BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: CONCENTRATION IN INFORMATION SYSTEMS

Concentration in Information Systems

The Information Systems concentration prepares students for multiple careers that require an aptitude for analytical thinking and a strong working competency in information systems. It is designed to produce a person with technical and managerial skills in business application development, project management, application analysis and design, data management, and network and security management. Graduates qualify for and are productive in careers that include technology/business analyst, programmer/analyst, database designer/analyst/administrator, network administrator, and help desk/technical support specialist. The concentration emphasizes technical knowledge of information system components and infrastructure; application and development skills; high-level competencies in applying information systems analysis and systems design strategies and techniques; understanding the information needs and delivery systems within business organizations; understanding the business/organizational context of information systems; communications and human relations skills for working with and managing people and projects in virtual teams; and education and desire for lifelong learning and professional and personal development.

Program Learning Outcomes

a. Students have basic competencies in business-related disciplines.
   i. Students will demonstrate discipline#based knowledge in accounting, economics, finance, information systems, international business, management, marketing, operations, and statistics;
   ii. Students will demonstrate the ability to integrate the knowledge of different functional areas into effective business solutions.

b. Students demonstrate effective communication skills.
   i. Students will create well#written documents on a business topic;
   ii. Students will deliver an effective oral presentation on a business topic.

c. Students demonstrate the ability to analyze business situations.
   i. Students will solve business problems using appropriate quantitative and analytical techniques;
   ii. Students will demonstrate the ability to identify and analyze alternatives in a business context;
   iii. Students will demonstrate the ability to articulate and defend a course of action;
   iv. Students will apply appropriate information systems and technologies to solve business problems.

d. Students demonstrate the ability to work effectively in diverse teams that embrace equality and inclusion.
   i. Students contribute effectively to accomplishing teams' goals;
   ii. Students leverage diverse viewpoints by communicating effectively and respectfully with teammates from different backgrounds;
   iii. Students demonstrate the ability to be effective team leaders.

e. Students demonstrate the ability to solve business problems with ethical and environmental implications.
   i. Students identify the ethical dilemmas inherent in the operation of a business and explore company performance from a triple bottom line perspective: social, environmental, and financial;
   ii. Students demonstrate ethical decision-making and analytical skills through cases and projects that focus on each of the stakeholder categories and identify sustainable solutions that account for a triple bottom line.

f. Students demonstrate the ability to develop global business solutions through analyzing legal, political, social, and cultural factors.

Bachelor of Science in Business Administration: Concentration in Information Systems – 69 Units Minimum

- Except in cases of credit by examination, no more than 6 units of the core may be completed on a CR/NC basis.
- Students must earn a grade of C- or higher in core Business courses required as prerequisites for other core Business courses.
- All concentration courses must be taken on a letter-grade basis. Students must have a minimum grade point average of 2.0 in all concentration courses.
- A maximum of two courses (6 units) in the information systems concentration may be courses not listed in the bulletin for the concentration including courses from other disciplines at SF State and courses from other AACSB accredited schools of business or institutions of equal caliber. All such courses must be approved in advance by an Information Systems advisor.

Prerequisites Courses (9-12 units)

Code	Title	Units
Select One:		3-6
DS 110	Calculus with Business Applications	
MATH 107 & MATH 108	Mathematics for Business Calculus I and Mathematics for Business Calculus II	
MATH 110	Business Calculus	
ECON 101	Introduction to Microeconomic Analysis	3
ISYS 263	Introduction to Information Systems	3
or a passing score on the ISYS 263 CLEP Exam		

These courses must be completed before enrollment in certain core courses. Most core courses have specific prerequisites that are listed in the course descriptions.

Note: DS 110, ECON 101, and ECON 102 (formerly ECON 100) fulfill General Education requirements.

Core Courses (39 units)

Code	Title	Units
ACCT 100	Introduction to Financial Accounting	3
ACCT 101	Introduction to Managerial Accounting	3
Select One:		3
BUS 300GW	Business Communication for Professionals - GWAR	
DS 660GW	Communications for Business Analytics - GWAR	
BUS 682	Seminar on Business and Society [1]	3

BUS 690	Seminar in Business Policy and Strategic Management [1]	3
Select One:		3
DS 212	Business Statistics	
MATH 124	Elementary Statistics	
DS 412	Operations Management	3
ECON 102	Introduction to Macroeconomic Analysis	3
FIN 350	Business Finance	3
IBUS 330	International Business and Multicultural Relations	3
ISYS 363	Information Systems for Management	3
MGMT 405	Introduction to Management and Organizational Behavior	3
MKTG 431	Principles of Marketing	3

[1] Course must be taken for a letter grade.

Concentration Courses (15 units)

Code	Title	Units
ISYS 350	Building Business Applications	3
ISYS 463	Information Systems Analysis and Design	3
ISYS 464	Managing Enterprise Data	3
ISYS 565	Managing Enterprise Networks	3
ISYS 663	Information Technology Project Management	3

Electives (6 units)

Select Two:

Code	Title	Units
ISYS 412	Application Development for Data Analytics	3
ISYS 475	Building Web Applications with Open Source Software	3
ISYS 512	Business Application Design and Development with .NET	3
ISYS 556	Building Mobile Business Applications	3
ISYS 567	Information Systems Internship	3
ISYS 568	Multimedia Business Applications Development	3
ISYS 569	Information Systems for Business Process Management	3
ISYS 573	New Advances in IT in Organizations	3
ISYS 575	Information Security Management	3
ISYS 650	Business Intelligence	3

