Related Careers

Actuaries need a strong background in mathematics, statistics, and related fields. Other workers whose jobs involve related skills include accountants and auditors, budget analysts, economists, market and survey researchers, financial analysts and personal financial advisors, insurance underwriters, mathematicians, and statisticians.

Resources

- O*Net Online online.onetcenter.org/
- Society of Actuaries (SOA) www.soa.org
- Casualty Actuarial Society (CAS) www.casact.org
- Be An Actuary, jointly sponsored by SOA and CAS www.beanactuary.org
- American Academy of Actuaries www.actuary.org

Sources of information for this publication:
O*Net Online, online.onetcenter.org/

For more information, contact:
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Columbia, Missouri 65211
(573) 884-9700
Actuarial Science

Actuarial science is the science of applying mathematical and statistical models to improve financial decision-making by evaluating the financial implications of uncertain future events. One of the main functions of actuaries is to help businesses assess the risk of certain events occurring and to formulate policies mimicking the cost of that risk. For this reason, actuaries are essential to the insurance industry. Actuaries assemble and analyze data to estimate the probability and likely cost of the occurrence of an event such as death, sickness, injury, disability, or loss of property.

Actuaries also address financial questions, including those involving the level of pension contributions required to produce a certain retirement income and the way in which a company should invest resources to maximize its return on investments in light of potential risk. Actuaries help design insurance policies, pension plans, and other financial strategies in a manner which will help ensure plans are maintained on a sound financial basis.

Skills and Abilities

Actuaries need a strong background in mathematics, statistics, finance, business and related fields. Actuaries should also have strong computer skills and be able to develop and use spreadsheets and databases, as well as standard statistical analysis software. Knowledge of computer programming languages, such as Visual Basic for Applications, SAS, or SQL, is also useful.

Majors at MU

Statistics (A&S)
Mathematics (A&S)
Business Administration (BUS)
Economics (A&S)
Agricultural Economics (CAFNR)

Typical Career Opportunities

- Actuarial Analyst
- Consulting Actuary
- Predictive Modeler
- Actuarial Programmer
- Casualty Actuary
- Risk Analyst

Preparation

- Applicants for beginning actuarial jobs usually have a bachelor’s degree in mathematics, actuarial science, statistics, or a business-related discipline such as economics, finance, or accounting. Courses in economics, accounting, finance, and insurance also are useful.
- Additionally, actuaries should be well-rounded individuals who, in addition to having acquired a strong technical background, have some training in business and liberal arts and possess strong communication skills.
- Some companies hire applicants without specifying a major, provided applicants have a working knowledge of mathematics, including calculus, probability, and statistics, and they have demonstrated this knowledge by passing one or two actuarial exams required for professional designation.
- You become an actuary by passing a series of professional examinations conducted by the Society of Actuaries (SOA) or Casualty Actuarial Society (CAS) and by developing your professional skills while working at an insurance company, consulting firm, or some other similar organization.

Career Information

Employment of actuaries is expected to grow rapidly through 2018. Job opportunities should remain good for those who qualify, because the stringent qualifying examination system restricts the number of candidates.

Employment of actuaries is expected to increase by about 21 percent over the 2008-2018 period, which is much faster than the average for all other occupations. Employment growth in the insurance industry—the largest employer of actuaries—is expected to continue at a stable pace, while more significant job growth is likely in other industries, such as health care and consulting firms.

Median annual earnings of actuaries were $84,810 in May 2008. According to the National Association of Colleges and Employers, annual starting salaries for graduates with a bachelor’s degree in actuarial science averaged $52,741 in 2007. Insurance companies and consulting firms give merit increases to actuaries as they gain experience and pass examinations. Some companies also offer cash bonuses for each professional designation achieved.