

# BACHELOR OF ARTS IN MATHEMATICS: CONCENTRATION IN TEACHING - QUANTITATIVE REASONING CATEGORY III/IV AND ENG 114

120 Total Units Required

Minimum Number of Units in the Major: 45

Course	Title	Units
<b>First Semester</b>		
ENG 114	Writing the First Year. Finding Your Voice (A2) <sup>1</sup>	3
MATH 197	Prelude to Calculus I (Prerequisite for MATH 226) <sup>2,3</sup>	3
GE Area A <sup>4</sup>		3
GE Area C		3
GE Area D		3
	Units	15
<b>Second Semester</b>		
MATH 198	Prelude to Calculus II (Prerequisite for MATH 226, B4) <sup>2,3</sup>	3
GE Area A		3
GE Area C		3
GE Area D		3
GE Area E		3
	Units	15
<b>Third Semester</b>		
MATH 226	Calculus I (Major Core, B4) <sup>2,3</sup>	4
GE Area B: Physical Science (B1) and Laboratory Science (B3) <sup>5</sup>		3-4
GE Area D		3
Complementary Studies or SF State Studies or University Elective <sup>6</sup>		3
	Units	13-14
<b>Fourth Semester</b>		
CSC 210 or CSC 309	Introduction to Computer Programming (Major Concentration) or Computer Programming for Scientists and Engineers	3
MATH 227	Calculus II (Major Core)	4
GE Area B: Life Science (B2) and Laboratory Science (B3) <sup>5</sup>		3-4

GE Area C		3
Complementary Studies or SF State Studies or University Elective <sup>6</sup>		3
	Units	16-17
<b>Fifth Semester</b>		
MATH 228	Calculus III (Major Core)	4
MATH 301GW	Exploration and Proof - GVAR	3
MATH 324	Probability and Statistics with Computing (Major Concentration)	3
GE Area UD-B: Upper-Division Physical and/or Life Sciences (Consider SF State Studies Course)		3
Complementary Studies or SF State Studies or University Elective <sup>6</sup>		3
	Units	16
<b>Sixth Semester</b>		
MATH 300GW	History of Mathematics - GVAR	3
MATH 310	Elementary Number Theory (Major Concentration)	3
MATH 325	Linear Algebra (Major Core)	3
GE Area UD-C: Upper-Division Arts and/or Humanities (Consider SF State Studies Course)		3
Complementary Studies or SF State Studies or University Elective <sup>6</sup>		3
	Units	15
<b>Seventh Semester</b>		
MATH 335	Modern Algebra (Major Core)	3
MATH 350	Geometry (Major Concentration)	3
GE Area UD-D: Upper-Division Social Sciences (Consider SF State Studies Course)		3
Complementary Studies or SF State Studies or University Elective - Take Two <sup>6</sup>		6
	Units	15
<b>Eighth Semester</b>		
MATH 370	Real Analysis I (Major Core)	3
MATH 375	Field Study for Secondary Teachers (Major Concentration)	3
MATH 475	Capstone Course for Secondary Teachers of Mathematics (Major Concentration) <sup>7</sup>	3

Complementary Studies or SF State Studies or University Elective - Take Two <sup>6</sup>	6
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> QR Category III students with a grade of B or higher in high school pre-calculus in the past year may be able to enroll in MATH 226. Please see a department advisor.

<sup>4</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>5</sup> Consider taking a class with a combined laboratory or a separate lab to fulfill B3 if not already satisfied.

<sup>6</sup> **Complementary Studies**

Students who pursue a Bachelor of Arts in Mathematics with Concentrations in Liberal Arts, Teaching, or Advanced Studies must complete 12 Complementary Studies units, within a coherent group of courses with a prefix other than MATH, and not cross-listed with MATH. Complementary Studies units for the Mathematics major may come from:

1. Any courses offered by other departments in the College of Science & Engineering (CoSE), or
2. Any of the following courses outside of CoSE:
  - a. DS 312 Data Analysis with Computer Applications (3 units)
  - b. DS 408 Computer Simulation (3 units)
  - c. ECON 101 Introduction to Microeconomic Analysis (3 units) (D1)
  - d. ECON 301 Intermediate Microeconomic Theory (3 units)
  - e. ECON 302 Intermediate Macroeconomic Theory (3 units)
  - f. FIN 350 Business Finance (3 units)
  - g. ISYS 363 Information Systems for Management (3 units)
  - h. ISYS 463 Information Systems Analysis and Design (3 units)
  - i. ISYS 464 Managing Enterprise Data (3 units)
  - j. ISYS 650 Business Intelligence (3 units)
  - k. PHIL 205 Formal Logic I (3 units)
  - l. PHIL 350 Philosophy of Science (3 units) (UD-B)
  - m. PHIL 351 Philosophy of Risk (3 units) (UD-B, ES)
  - n. PHIL 694 Philosophical Logic Workshop (3 units)
  - o. PHIL 695 Advanced Logic Workshop (3 units)

<sup>7</sup> MATH 475 serves as the capstone course for the major.