

University of Central Florida



## Department of Statistics & Data Science

### Undergraduate Degree in Actuarial Science

Department webpage  
[www.sciences.ucf.edu/statistics/](http://www.sciences.ucf.edu/statistics/)

#### What is an Actuary?

The actuarial field is one of the fastest growing professions according to the US Department of Labor. It has been consistently rated as one of the top five jobs in the U.S. based on income, job stability, demand, and other factors.

The actuarial field is unique, as it integrates mathematics, statistics, economics, and finance. This gives actuaries a wide range of job opportunities.

Actuaries must have good communication skills, high ethical standards, and extensive academic training. Because their judgment is heavily relied upon, actuaries' career paths often lead to upper management and executive positions.

Most actuaries have at least an undergraduate degree and must pass a series of professional examinations in order to work in the profession. The two testing bodies in North America are the Society of Actuaries (SOA) and the Casualty Actuarial Society (CAS). Many students complete one or more of these exams while in college, and most reach Associateship within three to five years.

For more information about the actuarial field, check out:

<https://www.bls.gov/oes/current/oes152011.htm>

#### What do Actuaries do?

Actuaries work in various fields, including:

- Insurance companies
- Consulting firms
- Governmental agencies
- Colleges and universities
- Banks and investment firms
- Large corporations
- Accounting firms

Actuaries mainly work in two areas of specialty:

- Life, Health and Pension (including Medicare and Social Security, etc.)
- Property and Casualty (risks such as auto, homeowners, workers compensation, liability, and natural disasters, etc.)

What Actuaries do on the job:

- Determining rates for all types of insurance
- Financial projections involving future uncertainty
- Forecasting the potential impact of catastrophes
- Analyzing investment programs
- Assessing and managing risk for companies
- Analyzing future costs of Social Security and

**For more information, go to:**

[www.beanactuary.org](http://www.beanactuary.org)

[www.soa.org](http://www.soa.org)

[www.casact.org](http://www.casact.org)

[www.actuary.ca](http://www.actuary.ca)

### What Sets UCF apart?

The Department of Statistics at UCF has several professors who have passed the first five preliminary SOA/CAS exams. The Department offers courses and programs which lead to a Bachelor of Science and a minor in Actuarial Science, a Bachelor of Science and a minor in Statistics, a Bachelor of Science in Data Science, and a Master of Science in Data Science with a track in Data Science. In addition to the Department's great academic programs, we also have an Actuarial Club.

### How can the Actuarial Club help?

The Actuarial Club at UCF is open to all UCF students. We provide our members with

- Career and internship opportunities
- Exam study groups
- Updates on current actuarial events
- Training with Excel and other useful computer programs
- Access to exam study materials in the Statistics Library
- Assistance with various requirements that must be met upon graduation

Visit the club's website at:

<https://sciences.ucf.edu/statistics/undergraduate/actuarial-science-club/>

### Courses Required for Bachelor Degree

The undergraduate degree in Actuarial Science has many of its core requirements in common with Statistics, Business, and Mathematics. These include:

- Three courses in Statistical Methods
- Three courses in Calculus
- Two courses in Statistical Theory
- Macro and Micro Economics
- Financial Accounting
- Theory of Interest
- Life Contingencies I & II
- Loss Models I & II
- Introduction to Derivatives
- Theory of Derivative Pricing
- Computer Science courses

The Department of Statistics & Data Science offers the following Bachelors' Degrees:

- B.S. in Actuarial Science
- B.S. in Statistics
- B.S. in Data Science

Please look at the Statistics and Data Science brochures as well as UCF catalog for a quick review of these programs.

### Contact Person for Actuarial Science Advising

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### Advising Help at-a-Glance

Login to myucf. From the drop-down box under Academics, navigate to the Student Center and choose Degree Audit and expand all sections of your Degree Audit. Follow the instructions within each section to choose courses (from the course options displayed). For course selections by semesters, follow the suggested Plan of Study displayed in your catalog.

**Tentative Course Schedule by Semester** (This is one of numerous possible plans of study. Make adjustment as needed.)

<p><b>Freshman Year - Fall (13 Credit Hours)</b>  ECO 2013 Principles of Macroeconomics; Credit Hours : 3  STA 2023 Statistical Methods I; Credit Hours : 3  MAC 2311 - Calculus with Analytic Geometry I; Credit Hours: 4  ENC 1101 Composition I; Credit Hours : 3</p> <p><b>Freshman Year - Spring (13 Credit Hours)</b>  MAC 2312 Calculus with Analytic Geometry II ; Credit Hours : 4  STA 4163 Statistical Methods II; Credit Hours : 3  ECO 2023 Principles of Microeconomics; Credit Hours : 3  ENC 1102 Composition II ; Credit Hours : 3</p> <p><b>Freshman Year - Summer (7 Credits)</b>  MAC 2313 Calculus with Analytic Geometry III Credit Hours: 3  GEP Credit Hours: 3</p>	<p><b>Sophomore Year - Fall (12 Credit Hours)</b>  COP 3223C Introduction to Programming with C Credit Hours: 3  STA 4164 Statistical Methods III Credit Hours: 3  STA 4321 Statistical Theory I Credit Hours: 3  ACG 2021 Principles of Financial Accounting Credit Hours: 3</p> <p><b>Sophomore Year - Spring (12 Credit Hours)</b>  STA 4852 Applied Time Series Credit Hours: 3  FIN 3403 Business Finance Credit Hours: 3  COT 4500 Numerical Calculus Credit Hours: 3  STA 4322 Statistical Theory II Credit Hours: 3  Take SOA Exam P (Probability) Credit Hours: 3</p> <p><b>Sophomore Year - Summer (6 Credit Hours)</b>  GEP Credit Hours: 3  GEP Credit Hours: 3</p>
<p><b>Junior Year - Fall (13 Credit Hours)</b>  ENC 3241 Writing for the Technical Professional Credit Hours: 3  STA 4183 Theory of Interest Credit Hours: 3  Restricted Elective Credit Hours: 3 Credit Hours: 3  BSC 2010C Biology I Credit Hours: 4</p> <p><b>Junior Year - Spring (17 Credit Hours)</b>  STA 4184 Introduction to Derivative Markets Credit Hours: 3  MAS 3105 Matrix and Linear Algebra Credit Hours: 4  Restricted Elective Credit Hours: 3  CHM 2045C or PHY 2048C or PHY 2053C Credit Hours: 4  Free Elective Credit Hours: 3</p>	<p><b>Senior Year - Fall (15 Credit Hours)</b>  STA 4130 Life Contingencies I Credit Hours: 3  STA 4133 Loss Models I Credit Hours: 3  STA 4186 Theory of Derivative Pricing Credit Hours: 3  GEP Credit Hours: 3  Free Elective Credit Hours 3</p> <p><b>Senior Year - Spring (12 Credit Hours)</b>  STA 4131 Life Contingencies II Credit Hours: 3  STA 4135 Loss Models II Credit Hours: 3  GEP Credit Hours: 3  Free Elective Credit Hours: 3</p>