

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

120 Total Units Required  
Minimum Number of Units in the Major: 54

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
Units		16
<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
Units		16
<b>Third Semester</b>		
CSC 210 or CSC 309	Introduction to Computer Programming (Major Core) or Computer Programming for Scientists and Engineers	3
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
Units		13-14
<b>Fourth Semester</b>		
MATH 301GW	Exploration and Proof - GWAR (Major Core)	3
GE Area B: Life Science (B2) and Laboratory Science (B3) <sup>4</sup>		3-4
GE Area D		3
GE Area C		3
SF State Studies or University Elective		3
Units		15-16

<b>Fifth Semester</b>		
MATH 325	Linear Algebra (Major Core)	3
MATH 338	Introduction to SAS (Major Core)	3
MATH 440	Probability and Statistics I (Major Core)	3
GE Area UD-B: Upper-Division Physical and/or Life Sciences (Consider SF State Studies Course)		3
SF State Studies or University Elective		3
Units		15

<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
Major Emphasis (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
SF State Studies or University Elective		3
Units		15

<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
Major Emphasis (9 Units Total) - Take One <sup>5</sup>		3
GE Area UD-D: Upper-Division Social Sciences (Consider SF State Studies Course)		3
Units		15

<b>Eighth Semester</b>		
MATH 449	Categorical Data Analysis (Major Core)	3
Major Emphasis (9 Units Total) - Take One <sup>5</sup>		3
SF State Studies or University Elective - Take Three		9
Units		15
Total Units		120-122

<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> Depending on courses completed through Early Start, students in Pathway/Category III or IV may be required to enroll in a support course to complement their Quantitative Reasoning/B4 requirement. There are multiple course options for this pathway. Before enrolling in a B4 course, students should verify their MATH Pathway/Category in their Student Center (<http://cms.sfsu.edu/content/student-center>). Information regarding the courses that correspond with your MATH Pathway/Category can be found on the Developmental Studies Office Website (<http://developmentalstudies.sfsu.edu>).

<sup>3</sup> To avoid taking additional units, it is recommended that you meet **SF State Studies** requirements (AERM, GP, ES, SJ) 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> **Major Emphasis (9 units)**

Select three courses from one emphasis in consultation with the Statistics advisor.

**Business Emphasis**

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)

ISYS 363 Information Systems for Management (3 units)

ISYS 463 Information Systems Analysis and Design (3 units)

ISYS 464 Managing Enterprise Data (3 units)

ISYS 569 Information Systems for Business Process Management (3 units)

ISYS 650 Business Intelligence (3 units)

**Economics Emphasis**

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)

**Science Emphasis**

MATH 370 Real Analysis I (3 units)

MATH 376 Ordinary Differential Equations I (3 units)

MATH 400 Numerical Analysis (3 units)

MATH 430 Mathematics of Optimization (3 units)

MATH 460 Mathematical Modeling (3 units)

MATH 491 Game Theory (3 units)

MATH 493 Introduction to Actuarial Mathematics (3 units)

MATH 494 Non-Parametric Statistics (3 units)