

# ACTUARIAL SCIENCE

Our Actuarial Science major prepares you to excel in a field that is actively seeking talented, analytically oriented students who understand mathematics and financial theory. Actuaries are highly sought after by companies that analyze large amounts of historical data to assess risk and forecast long-term patterns. You will gain a strong foundation in the discipline through courses that emphasize math, statistics, finance and risk management.

The mix of business and traditional actuarial science experience is a valuable skill set for employers. With a Bentley degree in Actuarial Science, you not only will develop excellent analytical skills, but also understand how this important information relates to an organization's broader operations. You also will learn how to communicate these complex issues to all levels of your organization.

In addition, the Actuarial Science major offers preparation for up to four actuarial exams (Exams P, FM, IFM and LTAM) and all of the necessary VEE (Validation by Educational Experience) credit.

## EXPERIENTIAL LEARNING

You can choose to further your classroom knowledge through our hands-on learning programs: corporate partnerships, internships, service-learning and study abroad.

By participating in these opportunities, you will gain valuable real-world experience, learn about diverse people and perspectives, and gain new skills for living and working in a global community.

## CAREERS

A number of highly regarded sources, including *U.S. News and World Report* and *CNN Money*, have named an actuarial position as one of the best jobs in America based on career prospects, salary and type of work. Individuals with strong quantitative skills who enjoy problem solving and working with data are positioned very well for success in this industry. Diverse types of organizations regularly employ actuaries, including:

- Banks and investment firms
- Colleges and universities
- Consulting firms
- Government insurance departments
- Insurance companies
- Labor unions
- Public accounting firms
- Rating bureaus

## REQUIRED AND ELECTIVE COURSES

### MAJOR REQUIREMENTS

Calculus III

Linear Algebra

Mathematical Statistics

Continuous Probability for Risk Management

Actuarial Topics in Probability and Risk Management

AND/OR

Mathematical Theory of Interest

Mathematical Sciences elective

Regression Analysis

### FOR YOUR REMAINING COURSE(S), YOU MAY CHOOSE FROM THE FOLLOWING:

Discrete Probability

Financial Calculus and Derivative Pricing

Long-Term Actuarial Mathematics I and II

Mathematics of Investments and Financial Markets

Mathematical Statistics

Mathematics of Discrete Options Pricing

### MATHEMATICAL SCIENCES ELECTIVES (PARTIAL LIST)

Probability Models for Business Decision-Making

Linear Models for Business Decision-Making

Discrete Mathematics

Mathematical Logic

Game Theory

Differential Equations

Data Science

Data Mining

Introduction to Generalized Linear Models and Survival Analysis in Business

Additional requirements apply for degree completion

## FOR MORE INFORMATION

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**BENTLEY**  
**UNIVERSITY**

Students pursuing a Bachelor of Science degree in Actuarial Science take the following courses:

### GENERAL EDUCATION REQUIREMENTS

Information Technology  
Expository Writing I  
Expository Writing II  
Calculus I  
Calculus II  
Government  
Problems of Philosophy  
Principles of Microeconomics  
Principles of Macroeconomics  
First-Year Seminar (one credit)

For each of the following requirements, you can choose an applicable course from a wide variety of offerings:

Literature/Cinema  
Natural Sciences  
History  
Behavioral Sciences  
Humanities/Social Science elective

### BUSINESS CORE REQUIREMENTS

Legal and Ethical Environment of Business  
Tools and Concepts  
in Accounting and Finance  
Practice and Applications  
in Accounting and Finance  
Business Statistics  
Marketing-Operations Fundamentals  
AND/OR  
Human Behavior and Organizations

### BUSINESS-RELATED AND UNRESTRICTED ELECTIVES

Choose five courses

### ARTS AND SCIENCES ELECTIVES

Choose eight courses

# TAKE IT TO THE NEXT LEVEL.

After you've selected a major, what else can you do to make your education work harder? Customize your degree with an optional second major, choose a minor or get a head start on graduate study.

**OPTIONAL SECOND MAJORS** Students majoring in Actuarial Science can add an optional Liberal Studies or Business Studies major to complement their degree without taking any additional courses. The Business Studies major ensures students leave campus with a strong foundation in the key principles of business including marketing, finance and operations. The Liberal Studies major allows students to choose from one of seven concentrations below and provides a well-rounded perspective that is highly sought after by today's leading employers.

The LSM concentrations are:

- American Studies
- Diversity and Society
- Earth, Environment and Global Sustainability
- Ethics and Social Responsibility
- Global Perspectives
- Health and Industry
- Media Arts and Society

**MINORS** You can further specialize your studies through one of our minors.

- Accountancy
- Actuarial Science
- Business Economics
- Business Studies (BA students only)
- Computer Information Systems
- Data Technologies
- Earth, Environment and Global Sustainability
- English and Media Studies
- Entrepreneurial Studies
- Finance
- Gender Studies
- Global Management
- Health and Industry
- History
- Human Resources Management
- Information and Process Management
- Information Design and Corporate Communication
- International Affairs
- International Economics
- Law
- Leadership
- Management
- Marketing
- Mathematical Sciences
- Modern Languages
- Nonprofit Organizations
- Philosophy
- Politics
- Psychology
- Public Policy
- Sociology
- Spanish for Business
- Sports Business Management
- Supply Chain/Operations Management
- Sustainable Investing

**FALCON FAST-TRACK PROGRAM** The Falcon Fast-Track program is designed for motivated undergraduate students with high academic standing in ANY undergraduate major. Depending on the program of study, master's degree requirements may be completed with one year of additional full-time academic work. Students enrolled in the Falcon Fast-Track Program have the opportunity to pursue one of nine master's programs.

For more information, visit [bentley.edu/fast-track](http://bentley.edu/fast-track).