities associated with the administrator function for organizational databases. Topics include storage and indexing, query evaluation, physical database design, crash recovery, and security. Prerequisite: CIS Graduate Professional Component.

Prerequisite: CSGR Prof Component Eligible P

ISC 565 IS Project-Change Management 3 cr

A study of the concepts and techniques of project management from an information systems perspective. The course provides an overview of project lifecycle activities, and a focus on managerial, behavioral, and process issues that surround the dynamic context of systems development. The issue of managing the change brought about by the introduction or modification of information systems in organizations will be discussed. Students will be instructed in the use of software tools for project management. Prerequisites: Graduate Professional Component.

Prerequisite: CSGR Prof Component Eligible P

ISC 567 IS Function Integration 3 cr

The tactical/operational responsibilities and roles of the CIO. Governance considerations that link the IS-business organizations. Current/emerging issues in creating and coordinating the key activities necessary to manage the day-to-day operations of the IS function. Coordinating skills and organizational IS infrastructure.

Prerequisite: (ISC 501 Minimum Grade of B and ISC 561 Minimum Grade of B)

ISC 568 IS Enterprise Integration 3 cr

Information systems role in transforming organizations and industries. An integrated view of the organization from an external and internal perspective. IS' internal role in integrating the enterprise through a cohesive set of business processes and functional applications to meet business needs. Enterprise resource planning and enterprise functionality. Collaborative systems. Consideration of external relations with suppliers, outsourcers, and customers. Prerequisite: Graduate Professional Component.

Prerequisite: ISC 567 Minimum Grade of B and CSGR Prof Component Eligible P

ISC 572 Advanced Data Management 3 cr

The focus here is on the management of data and the technologies which specifically targets mass data storage with a view to online and after-the-fact examination of data to acquire new insights. The major topics include: data warehouse planning, data warehouse models, and supporting software, data mining concepts and tools, creation of data mining models for the tools and matching the tool to the task.

Prerequisite: CIS Graduate Professional Component

Prerequisite: CSGR Prof Component Eligible P

ISC 590 IS Sp Top - 3 cr

Advanced selected topics in information systems. Prerequisite: Permission of ISC coordinator.

Prerequisite: CSGR Prof Component Eligible P

ISC 595 IS Project Proposal Develop 1-3 cr

Development of the project proposal for the Information Systems specialization master's project. Prerequisites: CIS 518, Graduate Professional Component, Permission of Director of CIS Graduate Studies.

Prerequisite: CIS 518 Minimum Grade of S

ISC 598 Information Systems Project 1-3 cr

This course may be repeated for a maximum of six (6) credits. A CIS project committee will provide direction during the project. Prerequisite: Approval of project proposal by the student's project committee, and permission by Director of CIS Graduate Studies.

Prerequisite: (ISC 595 Minimum Grade of B and CS ISC Project P)

ISC 629 Comp Ecosystems 3 cr

This course focuses on developing expertise and preparation for independent research in computing ecosystems through an in-depth review of the computing literature. The course will explore concepts and issues associated with large scale parallel data processing, virtualized storage, application, and infrastructure architectures and the attendant security, privacy and legal issues.

ISC 673 Digital Investigations 3 cr

This course focuses on developing expertise and preparation for independent research in Digital Forensics Investigations through an in-depth review of the Digital Forensics literature. The student will be conversant in broad issues and trends in Digital Forensics as defined by skill sets and occupations.

ISC 675 Information Systems 3 cr

This course focuses on developing expertise and preparation for independent research in information systems through an in-depth review of the information systems literature. The course will explore the current major streams of theory, research, and methodologies in information systems.

ISC 686 Risk Analysis 3 cr

This course focuses on developing expertise and preparation for independent research in risk analysis through an in-depth review of the risk assessment and information assurance literature. The student will be conversant in broad issues and trends in risk analysis as defined by techniques, methodologies, policies, frameworks, and skill sets.