

# DECISION SCIENCES AND BUSINESS ANALYTICS 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.

**This roadmap is a suggested plan of study and does not replace meeting with an advisor. Please note that students may need to adjust the actual sequence of courses based on course availability. Please consult an advisor in your major program for further guidance.**

Course	Title	Units
<b>First Year</b>		
<b>Fall Semester</b>		
ECON 101	Introduction to Microeconomic Analysis (Major Prerequisite, D1)	3
ENG 114	Writing the First Year: Finding Your Voice (A2) <sup>1</sup>	3
Select One (Major Prerequisite, B4): <sup>2</sup>		3
DS 110	Calculus with Business Applications	
MATH 110	Business Calculus	
GE Area A <sup>3</sup>		3
GE Area C		3
		<b>Units 15</b>
<b>Spring Semester</b>		
ECON 102	Introduction to Macroeconomic Analysis (Major Core, D1)	3
ISYS 263	Introduction to Information Systems (Major Prerequisite)	3
GE Area A		3
GE Area B: Life Science (B2) and Laboratory Science (B3) <sup>4</sup>		3-4
GE Area E		3
		<b>Units 15-16</b>
<b>Second Year</b>		
<b>Fall Semester</b>		
ACCT 100	Introduction to Financial Accounting (Major Core)	3
Select One (Major Core):		3
DS 212	Business Statistics I	
MATH 124	Elementary Statistics (B4)	

GE Area B: Physical Science (B1) and Laboratory Science (B3) <sup>4</sup>		3-4
GE Area D: U.S. History (D2)		3
SF State Studies or University Elective		3
		<b>Units 15-16</b>
<b>Spring Semester</b>		
ACCT 101	Introduction to Managerial Accounting (Major Core)	3
GE Area C - Take Two		6
GE Area F <sup>±</sup>		3
U.S. and California Government ( <a href="http://bulletin.sfsu.edu/undergraduate-education/american-institutions/#usg">http://bulletin.sfsu.edu/undergraduate-education/american-institutions/#usg</a> )		3
		<b>Units 15</b>
<b>Third Year</b>		
<b>Fall Semester</b>		
DS 412	Operations Management (Major Core)	3
IBUS 330	International Business and Multicultural Relations (Major Core, UD-D, GP))	3
Select One (Major Core):		3
ACCT 307	Accounting Information Systems	
ISYS 363	Information Systems for Management	
Major Concentration (12 Units Total) - Take One <sup>5</sup>		3
Major Approved Elective (9 Units Total) - Take One <sup>6</sup>		3
		<b>Units 15</b>
<b>Spring Semester</b>		
Select One (Major Core):		3
BUS 300GW	Business Communication for Professionals - GVAR	
DS 660GW	Communications for Business Analytics - GVAR (Major Concentration) <sup>5</sup>	
Major Concentration (12 Units Total) - Take Two <sup>5</sup>		6
Major Approved Elective (9 Units Total) - Take One <sup>6</sup>		3
GE Area UD-C: Upper-Division Arts and/or Humanities (Consider SF State Studies Course)		3
		<b>Units 15</b>
<b>Fourth Year</b>		
<b>Summer Semester</b>		
GE Area UD-B: Upper-Division Physical and/or Life Sciences (Consider SF State Studies Course)		3
SF State Studies or University Elective		3
		<b>Units 6</b>

Fall Semester		
FIN 350	Business Finance (Major Core)	3
ISYS 850	Seminar in Business Intelligence (Graduate Core)	3
MGMT 405	Introduction to Management and Organizational Behavior (Major Core)	3
MKTG 431	Principles of Marketing (Major Core)	3
Major Concentration (12 Units Total) - Take One <sup>5</sup>		3
<b>Units</b>		<b>15</b>

Spring Semester		
BUS 682	Seminar on Business and Society (Major Core)	3
BUS 690	Seminar in Business Policy and Strategic Management (Major Core)	3
DS 853	Applied Multivariate Analysis (Graduate Core)	3
ISYS 812	Programming and Applications for Data Analytics (Graduate Core)	3
Major Approved Elective (9 Units Total) - Take One <sup>6</sup>		3
<b>Units</b>		<b>15</b>

Fifth Year		
Summer Semester		
SF State Studies or University Elective		3
<b>Units</b>		<b>3</b>

