APPLIED MATHEMATICS BS + 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, ES, 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
SF State Studies or University Elective		3
	Units	**16**
Spring Semester		
Select One (Major Core):		3
MATH 209	Mathematical Computing	
CSC 101	Introduction to Computing	
CSC 309	Computer Programming	
MATH 227	Calculus II (Major Core)	4
GE Area 1A: English Composition [3]		3
GE Area 1: English Communication		3
GE Area 4: Social and Behavioral Sciences [2]		3
	Units	**16**
Second Year		
Fall Semester		
MATH 228	Calculus III (Major Core)	4
MATH 301GW	Exploration and Proof - GWAR (Major Core)	3
Select One:		3
CSC 215	Intermediate Computer Programming (if CSC 101 taken)	

	SF State Studies or University Elective (if MATH 209 or CSC 309 taken)	
GE Area 5: Physical and Biological Sciences [4]		3-4
	Units	**13-14**
Spring Semester		
MATH 325	Linear Algebra (Major Core)	4
MATH 440	Probability and Statistics I (Major Core)	3
GE Area 3: Arts and Humanities		3
GE Area 5: Physical and Biological Sciences [4]		3-4
SF State Studies or University Elective		3
	Units	**16-17**
Third Year		
Fall Semester		
MATH 376	Ordinary Differential Equations I (Major Core)	3
MATH 400	Numerical Analysis (Major Core)	3
MATH 735	Modern Algebra II (Graduate Core)	3
MATH 770	Real Analysis II: Several Variables (Graduate Core)	3
Application Elective (9 units) [5]		3
	Units	**15**
Spring Semester		
Select One (Major Core): [6]		3
MATH 335	Modern Algebra	
MATH 370	Real Analysis I	
MATH 380	Introduction to Complex Analysis	
MATH 460	Mathematical Modeling (Major Core) [6]	3
Major Elective (6 units) [6,7]		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
	Units	**15**
Fourth Year		
Fall Semester		
MATH 696	Applied Mathematics Project I (Major Core)	1
Application Elective (9 units) [5,6]		3
Major Elective (6 units) [6,7]		3
GE Area 3UD: Upper-Division Arts or Humanities		3
GE Area 4UD: Upper-Division Social and Behavioral Sciences		3
U.S. and California Government (https://bulletin.sfsu.edu/undergraduate-education/american-institutions/#usg)		3
	Units	**16**

Spring Semester

MATH 697	Applied Mathematics Project II (Major Core)	2
Application Elective (9 units) [5,6]		3
SF State Studies or University Elective - Take Three		9
	Units	**14**

Fifth Year

Fall Semester

Graduate Elective [8]		3
SF State Studies or University Elective - Take Two		6
	Units	**9**

Spring Semester

Select One (Culminating Experience):		0-3
MATH 896EXM	Culminating Experience Examination	
MATH 898	Master's Thesis	
Graduate Electives - Take Two or Three [8]		6-9
	Units	**6-12**
	Total Units	**136-144**

[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/). Questions? Contact Gator Smart Start. (https://gatorsmartstart.sfsu.edu/)

[2] First-time freshmen must take one lower-division Area 4 course that meets US History (USH).

[3] 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/). Questions? Contact Gator Smart Start. (https://gatorsmartstart.sfsu.edu/)

[4] Consider taking a class combined with a laboratory or a separate lab to fulfill 5C if not already satisfied.

[5] **Major Application Electives (9 units)**
A coherent collection of three courses emphasizing applications of mathematics, chosen with the consent of the applied mathematics advisor.

[6] Graduate core courses[9], except MATH 735 and MATH 770, may double count for this requirement for a max of 12 units.

[7] **Major Electives (6 units)**
A full list of courses that can fulfill this requirement can be found in the Degree Requirements. (https://bulletin.sfsu.edu/colleges/science-engineering/mathematics/bs-applied-mathematics/#degreerequirementstext)

[8] **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.

[9] **Graduate Core**
A full list of courses that can fulfill this requirement can be found in the Degree Requirements (https://bulletin.sfsu.edu/colleges/science-engineering/mathematics/ma-mathematics/#degreerequirementstext).