**Information Systems**

**Overview**

Information Systems aims to create efficient management of information within organizations in order to establish processes that are most beneficial to the users who interface with that group. Information Systems students study the interface between organizations, people and technology. Careers for Information Systems students include working with companies in the private and public sectors with the goal being to align information technology with business strategies. Many students pursue graduate education in business. Information Systems majors often choose to pursue a Master's in Information Systems.

*These course offerings are subject to change. Please meet with your Assigned Advisor frequently to verify.*

**Information Systems Major Courses**

Information Systems majors must take OIS 3440, five required IS courses, and either IS 4470 or IS 4480. Students must also complete two Global Perspectives courses, one of which must be OIS 5620, and a second which can be any university international course (IR). Please note that the course offerings listed below are typically offered in the semester indicated. However, these are subject to change.

- **IS 4415 – Data Structures & Java** This course introduces object-oriented computer programming to students using the Java programming language. Introductory topics such as variables, control-flow statements, and basic Java syntax are discussed. In addition to single-value data structures, the course covers lists, sets, hash tables, trees, and graph data structures. Algorithms for searching, sorting, and clustering data in the various structures are also covered.  
  *(Fall, Spring, Summer)*

- **IS 4420 – Database Fundamentals** This course introduces students to topics in database theory and design. Topics progress from conceptual modeling using entity-relationship diagrams (ERDs) to logical modeling where data tables are normalized and keys defined to the creation of the tables and the querying of the data using structured query language (SQL). SQL topics covered include aggregates, embedded queries, and joins.  
  *(Spring, Summer)*

- **IS 4430 - Process Analysis & IS Project Management** This course examines the field of information system analysis, analysis tools, and the procedures for managing information system analysis projects. Topics covered include the role of the systems analyst in organization; concepts, philosophies, and trends in systems analysis and design; and tools and techniques for such analysis activities.  
  *(Spring, Summer)*

- **IS 4440 - Networking & Servers** This course offers an introduction to the design, operation, and management of telecommunication systems including Server 2003, IIS, Linux, TCP/IP, management support for networking. The course provides instruction in data communications and computer network definitions, concepts and principles, including (but not limited to): the conversion of voice, data, video and image to digital form; topologies; protocols; standards; and fundamental concepts related to data communication networks, such as routers, gateways, and cabling. Students are prepared to make intelligent and informed decisions about data network design/management, by analyzing the benefits, drawbacks, effects, tradeoffs, and the compromises related to various data communication technologies. Students learn how to make policy, design, and installation decisions related to planning and implementing data communication and computer network applications.  
  *(Fall, Spring)*

- **IS 4460 - Web Based Applications** The objective of the course is to provide knowledge and skills needed to create Web-based applications. The course covers a broad set of technologies and tools that have led to the successful use of the World Wide Web for various businesses.  
  *(Fall, Spring)*

- **IS 4470 - Telecommunication & Security** This course examines management issues and practical implications related to securing information systems. Students focus on Access Control, Site Security, Networking & Review of TCP/IP, Attack Methods, Firewalls, Host Security, Cryptography, Crypto Systems, E-Commerce & Email Security, and Incident Response. A clear theoretical understanding supports a large practical component in which students learn to secure information systems and use contemporary security software.  
  *(Fall, Spring)*

- **IS 4480 - Data Warehouse Design & Implementation** The data generated from ongoing operations of businesses and not-for-profit enterprises continues to grow. Before analysis can take place, existing data must be modeled in ways that facilitate reporting. This course briefly presents the data models of existing operational systems and then contrasts those models to dimensional models used in data warehouses and analytic processing engines. Business reporting needs are analyzed, data warehouses are modeled based on the reporting needs, and then SQL is used to create and populate tables based on dimensional models. Once in place, the data warehouse is used as a backend for a reporting tool to create reports that answer business questions.  
  *(Summer, Fall)*

**Prerequisite: IS 4420**

- **OIS 5620 - Global Supply Chain Management**  
  *(Spring)*

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Global Perspectives Requirement: All IS students are required to complete two global perspectives courses. The first, OIS 5620, is required. The second can be any university approved IR course.

Information Systems Major Application
To apply for the IS major, students must have completed all pre-business courses and been admitted to upper division status. Admission to the major will be based on a student’s overall fit with the program based on the student’s goals, and grades in IS 2010 and IS 4410 (if completed). The OIS department also reviews the applicant’s overall grade point average.

Course Sequencing

Four Semester Option

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<th>Semester 1 (Fall)</th>
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Three Semester Option

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Student Organizations and Opportunities
The IS Club is a student organization that meets weekly on campus during the spring and fall semesters. Meeting topics range from industry speakers to technology demonstrations. Students have the opportunity to develop leadership, problem solving and critical thinking skills through their involvement experiences. To be added to the IS club listserv to learn about upcoming events and meetings, please contact the club at: TEK.club@business.utah.edu.

Career Services
Success on the job market requires early preparation; therefore students should begin investing in career skills as early as the freshman year. Professionals in the Campus Career Services (801-581-6186) and the Business Career Management Center (801-581-3061) assist students in understanding vocational options, finding internships, and preparing for a successful career.

Graduate Study in Information Systems
The David Eccles School of Business Master of Science in Information Systems (MSIS) program is designed to provide advanced IT training for individuals seeking the skills necessary to manage the technology of business. This program is a 30 credit-hour masters program and can be completed over three semesters. Admitted students can begin the program either in the fall or spring semester. The program offers students advanced graduate specializations in either data management or IT security. Each program of study offers University of Utah students a unique competitive advantage that will prepare them for high-level leadership positions in major corporations.

High achieving students can fast-track into the program by maintaining a 3.4 cumulative GPA and a 3.5 GPA in all upper division IS courses. Students who earn the fast-track option in the Master of Science in Information Systems program waive the GMAT and letters of recommendation in the application process.

For more information about graduate programs in the Eccles School call Graduate Admissions at (801) 581-7785 or e-mail mastersinfo@business.utah.edu

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