

ACTUARIAL PREPARATION MINOR

Offered at: San Luis Obispo Campus

Actuaries are professional risk managers that assess the likelihood and impact of future, uncertain events. They use their quantitative skills to prepare businesses for the financial impact of the risk to which they are exposed. Actuaries must meet rigorous standards for admission to professional societies. To practice as an actuary in the United States, one must become an Associate or Fellow of the Society of Actuaries (SOA) or the Casualty Actuarial Society (CAS).

The Actuarial Preparation Minor provides education in economics, finance, probability, and statistics. The coursework will help students satisfy the Validation by Educational Experience (VEE) requirements of the SOA and CAS, and will prepare them for the actuarial exams, which are also prerequisite to SOA or CAS membership. The minor offers VEE courses in the areas of Finance (BUS 3343), Accounting (BUS 2212, BUS 2214), Economics (ECON 2030, ECON 2040), and Mathematical Statistics (STAT 4620).

The minor is open to any major, but it is especially suited to students majoring in statistics, mathematics, business, or economics. Students should be aware that courses within the minor have calculus (MATH 1261, MATH 1264, or MATH 1267), a course in computer programming (BUS 3392, ECON 3015, CSC 1001, CSC 1032, or STAT 1810), a course in linear algebra MATH 1151, and certain introductory statistics courses (STAT 1220, STAT 3210, or STAT 3520) as prerequisites. Many of these courses are already required for the majors most closely aligned with the actuarial profession. Students should complete these prerequisites before applying to the minor. Those interested in the minor should consult the minor website (<https://statistics.calpoly.edu/content/actuary>).

Additional information about the actuarial profession, societies, and exams, as well as additional suggested coursework, is available at the website above.

Program Learning Objectives

1. Assess the likelihood and impact of future, uncertain events
2. Evaluate the financial impact of risks to which businesses are exposed
3. Apply methods for selecting and validating models for analyzing data
4. Apply fundamental probability tools for quantitatively assessing risk at the level of the Society of Actuaries (SOA) Exam P (Probability)
5. Apply fundamental concepts of financial mathematics and calculate present values of cash flows at the level of the Society of Actuaries Exam FM (Financial Mathematics)
6. Demonstrate competency in an area outside the student's major relating to actuarial science

Minor Requirements and Curriculum

The minor must be completed prior to, or at the same time as, the requirements for the bachelor's degree. A major and a minor may not be taken in the same degree program, and a minor is not required for a degree. Requirements for the minor include:

- At least half of the units must be from upper-division courses (3000-4000 level).
- At least half of the units must be taken at Cal Poly (in residence).
- No more than one-third of the units will be taken with credit-no credit grading (CR/NC), not counting courses with mandatory CR/NC. Departments may further limit CR/NC grading if desired.
- A minimum 2.0 GPA is required in all units counted for completion of the minor.

Code	Title	Units
REQUIRED COURSES		
BUS 2212 or BUS 2214	Financial Accounting for Nonbusiness Majors Financial Accounting	3
BUS 3343	Quantitative Methods in Finance	3
ECON 2030 or ECON 2040	Microeconomics Macroeconomics	3
STAT 2610	Introduction to Probability and Simulation	3
Approved Electives		9
Students majoring in STAT or MATH must select from the following:		
BUS 3431	Security Analysis and Portfolio Management	
BUS 3438	Corporate Finance	
BUS 3440 or BUS 3441	Financial Modeling and Visualization in Excel Financial Modeling and Analytics in Python or R	
BUS 4439	Fixed Income Securities Market	

BUS 4442	Introduction to Futures and Options
BUS 4445	Risk Management and Insurance Planning
Students majoring in BUS or ECON must select from the following:	
DATA 3301	Introduction to Data Science
DATA/STAT 5550	Statistical Learning with R
STAT 3430	Applied Regression Analysis
or STAT 3530	Applied Linear Models
STAT 4610	Probability Theory
STAT 4620	Statistical Theory
STAT 4760	Statistical Analysis of Time Series
STAT 4770	Survival Analysis Methods
STAT 4790	Applied Multivariate Statistics

Students in other majors may select from either list, with at least one course from each list

Total Units**21**