

MATHEMATICS (MATHEMATICS FOR ADVANCED STUDY) BA + MATHEMATICS MA 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 your Degree Planner (<https://registrar.sfsu.edu/degreeplanner>) and an advisor for further guidance.

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

Course	Title	Units
First Year		
Fall Semester		
MATH 226	Calculus I (Major Core, GE 2) ¹	4
GE Area 1: English Communication		3
GE Area 3: Arts and Humanities		3
GE Area 4: Social and Behavioral Sciences ²		3
Complementary Studies or SF State Studies or University Elective ³		3
Units		16
Spring Semester		
MATH 227	Calculus II (Major Core)	4
GE Area 1A: English Composition ⁴		3
GE Area 1: English Communication		3
GE Area 4: Social and Behavioral Sciences ²		3
Complementary Studies or SF State Studies or University Elective ³		2
Units		15
Second Year		
Fall Semester		
Select One (Major Core): ⁵		3
MATH 209	Mathematical Computing	
CSC 101	Introduction to Computing	
CSC 309	Computer Programming	
MATH 228	Calculus III (Major Core)	4
GE Area 3: Arts and Humanities		3

GE Area 5: Physical and Biological Sciences ⁶		3-4
Units		13-14
Spring Semester		
MATH 301GW	Exploration and Proof - GVAR (Major Core)	3
MATH 325	Linear Algebra (Major Core)	4
Select One: ⁵		3
CSC 215	Intermediate Computer Programming (if CSC 101 taken)	
Complementary Studies or SF State Studies or University Elective (if MATH 209 or CSC 309 taken)		
GE Area 5: Physical and Biological Sciences ⁶		3-4
Complementary Studies or SF State Studies or University Elective ³		3
Units		16-17
Third Year		
Fall Semester		
Select One (Major Concentration):		3
MATH 310	Elementary Number Theory	
MATH 376	Ordinary Differential Equations I	
MATH 440	Probability and Statistics I (Major Concentration)	3
GE Area 6: Ethnic Studies (https://bulletin.sfsu.edu/undergraduate-education/general-education/areasix/)		3
GE Area 5UD or 2UD: Upper-Division Sciences or Upper-Division Mathematical Concepts		3
US and California Government (https://bulletin.sfsu.edu/undergraduate-education/american-institutions/#usg)		3
Units		15
Spring Semester		
MATH 335	Modern Algebra (Major Core)	3
MATH 370	Real Analysis I (Major Core)	3
MATH 380	Introduction to Complex Analysis (Major Concentration)	3
GE Area 3UD: Upper-Division Arts or Humanities		3
Complementary Studies or SF State Studies or University Elective ³		3
Units		15
Fourth Year		
Fall Semester		
MATH 435/735	Modern Algebra II (Major Concentration and Graduate Core)	3

MATH 470/770	Real Analysis II: Several Variables (Major Concentration and Graduate Core)	3
Major Elective (6 units) ^{7,8}		3
GE Area 4UD: Upper-Division Social and Behavioral Sciences		3
Complementary Studies or SF State Studies or University Elective ³		3
Units		15

Spring Semester

Major Elective (6 units) ^{7,8}		3
Complementary Studies or SF State Studies or University Elective - Take Four ³		12
Units		15

Fifth Year**Fall Semester**

Select Two (Graduate Core):		6
MATH 710	Measure and Integration	
MATH 711 or MATH 730	Functional Analysis or Theory of Functions of a Complex Variable	
MATH 725	Advanced Linear Algebra	
MATH 850	Algebra	
Related Courses ⁹		3
Units		9

Spring Semester

Select One Not Already Taken (Graduate Core):		3
MATH 710	Measure and Integration	
MATH 711 or MATH 730	Functional Analysis or Theory of Functions of a Complex Variable	
MATH 725	Advanced Linear Algebra	
MATH 850	Algebra	
Select One (Culminating Experience):		0-3
MATH 896EXM	Culminating Experience Examination	
MATH 898	Master's Thesis	
Related Courses - Take One if Needed ⁹		0-3
Graduate Core Option ¹⁰		3
Units		9
Total Units		138-140

- ² Students should use their Pathway/Category (<https://gatorsmartstart.sfsu.edu/pathways>) to determine the appropriate GE 1A course option. For directions on how to view your Pathway/Category, visit [how to find your pathway](https://gatorsmartstart.sfsu.edu/howtofindyourpathways) (<https://gatorsmartstart.sfsu.edu/howtofindyourpathways>). Questions? Contact Gator Smart Start. (<https://gatorsmartstart.sfsu.edu/>)
- ³ First-time freshmen must take one lower-division Area 4 course that meets US History (USH).
- ⁴ **Complementary Studies**
Students in the B.A. Math program will satisfy the Complementary Studies requirement by taking 12 units of courses in the College of Science and Engineering outside of Math.
- ⁵ CSC 101 and CSC 215 must both be taken to fulfill this requirement. CSC 101 and CSC 215 are only recommended if students are double-majoring or minoring in Computer Science. All other students should take either MATH 209 or CSC 309.
- ⁶ Consider taking a class combined with a laboratory or a separate lab to fulfill 5C if not already satisfied.
- ⁷ Upper-Division/Graduate Mathematics or Related Courses ⁹, may double count for this requirement.
- ⁸ **Major Electives**
Two elective MATH courses numbered 400 or above except MATH 475, MATH 565, MATH 575, MATH 576, and MATH 577.
- ⁹ **Upper-Division/Graduate Mathematics or Related Courses (9-12 units)**
MATH 730 must be included among these units unless the student had earned a B or higher grade in an undergraduate complex analysis course. No more than 9 units may be selected from approved unpaired undergraduate upper-division courses. Students must complete either a thesis with oral defense (MATH 898) or take the comprehensive examinations and write an expository paper (MATH 896EXM). Students who plan to take MATH 898 must complete 9 units of elective courses. Students who plan to take MATH 896EXM must complete 12 units of elective courses, including at least 3 units of unpaired graduate courses.
- ¹⁰ **Graduate Core Option (3 units)**
Select an additional 3 units from unpaired graduate courses other than MATH 898 or MATH 899

¹ Students should use their Pathway/Category (<https://gatorsmartstart.sfsu.edu/pathways>) to determine the appropriate GE 2 course option. For directions on how to view your Pathway/Category, visit [how to find your pathway](https://gatorsmartstart.sfsu.edu/howtofindyourpathways) (<https://gatorsmartstart.sfsu.edu/howtofindyourpathways>). Questions? Contact Gator Smart Start. (<https://gatorsmartstart.sfsu.edu/>)