Are you interested in a career as an actuary?

What is an Actuary?

[Merriam-Webster] A person who calculates insurance and annuity premiums, reserves, and dividends.

[Wikipedia] A business professional who deals with the impact of risk and uncertainty. Actuary provides expert assessments of financial security systems, with a focus on their complexity, mathematics, and mechanisms. Actuary mathematically evaluates the probability of events and quantifies the contingent outcomes in order to minimize financial losses associated with uncertain undesirable events.


Work Environment: Most actuaries work in an office setting. Actuarial consultants frequently travel to meet with clients.

Annual Salary: The median annual wage of actuaries was $87,650 in May 2010.

Job Outlook: Employment of actuaries is expected to grow by 27 percent between 2010 and 2020.

Got Skills?  (edited from http://www.beanactuary.org)

Actuaries bring a special set of skills to their work:

- Specialized knowledge in calculus, statistics, probability
- Good business sense: finance, accounting, economics
- Strong computer skills: statistical software, programming languages, database manipulation, formulating spreadsheets

If you are currently pursuing an undergraduate degree and are interested in an actuarial career, your equation for success should include the following courses: finance, microeconomics, macroeconomics, calculus, linear algebra, probability and statistics, computer science, marketing, communication courses, and among others.

Actuarial Preliminary Exams & VEE  (check SOA and CAS websites for advanced level of exams)

- Exam P (called by the SOA) / 1 (called by the CAS) [Probability Exam]: Knowledge of probability with application to insurance and risk management settings. A thorough command of calculus and probability topics is assumed.
- Exam FM / 2 [Financial Mathematics Exam]: Knowledge of interest theory and an introduction to derivative securities.
- Exam MLC / 3L [Life Contingencies and Statistics Exam]: Knowledge of the theoretical basis of life contingent models and the application of those models to insurance and other financial risks.
- Exam C / 4 [Construction and Evaluation of Actuarial Models Exam]: Actuarial methods in modeling. The frequency and severity models beyond those covered in Exam MFE / 3F and Exam MLC / 3L are covered.

The VEE [Validation by Educational Experience] requirement is jointly sponsored by the Society of Actuaries (SOA), Casualty Actuarial Society (CAS) and Canadian Institute of Actuaries (CIA). There are three VEE topics:

- Economics
- Corporate Finance
- Applied Statistical Methods

The VEE topics are not prerequisites for the exams listed above and may be fulfilled independently of the exam process. However, you must pass two SOA or CAS actuarial exams before applying to have your VEE credit added to your record.

What You Should Do at Cal Poly Pomona?

Most suitable undergraduate major is Mathematics with Applied Math / Statistics Subplan.

In addition to the required core courses for Math major, you are strongly encouraged to complete following courses offered at Cal Poly Pomona for the VEE requirement: EC 201 / EC 202 for VEE Economics; FRL 300 / FRL 301 or GBA 546 for VEE Corporate Finance; STA 432 / STA 525 for VEE Applied Statistical Methods.

Courses that help you prepare your actuarial exams:

- STA 241 / STA 341 or STA 440 / STA 441: Exam P / 1 with a thorough command of calculus (MAT 114/115/116/214/215)
- STA 425: Exam MLC / 3L
- STA 430 / STA 432 / STA 525: Exam C / 4

Any inquiries about an actuary may be addressed to Dr. John Rock, Dr. Alan Krinik, or Dr. Hoon Kim of Math & Statistics Department or simply visit its related URLs: http://www.beanactuary.org/  http://www.soa.org/  http://www.casact.org/