

Information Systems

College of Business and Economics

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Faculty

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Programs

Undergraduate Degree :

B.S., Information Systems

Minor in Information Systems

Mission

The B.S., Information Systems (BSIS) degree offers educational opportunities to students with diverse backgrounds who are interested in Information Systems (IS). The Program provides students a synthesis of technological and business knowledge to develop and integrate effective IS solutions that support management decision making and organizational strategies. The Program prepares graduates for a variety of IS careers in business, government, and non-profit organizations.

The Major

The study of Information Systems (IS) centers on the effective use of information technology – computers and telecommunications networks – to support management decision-making and corporate strategy, in addition to providing all necessary operational level support for an organization.

Student Learning Outcomes of the Undergraduate Program

1. Our graduates are able to recognize and analyze ethical problems in organizational situations and select and defend a course of action.
2. Our graduates are able to effectively communicate complex information system and business concepts orally and in writing.
3. Our graduates are able to apply critical thinking and problem-solving skills when analyzing and solving information system and business problems.
4. Our graduates understand the individual and group dynamics of project teams.
5. Our graduates have knowledge of IS technology components and their interrelations.
6. Our graduates have the knowledge to implement information systems that support an organization's strategic objectives.
7. Our graduates develop skills through research in IS literature that will prepare them for life-long learning in the field.

Careers

The IS program helps prepare graduates to assume such positions as systems analyst, application program developer, database administrator, network specialist, and web developer. Information Systems career opportunities are available in a variety of industries, including consulting, banking, entertainment, health, media, education, and technology.

Academic Advisement

All Lower Division program advisement is through the college COBAE SSC/EOP in JH 2113. Upon completion of BUS 302 and BUS 302L, students are encouraged to seek advisement through faculty mentors from the department of their major.

Business Majors

A Business Major is any student majoring in Accountancy; Finance; Information Systems; Management; Marketing; or Business Administration with an option in either Business Law, Financial Services, Global Supply Chain Management, Real Estate, or Systems and Operations Management. All Business Majors share 27 units of Common Lower Division courses and 19 units of Common Upper Division courses.

Special Grade Requirements

Transfer students should be aware that no grade lower than a “C” will be accepted upon transfer from another institution to satisfy College of Business and Economics requirements.

Residency Requirement

At least 50 percent of the business and economics course credit units and 50 percent of the specialized major credit units required for the Bachelor of Science degrees in Accountancy, Business Administration, Finance, Information Systems, Management, Marketing, and the Bachelor of Arts degree in Economics must be completed in residence at California State University, Northridge.

Requirements for the Bachelor of Science Degree in Information Systems

Check course descriptions for prerequisite courses. Prerequisites must be completed prior to enrolling in each course. All IS majors must earn a “C” or higher in all IS courses.

1. Common Lower Division Business Core (21 Units)

ENGL	205	Business Communication in its Rhetorical Contexts (3)
SOM	120 ¹	Basic Business Statistics (3)
ECON	160	Principles of Microeconomics (3)
ECON	161	Principles of Macroeconomics (3)
ACCT	220	Introduction to Financial Accounting (3)
ACCT	230	Introduction to Managerial Accounting (3)
BLAW	280	Business Law I (3)

¹ The 4 unit Math 140 course also satisfies this requirement.

2. Upper Division Writing Proficiency Exam (UDWPE)

Requirement:

The successful completion of the Upper Division Writing Proficiency Exam (UDWPE) with a score of 8 or higher is a prerequisite for enrollment in all 400-level information systems and business courses.

3. Common Upper Division Business Core (19 Units)

BUS	302	Gateway Experience (3)
BUS	302L	Gateway Experience Laboratory (1)
FIN	303	Financial Management (3)
MKT	304	Marketing Management (3)
SOM	306	Operations Management (3)
MGT	360	Management and Organizational Behavior (3)
BUS	497	Capstone (3)

4. Required Information Systems Core Courses (22 Units)

COMP	110/L	Introduction to Algorithms and Programming/Lab (3/1)
PHIL	230	Introduction to Formal Logic (3)
IS	312	Information Systems for Business (3)
IS	431	Systems Analysis and Design (3)
IS	435	Business Data Communications and Networking (3)
IS	441	Database Management Systems (3)
IS	451	Systems Development Project (3)

Select One of the Following Options:

A. Business Systems Option (ISBS) (25 Units)

MATH	103 ²	Mathematical Methods for Business (3)
COMP	105BAS	Computer Programming in Basic (1)
IS	335	Information Technology in Business (3)
Free Elective (Select any University course) (3)		

² MATH 103 or higher level mathematics course must be completed with a grade of "C" or higher.

