San José State UNIVERSITY

DEPARTMENT OF MATHEMATICS

B.A. MATHEMATICS

Program Requirements

Support Courses (13-15 units)

One year of calculus-based physics.....General Physics
Math 100W.....Technical Writing Workshop
Math 50 .....Scientific Computing I
or 109.....Mathematical Software
or 167.....Programming in SAS
or CS 46A.....Intro to Programming
or CS 49C.....Programming in C
or CS 49J.....Programming in Java

Required Lower Division Courses (13-16 units)

Math 30 or 30P/30W, 31, 32 .....Calculus I, II, III
Math 42 .....Discrete Mathematics

Required Upper Division Courses (18 units)

Math 108 .....Intro to Proofs
Math 112 .....Vector Calculus
or 113 .....Differential Geometry
or 115.....Modern Geometry & Transformations
or 138 .....Complex Variables
Math 128A .....Abstract Algebra I
Math 129A .....Linear Algebra I
Math 131A .....Intro to Analysis
Math 128B .....Abstract Algebra II
or 129B .....Linear Algebra II
or 131B .....Intro to Real Variables
or 175 .....Intro to Topology

Upper Division Electives *not* Counted Above (15 units)

Math 104 .....History of Mathematics
Math 109 .....Mathematical Software
Math 112 .....Vector Calculus
Math 113 .....Differential Geometry
Math 115 .....Modern Geometry & Transformations
Math 126 .....Theory of Numbers
Math 128B .....Abstract Algebra II
Math 129B .....Linear Algebra II
Math 131B .....Intro to Real Variables
Math 132 .....Advanced Calculus
Math 133A .....Ordinary Differential Equations
Math 133B .....Partial Differential Equations
Math 134 ..... Dynamical Systems
Math 138 .....Complex Variables
Math 142 .....Intro to Combinatorics
Math 143C.....Num Analysis & Sci Computing
Math 143M.....Num Analysis & Sci Computing
Math 161A.....Applied Statistics I
Math 161B.....Applied Statistics II
Math 162..... Statistics for Bioinformatics
Math 163..... Probability Theory
Math 164.....Mathematical Statistics
Math 171.....Foundations of Math & Computer Science
Math 175.....Intro to Topology
Math 177.....Linear & Non-Linear Optimization
Math 178.....Mathematical Modeling
Math 179 .....Intro to Graph Theory
Math 180, 196, 203.....(requires prior approval)

Up to 6 units of the above electives may be Upper Division Computer Science.

Total units required for degree.....120

Notes

1. To enroll in a mathematics course, a student must have obtained a **C-** or better in each of its prerequisite courses. A grade of **C-** or better is required in all courses counted toward the major.

2. Transfer students should see an advisor to file a course equivalency form for courses being used to satisfy the math major. This major requires 33 units of upper division math. All courses taken at a community college transfer to SJSU as lower division units. If linear algebra and/or differential equations were taken at a community college, then additional approved upper division math courses will be needed to obtain the required 33 units of upper division math. Math 101, 105, 106, 107A, 107B, 110L, and certain Math 196 courses cannot be used.

3. BA Mathematics majors only need to take a life science course to complete GE Area B - Science and Mathematical Concepts.

4. Students are expected to consult the SJSU Catalog for course descriptions, prerequisites, restrictions on enrollments for credit, and other university policies.

5. If a student wishes to pursue this degree but is not enrolled in this major, the student must submit a Change of Major Form with the Department Office (MH 308). The approved form must then be filed with the Student Services Center.

Computing Facilities

The department maintains a computer laboratory for student use to support course work in the department. Students may use the Computer Lab either by registering for one unit of lab or by paying a semester fee. There is also a Macintosh Lab serving classes for future K-12 teachers of mathematics. It is equipped with 20 iMacs. All computers in the department are networked.

For More Information
Department of Mathematics
San Jose State University
One Washington Square
San Jose, CA 95152-0103

http://www.sjsu.edu/math/

over
07/09

Sample Program for BA Mathematics

Freshman Year

Fall	Units	Spring	Units
GE Area E or MUSE	3	Math 31	4
GE A2 English 1A *	3	Math 42	3
GE A3 Philosophy 57 (rec.)	3	GE C3 English 1B	3
GE B4 Math 30 or 30P/30W *+	3 – 6	GE B2 Life Science	3
Physical Education	1	GE A1 Oral Communication	3
	13-16		16

Sophomore Year

Fall	Units	Spring	Units
Math 32	3	Math 131A	3
Math 108	3	Math 50 or Math 109 or Math167++ or CS 46A or CS 49C or CS 49J	2 – 4
Math 129A	3	Physics 51 or 52	4
GE B1 & B3 Physics 50	4	GE Area C1	3
GE Areas D2 & F	3	GE Areas D3 & F	3
	16		15-17

Junior Year

Fall	Units	Spring	Units
Math 128A	3	Math 128B or 129B or 131B** or 175‡	3
Math elective (upper division)	3	Math 112 or 113 or 115º or 138	3
GE Area C2	3	Physical Education	1
GE Area D1	3	GE Area Z Math 100W *	3
Free elective	3	Free elective	3
	15		13

Senior Year

Fall	Units	Spring	Units
Math electives (upper division)	6	Math electives (upper division)	6
GE Areas R & S	6	GE Area V	3
Free elective	3	Free electives	4 – 8
	15		12-17

* Requires a placement exam. See the Schedule of Classes for test dates and further explanation.

\+ Requires satisfaction of the ELM requirement.

++ Math 161A is a prerequisite for Math 167. Math 167 is only offered in the Fall.

º Math 115 is offered every semester except Spring of even years.

‡ Math 175 is only offered alternate Fall semesters and therefore would need to be taken during a Fall semester.

** Only offered in the Fall semester.