

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: CONCENTRATION IN DECISION SCIENCES

Concentration in Decision Sciences

The Decision Sciences concentration provides students with the skills necessary to analyze and solve practical business problems. Concentration courses allow students to acquire competence in decision making through the use of professional business software, such as spreadsheet, forecasting, and simulation packages. By selecting appropriate electives, students can prepare for a career using decision sciences in computer information systems, finance, operations, marketing, design and industry, accounting, international business, general management, or other areas within industry or government.

Program Learning Outcomes

- a. Students have basic competencies in business-related disciplines.
 - i. Students will demonstrate the 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 and technologies;
 - 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.
- d. Students develop team skills that facilitate the achievement of organizational goals.
 - i. Students will work effectively in culturally and ethnically diverse teams demonstrated by the ability to contribute to the team's performance, interact positively with teammates, keep the team on track, maintain high standards for team performance, and by having the necessary knowledge, skills, and abilities to help the team succeed.
- e. Students understand the ethical issues related to the operation of business, including sustainability.
 - i. Students will identify key concepts in business ethics;
 - ii. Students will recognize the ethical dilemmas in specific business cases;
 - iii. Students will analyze how ethical issues can affect the interests of different stakeholders;
 - iv. Students will propose a business solution to the ethical dilemmas;
 - v. Students will be aware of sustainability issues in business.
- f. Students understand the issues related to the operation of global business
 - i. Students will recognize the relevant global issues including legal, political, social and cultural factors in specific management situations;
 - ii. Students will analyze the impact of global issues such as legal, political, social and cultural factors in specific management situations;

Students will demonstrate the ability to propose business solutions based on the analysis of global issues, including legal, political, social, and cultural factors.

Bachelor of Science in Business Administration: Concentration in Decision Sciences – 69-72 units

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.

Prerequisite Courses (9-12 units)

Code	Title	Units
Select One:		
DS 110	Calculus with Business Applications	3-6
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 within 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 - GVAR	
DS 660GW	Communications for Business Analytics - GVAR	
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 (12 units)

Code	Title	Units
Select four:		
DS 310	Critical Data Analysis for Business	3
DS 311	Technologies in Data Analytics	3
DS 312	Data Analysis with Computer Applications	3
DS 408	Computer Simulation	3
DS 601	Applied Management Science	3
DS 604	Applied Business Forecasting	3
DS 612	Data Mining with Business Applications	3
DS 624	Quality Management	3
DS 655	Sustainable Supply Chain Optimization	3
DS 660GW	Communications for Business Analytics - GVAR	3

Note: DS 660GW Communications for Business Analytics - GVAR can satisfy both the core course requirement and one of the four required concentration courses.

Approved Electives (9 units)

Please select three courses from the list below. Students may also use additional courses from the Concentration Courses list above. If you're interested in a course that is not in either of these lists, ask your Decision Sciences faculty adviser about it and they will consider it, provided the course is analytical in nature. Decision Sciences majors should take at least two of their electives from the same department. Be sure to check course prerequisites and be aware that some departments may limit their courses to majors..

Code	Title	Units
Any DS concentration option above not already used to satisfy a requirement		
Any upper-division ACCT course		
Any 200-level or higher CSC course		
Any upper-division ECON course except ECON 690GW		
Any upper-division FIN course except FIN 350		
Any upper-division ISYS course except ISYS 363		
Any upper-division MATH course		
BUS 354	Starting a Small Business	3
BUS 450	Greening of Business	3
ENG 620	Introduction to Computational Linguistics	3
ENG 680	Applied Computational Linguistics	3
IBUS 430	Import-Export Management and Small Business Operations	3
IBUS 590	International Environmental Analysis	3
IBUS 690	Global Strategic Management	3
MKTG 436	Retail Management	3
MKTG 441	Business-to-Business Marketing	3
MKTG 469	Digital Marketing	3
MKTG 632	Marketing Research	3
MKTG 660	Marketing Analytics	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 \(http://bulletin.sfsu.edu/colleges/business/decision-sciences/bs-business-administration-concentration-decision-sciences/roadmap-i-ii-eng/\)](http://bulletin.sfsu.edu/colleges/business/decision-sciences/bs-business-administration-concentration-decision-sciences/roadmap-i-ii-eng/)

SF State Scholars

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.

B.S. in Business Administration: Decision Sciences and M.S. in Business Analytics SF State Scholars Roadmap (<http://bulletin.sfsu.edu/colleges/business/decision-sciences/bs-business-administration-concentration-decision-sciences/scholars-roadmap/>)

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 \(http://bulletin.sfsu.edu/colleges/business/decision-sciences/bs-business-administration-concentration-decision-sciences/adt18-roadmap/\)](http://bulletin.sfsu.edu/colleges/business/decision-sciences/bs-business-administration-concentration-decision-sciences/adt18-roadmap/)

For students with an AS-T in **Business Administration** with 15 units in the major satisfied.

[Roadmap with 15 Lower-Division Unit \(http://bulletin.sfsu.edu/colleges/business/decision-sciences/bs-business-administration-concentration-decision-sciences/adt15-roadmap/\)](http://bulletin.sfsu.edu/colleges/business/decision-sciences/bs-business-administration-concentration-decision-sciences/adt15-roadmap/)

General Advising Information for Transfer Students

- Before transfer, complete as many lower-division requirements or electives for this major as possible.
- 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/#AEL.

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.