Select 3 units from the following Upper Division business courses:

ECON	310	Price Theory and Applications (3)
MKT	346	Marketing Research (3)
MKT	442	Business to Business Marketing (3)
MKT	448	Internet Marketing (3)
MGT	450	Organization Change and Development (3)
MGT	456	Negotiation and Conflict Management (3)
MGT	458	Decision Making and Creativity (3)

Select 12 units from the following IS elective courses:

IS	455	Advanced Application Development (3)
IS	457	Advanced Telecommunications and Networking (3)
IS	497A-Z	Special Topics – Information Systems (3)
SOM	485	Decision Support Systems (3)

B. Information Technology Option (ISIT) (25 Units)

MATH	150A ³	Calculus I (5)
COMP	122/L	Computer Architecture and Assembly Language (1+1)
COMP	182/L	Data Structures and Program Design and Lab (3+1)
COMP	222	Computer Organization (3)
COMP	282	Advanced Data Structures (3)
COMP	380/L	Introduction to Software Engineering and Lab (3)
Free Elective (Select any university course) (2)		

Select 3 units from the following courses:

COMP	450	Societal Issues in Computing (3)
COMP	467	Multimedia Systems Design (3)
COMP	480/L	Software System Development (2+1)
COMP	485	Human-Computer Interaction (3)

³ MATH 103 or higher level mathematics course must be completed with a grade of "C" or higher.

5. General Education (33 Units)

Of the 48 units of the General Education requirement, 15 units are satisfied by Lower Division requirements. Math 103/150 satisfies the 3 unit mathematics requirement in Basic Skills. ECON 160 and 161 satisfy the 6 units of Social Sciences. BLAW 280 satisfies 3 units of Lifelong Learning, and PHIL 230 satisfies the three unit critical thinking requirement in Basic Skills.

Minor In Information Systems

The study of Information Systems (IS) cuts across all functional areas of today's organizations. Business professionals need a thorough understanding of IS to be competitive in the job market. Since IS facilitates communications throughout every type of organization, a concentration of study would also be of interest to students majoring in degree programs throughout the university. The Information Systems minor is for (1) students within the College of Business and Economics (except for ISBS or ISIT majors) and (2) students throughout the University majoring in programs such as Communications, Geography, Graphic Design, Engineering, Health Science, Kinesiology, Journalism or any other program where a student feels a concentration of Information Systems courses would be useful for his/her career.

1. Required Courses (21 Units):

COMP	100 ¹	Computers: Their Impact and Use (3)
IS	312 ²	Information Systems for Business (3)
ACCT	220	Introduction to Financial Accounting (3)
IS	431 ³	Systems Analysis and Design (3)
IS	435 ³	Business Data Communications and Networking (3)
IS	441 ³	Database Management Systems (3)
IS	451 ⁴	Systems Development Project (3)

¹ COMP 100 satisfies 3 units of General Education in Lifelong Learning.

² IS 312 has a prerequisite of ACCT 220

³ IS 431, IS 435 and IS 441 have a prerequisite of IS 312

⁴ IS 451 has prerequisites of IS 431 and IS 435

This minor is not available to Information Systems majors.

Total Units Required for the Minor	21
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Course List

IS 312. Information Systems for Business (3)

Prerequisite: ACCT 220. A survey of information systems concepts including information technology, business information systems, and information system development and management. Preparation of group and individual projects involving hands-on learning of database management systems, decision support software, and web page design and publishing. Practice in the use of a formal problem-solving process that includes five tasks. Presentation of results in written and/or oral form.

IS 335. Information Technology in Business (3)

Prerequisite: ACCT 220. Defines the information technology (IT) that is used in business, specifically the characteristics of hardware architecture, operating systems concepts, and their interactions; as well as properties of n-tiered information systems. The laboratory component of the course will provide practice on computer hardware architecture, operating systems, and software of information systems.

IS 399. Independent Study (1-3)

Prerequisites: Consent of instructor and approval of Program Chair. For students capable of independent work and in need of advanced and specialized study. May be repeated for a total of six units.

IS 431. Systems Analysis and Design (3)

Prerequisites: Grade of "C" or higher in IS 312, a grade of "C" or higher in BUS 302, a grade of "CR" in BUS 302L and Upper Division Writing Proficiency Exam (UDWPE) score of 8 or higher. This course covers the systems development life cycle. Topics include standard tools and techniques to analyze and design an information system from a structured as well as an object-oriented perspective. A Computer-Aided Software Engineering (CASE) tool is used to facilitate the study. Required class work includes a group project on developing an information system in a business case.

IS 435. Business Data Communications and Networking (3)

Prerequisites: Grade of "C" or higher in IS 312, a grade of "C" or higher in BUS 302, a grade of "CR" in BUS 302L and Upper Division Writing Proficiency Exam (UDWPE) score of 8 or higher. An introduction to the concepts and applications of telecommunications and networking technology in a business environment. Topics include network-related hardware and software technology, standards and protocols, local and wide area networks, network management, and emerging trends.

