

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION: CONCENTRATION IN BUSINESS ANALYTICS

Concentration in Business Analytics

The concentration in Business Analytics offers students an explicit foundation in business analytics, an area that is in high and growing demand. Concentration courses allow students to acquire competence in data management and quantitative analysis through the use of professional software. By selecting an appropriate elective, students can prepare for a career in business analytics in a specific business area of interest within industry or government.

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 Business Analytics – 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. A student must have a minimum grade point average of 2.0 across 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:		
DS 660GW	Communications for Business Analytics - GVAR	3
BUS 300GW	Business Communication for Professionals - GVAR	
BUS 682	Seminar on Business and Society	3
BUS 690	Seminar in Business Policy and Strategic Management	3
Select One:		
DS 212	Business Statistics	3
ECON 311	Statistical Methods and Interpretation	
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

Concentration Courses (18 units)

Code	Title	Units
Select one:		3
DS 312	Data Analysis with Computer Applications	
ECON 312	Introduction to Econometrics	
Select one:		3
DS 601	Applied Management Science	
ECON 618	Economic Inference: Methods and Applications	
DS 612	Data Mining with Business Applications	3
ISYS 412	Application Development for Data Analytics	3
ISYS 464	Managing Enterprise Data	3
ISYS 650	Business Intelligence	3

Approved Elective (3 units)

Please select one course from the list below. Courses taken to satisfy other requirements cannot be used to satisfy the elective requirement. Other upper-division courses can be used as an elective upon consultation with an advisor.

Code	Title	Units
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 624	Quality Management	3
DS 655	Sustainable Supply Chain Optimization	3
ECON 301	Intermediate Microeconomic Theory	3
ECON 302	Intermediate Macroeconomic Theory	3
ECON 312	Introduction to Econometrics	3
ECON 450	Health Economics	3
ECON 505	Public Economics	3
ECON/LABR 510	Labor Economics	3
ECON 520	Industrial Organization	3
ECON 550	Environmental Economics	3
ECON 611	International Trade Theory and Policy	3
ECON 616	Experimental Economics and Game Theory	3
ECON 618	Economic Inference: Methods and Applications	3
ECON 640	Health Economics Analysis and Research	3
ECON 680	Applied Economics and Data Analysis with R	3
ISYS 350	Building Business Applications	3
ISYS 565	Managing Enterprise Networks	3
ISYS 568	Multimedia Business Applications Development	3
ISYS 569	Information Systems for Business Process Management	3
ISYS 575	Information Security Management	3
ISYS 663	Information Technology Project Management	3
MATH 225	Introduction to Linear Algebra	3
MKTG 632	Marketing Research	3

MKTG 660	Marketing Analytics ¹	3
MKTG 661	Introduction to Digital Marketing Analytics ¹	3

¹ MKTG courses are available to non-Marketing students on a space-available basis. Students in the Business Analytics concentration are allowed to substitute DS 412 as a prerequisite for MKTG 660.

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-business-analytics/first-time-student-roadmap/>)

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.

Business Administration (Business Analytics) BS + Business Analytics MS SF Scholars Roadmap (<http://bulletin.sfsu.edu/colleges/business/decision-sciences/bs-business-administration-concentration-business-analytics/analytics-bs-ms-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-business-analytics/adt18-roadmap/>)

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

Roadmap with 15 Lower-Division Units (<http://bulletin.sfsu.edu/colleges/business/decision-sciences/bs-business-administration-concentration-business-analytics/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/#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.