

# BACHELOR OF SCIENCE IN STATISTICS ROADMAP – QUANTITATIVE REASONING CATEGORY I/II AND STRETCH ENGLISH

120 Total Units Required

Minimum Number of Units in the Major: 55

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 Semester</b>		
ENG 104	Writing the First Year: Finding Your Voice Stretch I <sup>1</sup>	3
MATH 226	Calculus I (Major Core, B4) <sup>2</sup>	4
GE Area A <sup>3</sup>		3
GE Area C		3
GE Area D		3
<b>Units</b>		<b>16</b>
<b>Second Semester</b>		
ENG 105	Writing the First Year: Finding Your Voice Stretch II (A2) <sup>1</sup>	3
MATH 227	Calculus II (Major Core)	4
GE Area A		3
GE Area C		3
GE Area D		3
<b>Units</b>		<b>16</b>
<b>Third Semester</b>		
Select One (Major Core):		3
CSC 210	Introduction to Computer Programming	
CSC 309	Computer Programming	
MATH 228	Calculus III (Major Core)	4
GE Area B: Physical Science (B1) and Laboratory Science (B3) <sup>4</sup>		3-4
GE Area E		3
<b>Units</b>		<b>13-14</b>
<b>Fourth Semester</b>		
MATH 301GW	Exploration and Proof - GVAR (Major Core)	3
GE Area B: Life Science (B2) and Laboratory Science (B3) <sup>4</sup>		3-4

GE Area C		3
SF State Studies or University Elective - Take Two		6
<b>Units</b>		<b>15-16</b>
<b>Fifth Semester</b>		
MATH 325	Linear Algebra (Major Core)	4
MATH 338	Introduction to SAS (Major Core)	3
MATH 440	Probability and Statistics I (Major Core)	3
GE Area F <sup>±</sup>		3
GE Area UD-B: Upper-Division Physical and/or Life Sciences (Consider SF State Studies Course)		3
<b>Units</b>		<b>16</b>
<b>Sixth Semester</b>		
MATH 441	Probability and Statistics II (Major Core)	3
MATH 448	Introduction to Statistical Learning and Data Mining (Major Core)	3
Guided Electives (9 Units Total) - Take One <sup>5</sup>		3
GE Area UD-C: Upper-Division Arts and/or Humanities (Consider SF State Studies Course)		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</b>		<b>15</b>
<b>Seventh Semester</b>		
MATH 424	Introduction to Linear Models (Major Core)	3
MATH 442	Probability Models (Major Core)	3
MATH 447	Design and Analysis of Experiments (Major Core)	3
Guided Electives (9 Units Total) - Take One <sup>5</sup>		3
GE Area UD-D: Upper-Division Social Sciences (Consider SF State Studies Course)		3
<b>Units</b>		<b>15</b>
<b>Eighth Semester</b>		
MATH 449	Categorical Data Analysis (Major Core)	3
Guided Electives (9 Units Total) - Take One <sup>5</sup>		3
SF State Studies or University Elective - Take Three		8
<b>Units</b>		<b>14</b>
<b>Total Units</b>		<b>120-122</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) (<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> **Guided Electives (9 units)**  
Select three courses from one of the areas (Science, Economics, Business: Decision Sciences, or Business: Information Systems) listed below:
- Science**  
MATH 370 Real Analysis I (3 units)  
MATH 376 Ordinary Differential Equations I (3 units)  
MATH 400 Numerical Analysis (3 units)  
MATH 425 Applied and Computational Linear Algebra (3 units)  
MATH 430 Mathematics of Optimization (3 units)  
MATH 460 Mathematical Modeling (3 units)
- Economics**  
ECON 301 Intermediate Microeconomic Theory (3 units)  
ECON 302 Intermediate Macroeconomic Theory (3 units)  
ECON 312 Introduction to Econometrics (3 units)  
ECON 715 Mathematical Economics (3 units)  
ECON 731 Econometric Methods and Applications (3 units)  
ECON 825 Applied Time Series Econometrics (3 units)
- Business: Decision Sciences**  
DS 408 Computer Simulation (3 units)  
DS 412 Operations Management (3 units)  
DS 604 Applied Business Forecasting (3 units)  
DS 624 Quality Management (3 units)
- Business: Information Systems**  
ISYS 363 Information Systems for Management (3 units)  
ISYS 463 Information Systems Analysis and Design (3 units)  
ISYS 569 Information Systems for Business Process Management (3 units)  
ISYS 650 Business Intelligence (3 units)
- <sup>±</sup> Given catalog rights, fall 2022 transfer students do not need to complete an Area F course.