

ACTUARIAL SCIENCE MAJOR (B.S.)

Actuarial mathematics is used primarily in the insurance, banking, and financial services industries to estimate risks, price products, and determine required reserves. Bentley offers specialized courses to help students prepare for up to four of the professional exams administered by the Society of Actuaries and fulfill the Validation by Educational Experience (VEE) requirements of the Society of Actuaries and the Casualty Actuarial Society. Most students complete at least one internship during their undergraduate years and the department maintains close contact with many of our alumni/alumnae who work in this field.

For further information about degree requirement policies and guidelines, see the Degree Requirements (catalog.bentley.edu/undergraduate/degree-requirements/) page.

Major Requirements

Prerequisite Course(s)

Course	Title	Credits
MA 131	Calculus I	3
or MA 131L	Calculus I with Lab	

Program Requirements

Course	Title	Credits
Required Courses		
MA 139	Calculus II	3
or MA 139L	Calculus II with Lab	
MA 214	Intermediate Applied Statistics	3
MA 233	Calculus III	3
MA 239	Linear Algebra	3
MA 252	Regression Analysis	3
MA 263	Continuous Probability for Risk Management	3
MA 310	Actuarial Topics in Probability and Risk Management	3
or MA 357	Mathematical Theory of Interest	
Select two of the following:		6
MA 243	Discrete Probability	
MA 310	Actuarial Topics in Probability and Risk Management ¹	
MA 335	Financial Calculus and Derivative Pricing	
MA 343	The Mathematics of Discrete Options Pricing	
MA 352	Mathematical Statistics	
MA 357	Mathematical Theory of Interest ¹	
MA 370	Mathematics of Investment & Financial Markets	
MA 374	Fundamentals of Short-Term Actuarial Mathematics	
MA 375	Fundamentals of Long-Term Actuarial Mathematics	
MA 376	Advanced Long Term Actuarial Mathematics	

MA 380	Introduction to Generalized Linear Models and Survival Analysis in Business	
Total Credits		27

¹ If not already used in the major.

General Degree Requirements Foundations for Success (15 Credits)

Course	Title	Credits
FDS 100	Falcon Discovery Seminar	3

Communications and Writing

Select one from:

EMS 101	Critical Reading and Writing	3
or EMS 101L	Critical Reading and Writing with Lab	
or EMS 102	Critical Reading and Writing for ESOL	
or EMS 102L	Critical Reading and Writing for ESOL with Lab	

And one from:

EMS 104	Multimodal Communication	3
or EMS 105	Multimodal Communication for ESOL	

Information Technology

CS 100	Solving Business Problems with Information Technology	3
--------	---	---

Mathematical Sciences

Select one from:

MA 105	Mathematical Foundations for Business	3
or MA 105L	Mathematical Foundations for Business with Lab	
or MA 107	Applied Calculus for Business	
or MA 107L	Applied Calculus for Business with Lab	
or MA 131	Calculus I	
or MA 131L	Calculus I with Lab	

Total Credits		15
----------------------	--	-----------

Context and Perspectives (18 Credits)

Course	Title	Credits
--------	-------	---------

Students must take six courses, one in each category of Context and Perspectives:

Culture, Change, and Behavior (catalog.bentley.edu/undergraduate/degree-requirements/context-and-perspectives/#culturechangeandbehavior)		
Globalization (catalog.bentley.edu/undergraduate/degree-requirements/context-and-perspectives/#globalization)		
Institutions and Power (catalog.bentley.edu/undergraduate/degree-requirements/context-and-perspectives/#institutionsandpower)		
Race, Gender, and Inequality (catalog.bentley.edu/undergraduate/degree-requirements/context-and-perspectives/#racegenderandinequality)		
Scientific Inquiry (catalog.bentley.edu/undergraduate/degree-requirements/context-and-perspectives/#scientificinquiry)		

Values, