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

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

First Semester
ENG 114      Writing the First Year: Finding Your Voice (A2) 3
MATH 197     Prelude to Calculus I (Prerequisite for MATH 226) 3
GE Area A    4
GE Area C    3
GE Area D    3

Units 15

Second Semester
MATH 198     Prelude to Calculus II (Prerequisite for MATH 226, B4) 3
GE Area A    3
GE Area C    3
GE Area D    3
GE Area E    3

Units 15

Third Semester
MATH 226     Calculus I (Major Core, B4) 4
GE Area B: Physical Science (B1) and Laboratory Science (B3) 3-4
GE Area D    3
Complementary Studies or SF State Studies or University Elective 6

Units 13-14

Fourth Semester
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) 3-4
GE Area C    3
Complementary Studies or SF State Studies or University Elective 3

Units 16-17

Fifth Semester
MATH 228     Calculus III (Major Core) 4
MATH 301GW   Exploration and Proof - GWAR 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 6

Units 16

Sixth Semester
MATH 300GW   History of Mathematics - GWAR 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 6

Units 15

Seventh Semester
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 6

Units 15

Eighth Semester
MATH 370     Real Analysis I (Major Core) 3
Bachelor of Arts in Mathematics: Concentration in Teaching · Quantitative Reasoning Category III/IV and ENG 114

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<th>Course Code</th>
<th>Course Title</th>
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<tr>
<td>MATH 375</td>
<td>Field Study for Secondary Teachers (Major Concentration)</td>
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<tr>
<td>MATH 475</td>
<td>Capstone Course for Secondary Teachers of Mathematics (Major Concentration)</td>
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Complementary Studies or SF State Studies or University Elective - Take Two

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Total Units 120-122

1. 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.

2. 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. Information regarding the courses that correspond with your MATH Pathway/Category can be found on the Developmental Studies Office Website.

3. 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.

4. To avoid taking additional units, it is recommended that you meet SF State Studies requirements (AERM, GP, ES, SJ) within your GE or major.

5. Consider taking a class with a combined laboratory or a separate lab to fulfill B3 if not already satisfied.

6. 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)

7. MATH 475 serves as the capstone course for the major.