



INDUSTRY OVERVIEW: ACTUARY AND STATISTICIAN

Overview

This guide will touch on two career paths for those with an aptitude and interest in careers that use mathematics. However, there are a wide range of careers that involve using mathematics and the quantitative, analytical, and problem solving skills gained from this liberal arts major. Careers in Finance, Education, Computers, Healthcare, Law, Consulting, and Accounting, which may utilize similar skills, are covered in separate Industry Overviews.

Career Tracks

Actuaries: identify risk and use analytical and quantitative skills to assess probability and give a cost value related to it. A strong mathematics background is required as well as the ability to apply those skills to real-life situations. Actuaries help insurers mitigate the chances of losses and they weigh risk in pension funds, stock and bond portfolios, and hedge funds. They analyze statistical data, such as mortality, accident, sickness, disability, and retirement rates and construct probability tables to forecast risk and liability for payment of future benefits. Actuaries calculate the cost of insurance policies based on risk factors that will result in the insurance company being able to pay all claims while still earning a profit. In the pension industry, actuaries use their math and analytical skills to develop, plan, and analyze pension plans. Actuaries are compensated well and work fairly regular hours. To advance in the field and increase earnings, they are required to take a series of exams.

Popular Majors: Math, Computer Science, Engineering, Physics, Economics, and Finance. Prior to looking for a full time job, candidates are expected to have two exams completed and an internship in the actuarial field. One of the most important qualifications for an entry-level candidate is exam progress. Exams can take many years to complete but it is important to remember that much of the studying can be done while working.

Statistician: designs surveys and experiments and analyzes and interprets data into digestible information. Statisticians work in almost any field, including education, entertainment, finance, manufacturing, medicine, and psychology. Statisticians spend a great deal of time crunching numbers to evaluate products, services, and performance and make recommendations for improvements. They use their data to analyze information, whether it is for the spread of disease or the popularity of a television show. While statisticians need excellent mathematical and analytical skills, they also need excellent communication and writing skills. They need to be able to communicate their findings and make recommendations to non-statisticians. While a

bachelor's degree is sufficient for some positions, many organizations prefer a graduate degree; usually a doctorate. Successful statisticians have a strong understanding of and passion for numbers and computers and enjoy using numbers to make recommendations and solve problems.

Requirements / Skills

In addition to technical and quantitative abilities, analytical skills and attention to detail are very important for careers involving mathematics. The above positions also involve a significant amount of problem solving. In addition, excellent interpersonal skills are increasingly important, as many professionals will need to explain their ideas, rationale, and quantitative analysis to nontechnical people.

Salary

In general jobs as an actuary or statistician pay well. The starting salary for most entry level positions ranges from \$45,000-\$70,000 depending on the position and type of organization. With more experience and more responsibility salaries go well into the six figure range.

Professional Associations

American Mathematical Society, www.ams.org

American Statistical Association, www.amstat.org

International Actuarial Association, www.actuaries.org

Society of Actuaries, www.soa.org

Casualty Actuarial Society, www.casact.org (insurance)

Society for Industrial and Applied Mathematics, www.siam.org

Websites

AMS.org/careers

Beanactuary.com