

San Francisco State University 2016-2017 Bulletin

B.A. Mathematics: *Mathematics for Liberal Arts* – 120 Total Units Required

Minimum number of units in the Major = 42

1st Semester Requirements

Requirement	Recommended Courses	Units
Major Core and Area B: Quantitative Reasoning (B4) Calculus I (ELM or readiness test, MATH 199 or equivalent with a C or better or high school math analysis or pre-calculus with a B or better)	MATH 226	4
Area A: Written English Communication I (A2)	A2 or ENG 104	3
Area A: Oral Communication (A1) or Critical Thinking (A3)		3
Area C: Arts (C1) or Humanities (C2)		3
Area D: Social Sciences: U.S. History (D2) or U.S. and California Government (D3)		3
Total: 16		

* To avoid taking additional units, it is recommended that you meet **LLD and SFSU Studies** requirements (AERM, GP, ES, SJ) within your GE or major
 * ENG 114 can only be taken if you complete Directed Self-Placement (DSP) and select English 114; if you choose 104/105 through DSP you will satisfy A2 upon successful completion of 105 in the second semester; multilingual students may be advised into alternative English courses

2nd Semester Requirements

Requirement	Recommended Courses	Units
Major Core: Calculus II (MATH 226 with a C or better)	MATH 227	4
Area D: Social Sciences (D1)		3
Area A: Written English Communication II (A4)	A4 or ENG 105	3
Area A: Critical Thinking (A3) or Oral Communication (A1)		3
Area D: Social Sciences: U.S. and California Government (D3) or U.S. History (D2)		3
Total: 16		

3rd Semester Requirements

Requirement	Recommended Courses	Units
Major Core: Calculus III (MATH 227 with a C or better)	MATH 228	4
Major Concentration (select one): Introduction to Computer Programming or Computer Programming for Scientists and Engineers (MATH 226)	CSC 210 or 309	3
Area A: Written Communication II (A4) or Complimentary Studies (see note)		3
Area C: Literature (C3)		3
Area B: Physical Science (B1) and Laboratory Science (B3)*		3-4
Total: 16-17		

* Consider taking a class combined with a laboratory or a separate lab to fulfill B3

4th Semester Requirements

Requirement	Recommended Courses	Units
Major Core: Exploration and Proof (MATH 227, ENG 214 both with a C or better)	MATH 301GW*	3
Area C: Arts (C1)		3
Area B: Life Science (B2) and Laboratory Science (B3)*		3-4
Complimentary Studies (see note)		3
Complimentary Studies or SF Studies or University Electives		3
Total: 15-16		

* Consider taking a class with a combined laboratory or a separate lab to fulfill B3 if the requirement has not already been met.

* You must take at least one GWAR (GW) course.

5th Semester Requirements

Requirement	Recommended Courses	Units
Major Core: Linear Algebra (MATH 227 with a C or better)	MATH 325	3
Major Concentration: History of Mathematics (ENG 214 with a C- or better, MATH 227 with a C or better)	MATH 300GW*	3
Upper Division GE: UD-D		3
Complimentary Studies (see note)		3
Complimentary Studies or SF Studies or University Electives		3
Total: 15		

* You must take at least one GWAR (GW) course.

6th Semester Requirements

Requirement	Recommended Courses	Units
Major Core: Modern Algebra (MATH 301, MATH 325 both with a C or better)	MATH 335	3
Major Elective (12 units total): Any MATH course numbered 400 or above except MATH 375, 475, 565, 575, 576, 577, 578		3
Upper Division GE: UD-C		3
Complimentary Studies or SF Studies or University Electives	Take 2	6
Total: 15		

7th Semester Requirements

Requirement	Recommended Courses	Units
Major Core: Real Analysis I (MATH 228, MATH 301 both with a C or better)	MATH 370	3
Major Elective (12 units total): Any MATH course numbered 400 or above except MATH 375, 475, 565, 575, 576, 577, 578		3
Upper Division GE: UD-B		3
Complimentary Studies or SF Studies or University Electives		6
Total: 15		

8th Semester Requirements

Requirement	Recommended Courses	Units
Major Elective (12 units total): Any MATH course numbered 400 or above except MATH 375, 475, 565, 575, 576, 577, 578	Take 2	6
Complimentary Studies or SF Studies or University Electives		9

Total: 15

Note: Complementary Studies

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

Code	Title	Units
DS 312	Data Analysis with Computer Applications	3
DS 408	Computer Simulation	3
ECON 101	Introduction to Microeconomic Analysis	3
ECON 301	Intermediate Microeconomic Theory	3
ECON 302	Intermediate Macroeconomic Theory	3
FIN 350	Business Finance	3
ISYS 363	Information Systems for Management	3
ISYS 463	Information Systems Analysis and Design	3
ISYS 464	Managing Enterprise Data	3
ISYS 650	Business Intelligence	3
PHIL 205	Formal Logic I	3
PHIL 350	Philosophy of Science	3
PHIL 351	Philosophy of Risk	3
PHIL 694	Philosophical Logic Workshop	3
PHIL 695	Advanced Logic Workshop	3

Students who have earned AA-T or AS-T degrees and are pursuing a similar B.A. degree at SF State are required to fulfill the Complementary Studies requirement as defined by the major department. Students should consult with a major advisor about how transfer units and/or SF State units can best be applied to this requirement in order to ensure degree completion within 60 units.