

Management Information Systems

IN THE FOWLER COLLEGE OF BUSINESS

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A Member of AACSB International—The Association to Advance Collegiate Schools of Business.

Faculty

Emeritus: Addo, Beatty, Easton, A., Easton, G., Feeney, Flatley, Hatch, Koster, Lackritz, Langenbach, Lyons-Lawrence, Norman, Penrose, Plice, Sherrard, Vik

Chair: Yang (Interim)

Professors: Briggs, Jennex, Raafat, Reinig, Shin, Yang

Associate Professor: Elkins

Assistant Professors: Abhari, K., Goldberg, Huangfu, Liu

Lecturers: Abhari, M., Judge, O'Byrne, Probett, Shaul, Showghi, Tyler

Offered by the Department

Master of Business Administration.

Master of Science degree in business administration.

Master of Science degree in cybersecurity management.

Master of Science degree in information systems.

Major in information systems with the

B.S. degree in business administration.

Major in general business with the B.S. degree in business administration. **See** Business Administration.

Minor in information systems.

Certificate in data analytics (refer to the *Graduate Bulletin*).

The Major

Good business decisions require good information. The purpose of an information system is to provide management with the information that is essential to decision making and to assist in interpreting that information.

Information Systems. Students interested in using computers to solve business problems and in devising new and more efficient solutions should consider a major in information systems. The major is intended to prepare students for their first job in information systems, which is normally as a systems analyst. The systems analyst studies problems, designs solutions, and implements those solutions using computer hardware and software. The major will also prepare students for continued growth as a manager in information systems.

The employment outlook for information systems specialists is currently very good. Positive projections continue into the future. Many graduates who major in information systems assume the following positions: systems analysts plan the activities necessary to solve a business problem by structuring the problem in logical form, identifying the data needed, and specifying the procedures to be followed in programming the data processing; information systems specialists represent various departments of a business in assuring that each department's information processing needs are provided for effectively and efficiently; programmers and analysts plan and write computer programs to process business information; computer center managers direct the work of information processing in a company; and technical marketing specialists sell and coordinate the installation of computer systems.

Typical places of employment for information systems graduates include large businesses, government agencies, computer manufacturers, universities, and independent computer service organizations.

Business Honors Program

The Business Honors Program offers excellent upper division business students the opportunity to explore issues in our local, regional, and global business environments focusing on the social and ethical responsibility that business has to the community and society. Honors students will enroll in a one unit business honors seminar each semester. During their enrollment they will participate in activities to promote their academic and personal growth, documenting their work in a written portfolio.

Generally, students should apply to this program at the time of application to upper division business. Applicants must submit an essay with their application. Applicants must have a 3.6 cumulative GPA or good standing in the Weber Honors College. Students not meeting these requirements may petition for admission to the program. Successful completion of the Business Honors Program will be recognized at graduation. Contact Dr. Robert A. Judge, Department of Management Information Systems, for more information about this program.

Statement on Computers

Before enrolling in upper division courses in the Fowler College of Business, students must be competent in the operation of personal computers, including word processing and spreadsheets. Business students are strongly encouraged to have their own computers capable of running word processing, spreadsheet, presentation, e-mail, and Internet applications such as those found in packages sold by major software publishers. Availability of on-campus computing resources can be limited due to increasing demand across the University.

Retention Policy

The Fowler College of Business expects that all business students will make reasonable academic progress towards the degree. Business premajors who have earned 60 units but have less than a 2.9 may be removed from the premajors and placed in undeclared. Upper division business majors earning less than a 2.0 average in their major GPA for two consecutive semesters may be removed from business and placed in undeclared.

Transfer Credit

Lower Division: Courses clearly equivalent in scope and content to San Diego State University courses required for minors or as preparation for all business majors will be accepted from regionally accredited United States institutions and from foreign institutions recognized by San Diego State University and the Fowler College of Business.