Emphasis is on the ability to integrate basic technological components to meet the business application requirements. Students will prepare a variety of projects involving the analysis, design, and management of network systems.

IS 441. Database Management Systems (3)

Prerequisite: Grade of “C” or higher in IS 312, a grade of “C” or higher in BUS 302, a grade of “CR” in BUS 302L and Upper Division Writing Proficiency Exam (UDWPE) score of 8 or higher. The design and implementation of computerized databases. Provides background for the selection and use of database management systems. Topics include types of available systems, functions of database administration, conceptual database design, data independence, integrity, privacy, and query. The student will design and implement a database utilizing a commercial database management system.

IS 450. Business Expert Systems (3)

Prerequisites: Grade of “C” or higher in IS 431, a grade of “C” or higher in BUS 302, a grade of “CR” in BUS 302L and Upper Division Writing Proficiency Exam (UDWPE) score of 8 or higher. An introduction to the uses of expert systems and the basic concepts underlying their design and construction. An overview of the issues involved in the development and implementation of business expert systems.

IS 451. Systems Development Project (3)

Prerequisites: Grade of “C” or higher in IS 431 and IS 435, a grade of “C” or higher in BUS 302, a grade of “CR” in BUS 302L and Upper Division Writing Proficiency Exam (UDWPE) score of 8 or higher. An introduction to enterprise-level system development concepts, principles and practices. Evaluate and set up comprehensive system development projects for enterprises. Student teams will analyze, design and plan systems of moderate complexity, using current technologies and the appropriate project management methods in the solution.

IS 455. Advanced Application Development (3)

Prerequisites: Grade of “C” or higher in IS 431, IS 435, and IS 441, a grade of “C” or higher in BUS 302, a grade of “CR” in BUS 302L and Upper Division Writing Proficiency Exam (UDWPE) score of 8 or higher. Advanced application development emphasizing enterprise-wide, Web-based, transaction processing topics such as: data mining, data warehousing, knowledge management, metadata representation, customer relations management, N-tier applications, systems integration, and application integration. The course will include hands-on projects using advanced application development tools.

IS 457. Advanced Telecommunications and Networking (3)

Prerequisites: Grade of “C” or higher in IS 431, IS 435, and IS 441, a grade of “C” or higher in BUS 302, a grade of “CR” in BUS 302L and Upper Division Writing Proficiency Exam (UDWPE) score of 8 or higher. An advanced course in telecommunications and networks emphasizing enterprise networking topics such as: network operating systems, network analysis and design, network security, virtual private networks, collaboration, wireless networks, VLAN, multi-platform integration, voice-over internet protocol, web server strategies, and storage area networks. This course will include hands-on projects involving network design and implementation.

IS 497A-Z. Special Topics - Information Systems (1-4)

Prerequisites: Grade of “C” or higher in IS 431, IS 435, and IS 441, a grade of “C” or higher in BUS 302 a grade of “CR” in Bus 302L and Upper Division Writing Proficiency Exam (UDWPE) score of 8 or higher. Innovative course of study. Topics to be specified in the Schedule of Classes. Different topics may be taken for credit.

IS 498. Field Assignments and Reports – Information Systems (1-6)

Prerequisites: Consent of instructor and approval of Program Chair. For students capable of independent work and in need of advanced and specialized study. May be repeated for a total of six units.

IS 499A-C. Independent Study (1-4)

Prerequisites: Consent of instructor and approval of Program Chair. For students capable of independent work and in need of advanced and specialized study. May be repeated for a total of six units.

IS 599. Independent Study (1-3)

Prerequisites: Consent of instructor and approval of Program Chair. For students capable of independent work and in need of advanced and specialized study. May be repeated for a total of six units.

Graduate

IS 628. Computer-Based Information Systems (3)

Prerequisite: ACCT 501 or one year of undergraduate accounting. An introduction to computer-based information systems at a fairly sophisticated level. Emphasis will be on the understanding of computer concepts, computer applications in an organizational environment, and the analysis and design of information systems.

IS 655. Information Systems: Theory and Practice Seminar (3)

Prerequisite: IS 628. Advanced study of computer-based Information Systems. Case studies of current computer applications in various businesses will be assigned to students as research projects.

IS 656. Information Systems: Systems Design Seminar I (3)

Prerequisite: IS 628. Define requirements of computer-based Information Systems on Micro and Mini Computers. Students will be assigned advanced system design research projects.

IS 657. Information Systems: Systems Design Seminar II (3)

Prerequisite: IS 628. Define requirements of computer-based Information Systems on time-sharing systems and large computers. Students will be assigned advanced systems design research projects.

IS 699A-C. Independent Study (1-3)

Prerequisites: Consent of instructor and approval of Program Chair. For students capable of independent work and in need of advanced and specialized study. May be repeated for a total of six units.