

# Career Spotlight

## Actuary

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*An actuary is a business professional who deals with the financial impact of risk and uncertainty. Actuaries apply mathematical and statistical theories to solve real business problems. Actuaries assemble and analyze data to estimate the probability and likely cost of an event such as death, sickness, injury, disability, or loss of property. They also address financial questions; including those involving the way a company should invest its resources to maximize its return on investments. "Actuaries are in high demand, and they are highly paid for the services they render."*



### EDUCATION

Actuaries need a strong foundation in mathematics, statistics, and general business. Coursework in computer science, writing, and public speaking are also helpful. The Casualty Actuarial Society (CAS) and the Society of Actuaries (SOA) certify actuaries to work with the public through the successful completion of exams.

### WHEN MATH IS USED

Actuaries assemble and analyze data to estimate the probability and likely cost of an event such as death, sickness, injury, disability, or loss of property. Using their broad knowledge of statistics, finance, and business, actuaries help design insurance policies, pension plans, and other financial strategies in a manner which will help ensure that the plans are maintained on a sound financial basis. Actuaries also estimate the probability and likely economic cost of an event such as death, sickness, an accident, or a natural disaster.

### POTENTIAL EMPLOYERS

Actuaries are essential to the insurance industry; to other businesses and corporations, including sponsors of pension plans; and to government agencies, such as the Government Actuary's Department in the UK or the Social Security Administration in the US.

### FACTS

In 2009, a Wall Street Journal survey on the best jobs in the United States listed an actuary as the second best job. In 2006, U.S. News & World Report included actuaries among the 25 Best Professions that it expects will be in great demand in the future.

### CITATIONS

<http://en.wikipedia.org/wiki/Actuary>  
<http://www.bls.gov/oco/ocos041.htm>  
<http://online.wsj.com/article/SB123119236117055127.html>  
<http://www.bls.gov/oes/current/oes152011.htm>  
<http://www.bls.gov/ooh/math/actuaries.htm#tab-2>

### MATH REQUIRED

- College Algebra
- Trigonometry
- Calculus I and II
- Linear Algebra
- Probability and Mathematical
- Statistics
- Applied statistics
- Actuarial Mathematics
- Optional courses in numerical analysis, some training in operations research, substantial training in computer science

Low-end Salary: \$55,780/yr

Median Salary: \$93,680/yr

High-end Salary: \$175,330/yr