Upper Division: It is the policy of the San Diego State University Fowler College of Business to accept upper division transfer credits where (a) the course content, requirements, and level are equivalent to San Diego State University courses and (b) where the course was taught in an AACSB International—The Association to Advance Collegiate Schools of Business—accredited program. Exceptions require thorough documentation evidencing the above standards.

Impacted Program

The information systems major is impacted. Before enrolling in any upper division courses in business administration, students must advance to an upper division business major and obtain a business major code. To be admitted to an upper division business major (accounting, finance, financial services, real estate, information systems, management, or marketing), students must meet the following criteria:

- Complete with a grade of C (2.0) or better: Accountancy 201, 202; Economics 101, 102; Finance 240 (or an approved business law course); Management Information Systems 180; Mathematics 120 (or an approved calculus course or an approved three-unit finite mathematics course); Rhetoric and Writing Studies 290 (RWS 290 is not required for the accounting major); and either Statistics 119 or Economics 201. These courses cannot be taken for credit/no credit (Cr/NC);
- Complete a minimum of 60 transferable semester units;
- Have a cumulative GPA of 2.9.

Students who meet all requirements except the GPA may request to be placed on the waiting list. While all spaces are usually filled by eligible students, if there is room in the program after all the fully-qualified students have been accommodated,

students will be admitted from the waiting list in GPA order. Contact the Fowler Center for Student Success (EBA-448), 619-594-5828, for more information.

To complete the major, students must fulfill the degree requirements for the major described in the catalog in effect at the time they are accepted into the premajor at SDSU (assuming continuous enrollment).

Major Academic Plans (MAPs)

Visit <http://www.sdsu.edu/mymap> for the recommended courses needed to fulfill your major requirements. The MAPs website was created to help students navigate the course requirements for their majors and to identify which General Education course will also fulfill a major preparation course requirement.

Information Systems Major

With the B.S. Degree in Business Administration

(Major Code: 07021) (SIMS Code: 222336)

A minor is not required with this major.

Preparation for the Major. Complete with a grade of C (2.0) or better: Management Information Systems 180; Accountancy 201, 202; Economics 101, 102; Finance 240 (or an approved business law course); Mathematics 120 (or an approved calculus course or an approved three-unit finite mathematics course); Rhetoric and Writing Studies 290; and either Statistics 119 or Economics 201. (27 units)

These prerequisite courses may not be taken Cr/NC; the minimum grade in each class is C. Additional progress requirements must be met before a student is admitted to an upper division major.

Graduation Writing Assessment Requirement. Passing the Writing Placement Assessment with a score of 10 or completing one of the approved upper division writing courses (W) with a grade of C (2.0) or better. See “Graduation Requirements” section for a complete listing of requirements.

Major. Forty-four upper division units consisting of Management Information Systems 301, 306, 315, 380, 383, 481; Business Administration 300, 310, 323, 350, 360, 370; and 12 units selected from Management Information Systems 305, 396W, 406, 460, 482, 492, 515, 585. A “C” (2.0) average or better is required in the courses stipulated here for the major.

Students must complete all upper division courses in the major within seven years prior to graduation. Students who will have completed any of those courses more than seven years before the projected date of graduation must contact the department chair for information about ways to certify knowledge of current course content.

Information Systems Minor

(SIMS Code: 222337)

Admission to the minor in information systems requires completion of at least 60 units with a minimum grade point average of 2.9, and completion of Management Information Systems 180 with a grade of C (2.0) or better.

The minor in information systems consists of a minimum of 18 units to include Management Information Systems 180 and 15 units selected from Management Information Systems 301, 305, 306, 315, 380, 383, 406, 460, 481, 482, 492, 496, 515, 585.

Courses in the minor may not be counted toward the major, but may be used to satisfy preparation for the major and general education requirements, if applicable. A minimum of six upper division units must be completed in residence at San Diego State University. Students with a major in the Fowler College of Business, Hospitality and Tourism Management, or International Business should choose courses carefully with an adviser in their major department and the Fowler Center for Student Success (EBA-448).