Fall Semester		
DS 861	Data Mining and Advanced Statistical Methods for Business Analysts (Graduate Core)	3
ISYS 864	Data Management for Analytics (Graduate Core)	3
Graduate Elective (9 units) - Take Two <sup>7</sup>		6
<b>Units</b>		<b>12</b>

Spring Semester		
DS 862	Machine Learning for Business Analysts (Graduate Core)	3
BUS 895	Research Project in Business (Culminating Experience)	3

Graduate Elective (9 units) - Take One <sup>7</sup>	3
<b>Units</b>	<b>9</b>
<b>Total Units</b>	<b>150-152</b>

<sup>1</sup> ENG 114 can only be taken if you complete Directed Self-Placement (DSP) and select ENG 114; if you choose ENG 104/ENG 105 through DSP you will satisfy A2 upon successful completion of ENG 105 in the second semester; multilingual students may be advised into alternative English courses.

<sup>2</sup> To determine the best B4 course option, students should complete the online advising activity at mathadvising.sfsu.edu (<https://mathadvising.sfsu.edu/>). Questions? Contact Gator Smart Start. (<https://gatorsmartstart.sfsu.edu/>)

<sup>3</sup> To avoid taking additional units, it is recommended that you meet the **SF State Studies** (AERM, GP, ES, SJ) requirements within your GE or major.

<sup>4</sup> Consider taking a class combined with a laboratory or a separate lab to fulfill B3 if not already satisfied.

<sup>5</sup> **Concentration Courses (12 units)**  
 Select 12 credit hours from the following:  
 DS 311 Technologies in Data Analytics (3 units)  
 DS 312 Data Analysis with Computer Applications (3 units)  
 DS 408 Computer Simulation (3 units)  
 DS 601 Applied Management Science (3 units)  
 DS 604 Applied Business Forecasting (3 units)  
 DS 612 Data Mining with Business Applications (3 units)  
 DS 624 Quality Management (3 units)  
 DS 655 Sustainable Supply Chain Management (3 units)  
 DS 660GW Communications for Business Analytics - GVAR (3 units)  
**Note:** DS 660GW can satisfy both the core course requirement and one of the four required concentration courses.

**6 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. 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 units)

BUS 450 Greening of Business (3 units)

ENG 620 Introduction to Computational Linguistics (3 units)

ENG 680 Applied Computational Linguistics (3 units)

IBUS 430 Import-Export Management and Small Business Operations (3 units)

IBUS 590 International Environmental Analysis (3 units)

IBUS 690 Global Strategic Management (3 units)

MKTG 436 Retail Management (3 units)

MKTG 441 Business to Business Marketing (3 units)

MKTG 469 Digital Marketing (3 units)

MKTG 632 Marketing Research (3 units)

MKTG 660 Marketing Analytics I (3 units)

**7 Graduate Electives (9 units)**

Select three:

CSC 867 Internet Application Design and Development (3 units)

CSC 869 Data Mining (3 units)

CSC 872 Pattern Analysis and Machine Intelligence (3 units)

CSC 890 Graduate Seminar (3 units)

DS 852 Managerial Decision Making (3 units)

DS 855 Supply Chain Management (3 units)

ECON 825 Applied Time Series Econometrics (3 units)

ECON 830 Advanced Econometric Methods and Applications (3 units)

ECON 840 Health Economics Analysis and Research (3 units)

ECON 880 Applied Economics and Data Analysis with R (3 units)

FIN 819 Financial Analysis and Management (3 units)

FIN 820 Seminar in Financial Risk Management (3 units)

FIN 825 Seminar in Investments (3 units)

FIN 836 Seminar in International Finance (3 units)

HTM 831 Services Operations Management (3 units)

ISYS 814 Information Systems for Strategic Advantage (3 units)

ISYS 856 Enterprise Mobile Applications (3 units)

ISYS 869 Business Process Management (3 units)

MGMT 850 Ethics and Compliance in Business (3 units)

MKTG 820 Digital Marketing (3 units)

MKTG 864 Seminar in Marketing Research (3 units)

MKTG 885 Marketing of High-Technology Products and Services (3 units)

MKTG 886 Seminar in Marketing Analytics (3 units)

Additional electives may be approved by the Director of the MSBA program

± Given catalog rights, fall 2022 transfer students do not need to complete an Area F course.