



B.S. APPLIED MATHEMATICS

CONCENTRATION in ECONOMICS and ACTUARIAL SCIENCE

Program Requirements

Support Courses (22-24 units)

Math 100W.....	Technical Writing Workshop
Econ 1A.....	Principles of Econ: Macroeconomics
Econ 1B.....	Principles of Econ: Microeconomics
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
Econ 101.....	Microeconomic Analysis
Econ 102.....	Macroeconomic Analysis
Bus2 190.....	Quantitative Business Analysis

Required Lower Division Courses (13-15 units)

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

Required Upper Division Courses (24 units)

Math 129A.....	Linear Algebra I
Math 133A.....	Ordinary Differential Equations
Math 143C.....	Numerical Analysis & Scientific Computing
Math 161A.....	Applied Statistics I
Math 161B.....	Applied Statistics II
Math 163.....	Probability Theory
Math 177.....	Linear and Nonlinear Optimization
or ISE 170.....	Operations Research
Math 178.....	Mathematical Modeling

Elective Upper Division Courses (9-10 units)

Choose from the following:

Math 131A*.....	Intro to Analysis
or Math 132.....	Advanced Calculus
Econ 103.....	Intro to Econometrics
Econ 104.....	Mathematical Methods for Economics
Econ 106.....	Managerial Economics
Econ 138.....	Business & Economic Forecasting
Econ 139.....	Principles of Investments
Bus1 170.....	Fundamentals of Finance
Bus1 172A.....	Investment Analysis
Bus1 172B.....	Portfolio Management
ISE 167.....	System Simulation

* Prerequisite: Math 108.

Total units required for degree120

For More Information

Department of Mathematics
San Jose State University
One Washington Square
San Jose, CA 95192-0103
www.sjsu.edu/math/

This program is designed for students who want to become actuaries and for students who want a program that integrates business, economics, and mathematics. Actuaries are trained to analyze risk and are typically employed by insurance companies, banks, the government, and companies that handle retirement funds.

For information concerning a career in actuarial science, see <http://beanactuary.org>

Notes

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

4. 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.

5. Prerequisite Listing for courses taught by other departments:

Econ 101:	Econ 1B
Econ 102:	Econ 1A
Econ 103:	Econ 3 or Math 161A
Econ 104:	Econ 1A; Econ 1B; and (Math 71 or Math 31)
Econ 106:	Econ 1B
Econ 138:	Econ 1A; Econ 1B; and Math 161A
Econ 139:	Econ 1A; and Econ 1B
Bus1 170:	Bus1 20N; Bus1 21; Econ 1A; Econ 1B; and Math 161A
Bus1 172A:	Bus1 170
Bus1 172B:	Bus1 172A; and Math 100W or Bus2 100W
Bus2 190:	Bus2 90, or Math 42 and Math 161A
ISE 167:	CS 46A or CS 49; and ISE 170; and Math 161A or ISE 130
ISE 170:	ISE 130 or Math 161A; and Math 129A

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.

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SJSU does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, marital status, pregnancy, age, disability, disabled veteran's or Vietnam veteran's status. This policy applies to all SJSU student, faculty and staff programs and activities. Questions regarding this policy should be directed to the Office of Equal Opportunity, Administration Room 112, (408) 924-1115.

Sample Program for BSACM – Emphasis in Economics, Finance, and Actuarial Science

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 Communications	3
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	13-16		16

Sophomore Year

Fall	Units	Spring	Units
Math 32	3	Math 161A	3
GE Areas D2 & F	3	Math 133A	3
GE Areas B1 & B3	3	GE D1 Econ 1B	4
Econ 1A	4	GE Area C1	4
Physical Education	1	GE Areas D3 & F	3
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	14		16

Junior Year

Fall	Units	Spring	Units
Math 161B	3	Math 143C	3
Econ 101	3	Math 129A	3
Math 50 or Math 109 [‡] or Math 167	2 - 4	GE Area Z Math 100W*	3
or CS 46A or CS 49C or CS 49J		Bus2 190	3
GE Area C2	3	Econ 102	3
Upper div. Elective for Major	3		
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	14 - 16		15

Senior Year

Fall	Units	Spring	Units
Math 163	3	Upper div. elec. for major	3
Math 177 or ISE 170	3	Upper div. elec. for major	3
Upper div. Elective for Major	3 - 4	GE Area V	3
GE Areas S	3	Free electives	2 – 8
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	15 - 16		11 - 17

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

+ Requires satisfaction of the ELM requirement.

‡ Math 109 is only offered in the Spring semester.