Students must meet the prerequisites for the minor in effect at the time that they declare the minor. Contact the Fowler Center for Student Success (EBA-448) for admissions criteria and procedures.

Courses (MIS)

Refer to Courses and Curricula and University Policies sections of this catalog for explanation of the course numbering system, unit or credit hour, prerequisites, and related information.

LOWER DIVISION COURSES

MIS 180. Principles of Information Systems (3)

Fundamentals of information systems in business. Integration of information technology, e-commerce, systems analysis, database management systems, networking, security, and collaboration. Application of concepts through developing solutions to business problems using spreadsheets, database management systems, and web development tools/languages.

MIS 299. Special Study (3)

Prerequisites: Consent of department chair and instructor. Individual study.

UPPER DIVISION COURSES

(Intended for Undergraduates)

MIS 301. Statistical Analysis for Business (3)

Prerequisites: Management Information Systems 180; Mathematics 120; Statistics 119 or Economics 201. Approved upper division business major, business minor, or another major approved by the Fowler College of Business. **Proof of completion of prerequisites required:** Copy of transcript.

Statistical methods applied to business decision making.

MIS 305. Business Processes, ERP, and Analytics (3)

Prerequisites: Management Information Systems 180. Approved upper division business major, business minor, or another major approved by the Fowler College of Business. **Proof of completion of prerequisites required:** Copy of transcript.

Fundamental business processes and Enterprise Resource Planning (ERP) systems. Utilizing an ERP to run a business. How analytics are used by organizations to improve decision making.

MIS 306. Information Systems Analysis (3)

Prerequisites: Management Information Systems 180. Approved upper division business major, business minor, or another major approved by the Fowler College of Business. **Proof of completion of prerequisites required:** Copy of transcript.

Systems development life cycle concept, with emphasis on analysis of requirements using structured methodology. Acquisition strategies, application design alternatives, architecture design, feasibility study, implementation plans, needs assessment, and prototyping.

MIS 315. Business Applications Programming (3)

Prerequisites: Management Information Systems 180. Approved upper division business major, business minor, or another major approved by the Fowler College of Business. **Proof of completion of prerequisites required:** Copy of transcript.

Computer programming for business applications. Appropriate data structures, control structures and program structures. Languages widely used in business applications.

MIS 380. Data Management Systems (3)

Prerequisites: Management Information Systems 180. Approved upper division business major, business minor, or another major approved by the Fowler College of Business. **Proof of completion of prerequisites required:** Copy of transcript.

Methodology for applying data base management systems in design of information systems. Analysis of data base applications from perspectives of system users and systems analysts.

MIS 383. Networks and Data Communications (3)

Prerequisites: Management Information Systems 180. Approved upper division business major, business minor, or another major approved by the Fowler College of Business. **Proof of completion of prerequisites required:** Copy of transcript.

Fundamental data communications concepts, including voice communications and carrier service offerings, communications hardware, and network design. Global, enterprise, workgroup, and local area networks. Protocols and network operating systems. Network security and control. (Formerly numbered Management Information Systems 483.)

Management Information Systems

MIS 396W. Reporting Techniques for Business Professionals (3)

Prerequisites: Rhetoric and Writing Studies 290. Satisfies Graduation Writing Assessment Requirement for students who have completed 60 units; completed Writing Placement Assessment with a score of 8 or higher (or earned a grade of C (2.0) or better in Rhetoric and Writing Studies 280, 281 [or Linguistics 281] if score on WPA was 6 or lower); and completed General Education requirements in Communication and Critical Thinking. **Proof of completion of prerequisites required:** Test score or verification of exemption; copy of transcript. Must be admitted to the upper division major in business.

Advanced preparation of oral and written reports used in business and other organizations. Individualized study of reports in student's career field.

MIS 401. Business Intelligence and Analytics (3)

Prerequisite: Management Information Systems 301.

