



Actuarial science is the mathematics of risk management. Actuaries create programs to protect people financially from expected and unexpected events, such as illnesses, accidents, unemployment or premature death. Their work requires making financial analyses based on broad business perspectives and management insight, using mathematical, financial and analytic skills.

Actuaries specialize in such areas as group benefits, individual life and annuity insurance, investments, pensions or property and casualty insurance. Here is a sample of the many activities in which actuaries are involved:

- Projecting what the AIDS epidemic will cost life and health insurance companies in five, ten and twenty years
- Determine the rates for malpractice insurance for doctors
- Developing long-term health care benefits and insurance policies
- Studying various social security programs
- Designing new computer software packages and programs for actuaries
- Determining rates for automobile and homeowners insurance
- Assisting companies in financial and tax planning
- Reviewing and developing insurance policies for unusual or catastrophic events
- Creating a new pension program for a business
- Advising on the benefits costs for labor union contract negotiations

The Society of Actuaries (SOA) is the professional organization for life actuaries and The Casualty Actuary Society (CAS) is the professional organization for casualty and property actuaries. Actuaries work in many capacities within insurance companies, consulting and accounting firms, private corporations, government agencies, and colleges and universities. They hold positions in general management, investments, research, long-range planning and accounting, marketing and underwriting.

Both life and casualty actuaries must pass a series of exams to achieve Associateship and then Fellowship in their respective society. The following exams can be applied toward credit for Associateship in both societies, SOA and CAS:

Exam 1: Mathematical Foundations of Actuarial Science

Exam 2: Interest Theory, Economics and Finance

Preparation for Exam 1: M261, ST420, ST430

Preparation for Exam 2: ECCC 202, ECCC 204, BF311, BF300

Students should have passed one or more exams by time of graduation, or shortly thereafter. Otherwise the chances for getting a starting actuary position might be diminished. Most insurance and consulting companies provide their employees with study time, study materials, and exam preparation courses. Many employers reward successful exam performance with a pay increase or bonus.

As active participants in the business and financial community, actuaries use many different skills on the job. They need analytical, financial, mathematical, and quantitative skills to solve certain business problems, while leadership abilities are a key to attaining top management positions. Communication skills are also important to the successful actuaries, since their work requires close interaction with both technical and non-technical people.

Actuaries must look at the overall picture, use hindsight and foresight as a guide before making a business decision. A degree in actuarial science, economics, mathematics, finance or statistics is considered good preparation for a career as an actuary. Courses in accounting, marketing, computer science, foreign languages, business writing, social sciences and speech are highly recommended.

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