General Education Requirements

Requirement	Course Level	Units	Area Designation
Oral Communication	LD	3	A1
Written English Communication	LD	3	A2
Critical Thinking	LD	3	A3
Physical Science	LD	3	B1
Life Science	LD	3	B2
Lab Science	LD	1	B3
Mathematics/ Quantitative Reasoning	LD	3	B4
Arts	LD	3	C1
Humanities	LD	3	C2
Arts or Humanities	LD	3	C1 or C2
Social Sciences	LD	3	D1
Social Sciences: US History	LD	3	D2
Lifelong Learning and Self-Development (LLD)	LD	3	E
Ethnic Studies	LD	3	F
Physical and/or Life Science	UD	3	UD-B
Arts and/or Humanities	UD	3	UD-C
Social Sciences	UD	3	UD-D
SF State Studies			
Courses certified as meeting the SF State Studies requirements may be upper or lower division in General Education (GE), a major or minor, or an elective.			
American Ethnic and Racial Minorities	LD or UD	3	AERM
Environmental Sustainability	LD or UD	3	ES
Global Perspectives	LD or UD	3	GP
Social Justice	LD or UD	3	SJ

Note: LD = Lower-Division; UD = Upper-Division.

First-Time Student Roadmap (4 Year)

The roadmaps presented in this Bulletin are intended as suggested plans of study and do not replace meeting with an advisor. For a more personalized roadmap, please use the Degree Planner (https://registrar.sfsu.edu/degreeplanner/) tool found in your Student Center.

First-Time Student Roadmap (http://bulletin.sfsu.edu/colleges/business/information-systems/bs-business-administration-concentration-information-systems/roadmap-i-ii-eng/)

SF State Scholars Roadmap

The San Francisco State Scholars program provides undergraduate students with an accelerated pathway to a graduate degree. Students in this program pursue a bachelor's and master's degree simultaneously. This program allows students to earn graduate credit while in their junior and/or senior year, reducing the number of semesters required for completion of a master's degree.

Bachelor of Science in Business Administration: Concentration in Information Systems, Master of Science in Business Analytics Scholars Roadmap (http://bulletin.sfsu.edu/colleges/business/information-systems/bs-business-administration-concentration-information-systems/scholars-roadmap-bs-information-systems-ms-business-analytics/)

Transfer Student Roadmaps

For students with an AS-T in **Business Administration**

with 18 units in the major satisfied.
Roadmap with 18 Lower-Division Units (http://bulletin.sfsu.edu/colleges/business/information-systems/bs-business-administration-concentration-information-systems/adt18-roadmap/)

For students with an AS-T in **Business Administration**
with 15 units in the major satisfied.
Roadmap with 15 Lower-Division Unit (http://bulletin.sfsu.edu/colleges/business/information-systems/bs-business-administration-concentration-information-systems/adt15-roadmap/)s

General Advising Information for Transfer Students

a. Before transfer, complete as many lower-division requirements or electives for this major as possible.
b. The following courses are not required for admission but are required for graduation. Students are strongly encouraged to complete these units before transfer; doing so will provide more flexibility in course selection after transfer.
    - a course in U.S. History
    - a course in U.S. & California Government

For information about satisfying the requirements described in (1) and (2) above at a California Community College (CCC), please visit http://www.assist.org (http://assist.org). Check any geographically accessible CCCs; sometimes options include more than one college. Use ASSIST to determine:

- Which courses at a CCC satisfy any lower-division major requirements for this major;
- Which courses at a CCC satisfy CSU GE, US History, and US & CA Government requirements.

Remedial courses are not transferable and do not apply to the minimum 60 semester units/90 quarter units required for admission.

Additional units for courses that are repeated do not apply to the minimum 60 units required for upper-division transfer (for example, if a course was not passed on the first attempt or was taken to earn a better grade).

Before leaving the last California Community College of attendance, obtain a summary of completion of lower-division General Education units (IGETC or CSU GE Breadth). This is often referred to as a GE certification worksheet. SF State does not require delivery of this certification to Admissions, but students should retain this document for verifying degree progress after transfer.

Credit for Advanced Placement, International Baccalaureate, or College-Level Examination Program courses: AP/IB/CLEP credit is not automatically transferred from the previous institution. Units are transferred only when an official score report is delivered to SF State. Credit is based on the academic year during which exams were taken. Refer to the University Bulletin in effect during the year of AP/IB/CLEP examination(s) for details regarding the award of credit for AP/IB/CLEP.

Students pursuing majors in science, technology, engineering, and mathematics (STEM) disciplines often defer 6-9 units of lower-division General Education in Areas C and D until after transfer to focus on preparation courses for the major. This advice does not apply to students pursuing associate degree completion before transfer.

Transferring From Institutions Other Than CCCs or CSUs

Review SF State's lower-division General Education requirements. Note that, as described below, the four basic skills courses required for admission meet A1, A2, A3, and B4 in the SF State GE pattern. Courses that fulfill the remaining areas of SF State's lower-division GE pattern are available at most two-year and four-year colleges and universities.

Of the four required basic skills courses, a course in critical thinking (A3) may not be widely offered outside the CCC and CSU systems. Students should attempt to identify and take an appropriate course no later than the term of application to the CSU. To review more information about the A3 requirement, please visit bulletin.sfsu.edu/undergraduate-education/general-education/lower-division/#AAEL.

Waiting until after transfer to take a single course at SF State that meets both US and CA/local government requirements may be an appropriate option, particularly if transferring from outside of California.