Using diagnostic, predictive, prescriptive, and visual analytics to solve business problems and make data-informed decisions at operational, strategic, and tactical levels.

MIS 406. Information Systems Design (3)

Prerequisites: Management Information Systems 306, 315, 380.

Proof of completion of prerequisites required: Copy of transcript.

Business information systems design, installation, and implementation as part of the systems development life cycle, with emphasis on structured design methodology.

MIS 455. Digital Entrepreneurship and Innovation (3)

Prerequisite: Management Information Systems 306.

Innovative digital technologies. Communicate value creation, capture, and delivery. Monetization and commercialization, prototype new products and services, and strategize financing.

MIS 460. Project Management (3)

Prerequisite: Credit or concurrent registration in Business Administration 360. **Proof of completion of prerequisite required:** Copy of transcript.

Management of small and large projects. Work breakdown structure milestones, project cost estimating and reporting, and single and multiple resource allocation/leveling. Computerized project management software.

MIS 481. E-Business/Web Development (3)

Prerequisites: Management Information Systems 306, 315, 380.

Proof of completion of prerequisites required: Copy of transcript.

Issues and tools related to developing Internet-based applications with database integration through hands-on projects. Developing complex sets of Web pages by linking front-end Web browser languages and databases via back-end server languages, database queries, and middleware.

MIS 482. Information Technology Projects (3)

Prerequisites: Completion of at least 18 units of upper division management information systems courses. **Proof of completion of prerequisites required:** Copy of transcript.

Contemporary technologies in a business context to include artificial intelligence, cloud computing, data science tools, Internet of things, mobile programming, and robotics. Implementation with client organizations and/or in-depth research analysis resulting in proof of concept and applications.

MIS 492. Management of Information Systems (3)

Prerequisites: Management Information Systems 306 and 380.

Proof of completion of prerequisites required: Copy of transcript.

Role of information systems in organizations from management perspective: strategic information system planning, systems administration, and management of end user computing. Management issues related to systems development and implementation. Management of computer operations and the computer center.

MIS 495. Management Information Systems Internship (1-3)

Prerequisite: Upper division business major approved by the Fowler College of Business.

Internship with business firm, government agency, or nonprofit organization under joint supervision of internship organization and course instructor. Career readiness, fundamentals of management information systems, and professional development. Maximum credit six units.

MIS 496. Selected Topics in Information Systems (1-4)

Prerequisite: Consent of department chair.

Selected areas of concern in information systems. See *Class Schedule* for specific content. May be repeated with new content with consent of department chair. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units.

MIS 498. Investigation and Report (1-3)

Prerequisites: Senior standing and consent of instructor.

A comprehensive and original study of a problem connected with information systems under the direction of one or more members of the information systems faculty. May be repeated with new content. Maximum credit six units.

MIS 499. Special Study (1-3)

Prerequisite: Consent of instructor.

Individual study. Maximum credit six units.

UPPER DIVISION COURSES

(Also Acceptable for Advanced Degrees)

MIS 515. Object-Oriented Programming for Business Applications (3)

Prerequisite: Management Information Systems 315 or knowledge of one computer programming language. **Proof of completion of prerequisite required:** Copy of transcript.

Object-oriented programming as applied to business applications. Use of object-oriented classes, features, inheritance, and subclasses for modeling and processing of business information.

MIS 585. Fundamentals of Cybersecurity Management (3)

Prerequisite: Management Information Systems 383 or 687.

Cybersecurity risks, threats, and vulnerabilities. Technologies, procedures, and techniques to assess, control, detect, and remediate threats and vulnerabilities.

MIS 596. Contemporary Topics in Management Information Systems (1-3)

Prerequisites: Business major approved by the Fowler College of Business and consent of instructor.

Contemporary topics in management information systems. May be repeated with new content. See *Class Schedule* for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Credit for 596 and 696 applicable to a master's degree with approval of the graduate adviser.

GRADUATE COURSES

Refer to the *Graduate Bulletin*.