

# Actuarial Science

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## Career Overview

Actuarial science has been rated among the top career paths in the nation by media outlets including The Wall Street Journal, Forbes, and CNN. The Actuarial Science major at Smeal prepares students for careers in insurance, consulting, finance, and government agencies that demand quantitative and qualitative skills.

Actuaries are vital to the insurance industry, calculating the costs of life or health insurance, or how much an insurance company can expect to pay in claims due to natural disasters, car accidents, and other situations.

## Employment Prospects

Smeal Actuarial Science students are highly sought by industry and government for internships and full-time jobs. Due to the size of the Smeal Actuarial Science program, Penn State hosts one of the largest actuarial career fairs in the country with more than 30 companies visiting campus each year.

## Major Overview

The Actuarial Science major provides background in the wide range of knowledge needed to be an actuary including calculus, probability and statistics, financial and actuarial mathematics, economics, finance, risk management, pensions, and insurance. Math is a critical part of this major.

Smeal offers the courses needed to satisfy the professional Verification by Educational Experience (VEE) requirements and courses designed to help you pass five of the preliminary professional examinations in the Society of Actuaries (SOA) or Casualty Actuarial Society (CAS), which one needs to be an actuary. Employers often provide support to help students pass the remaining exams after graduation.

## Preparing to Enroll in the Major

Enrollment in the Actuarial Science (ACTSC\_BS) major is contingent upon several criteria, which include the timing and completion of a specified range of cumulative credits at Penn State. Students apply for the major once they have earned a minimum of 40 but no more than 59 cumulative credits. These credits include required business foundation and related courses. In addition to the course and credit window requirements, students must attain an overall competitive GPA in all courses.



## Fast Facts

- › Actuary has consistently been rated near the top of The Wall Street Journal's best jobs.
- › The average starting salary for Penn State actuarial science majors is \$75,000, while the average across all Smeal majors is \$60,093.
- › Recruiters prefer Smeal more than any other school according to a Wall Street Journal survey.
- › More Penn State students pass the actuarial exams each year than any other school in the United States.
- › Some Penn State students pass as many as five actuarial exams before graduation.
- › Penn State is designated as a "Center of Actuarial Excellence" by the Society of Actuaries.
- › Courses taken by our students include Probability Theory (P Exam), Financial Mathematics (FM Exam), Actuarial Mathematics (LTAM Exam), Financial Economics (IFM Exam), and Loss Models and Credibility Theory (STAM Exam).



## Actuarial Science Major Requirements

A grade of C or higher is required in all major courses.

**Prescribed ACTSC Courses**  
(15 credits)

- > **MATH 140 (4):**  
Calculus with Analytic Geometry I
- > **MATH 141 (4):**  
Calculus with Analytic Geometry II
- > **MATH 231 (2):**  
Calculus of Several Variables

- > **MATH (STAT) 414 (3):**  
Introduction to Probability Theory
- > **RM 320W (3):**  
Risk Management and Insurance
- > **RM 410 (3):**  
Financial Mathematics for Actuaries
- > **RM 411 (3):**  
Actuarial Mathematics I
- > **RM 412 (3):**  
Actuarial Mathematics II
- > **RM 430 (3):**  
Life and Health Insurance

**ACTSC Electives** (6 credits) select one course from each category:

**Category One:**

- > **RM 401 (3):**  
Fundamentals of Private Pensions
- > **RM 420 (3):**  
Property, Casualty, and Health Insurance

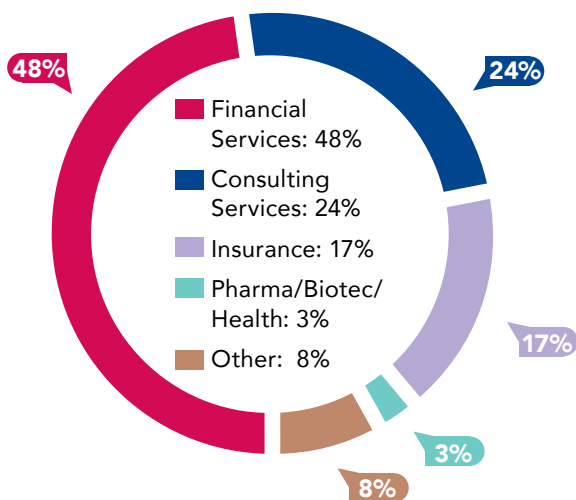
**Category Two:**

- > **RM 415 (3):**  
Modeling for Actuarial Science
- > **STAT 483 (3):**  
Statistical Programming in SAS

### Employment Statistics

Average Starting Salary: **\$75,000**  
Average Signing Bonus: **\$6,000**  
Average Internship Wage: **\$24/hour**

### Employment By Industry



### Top Full-Time Companies

**AON** Hewitt

**Deloitte.**



Prudential

**TRANSAMERICA**

**Willis  
Towers  
Watson**

### Top Internship Companies

**Cigna.**

**HIGHMARK.**



Prudential

**pwc**

**TRANSAMERICA**

## Faculty Advisors

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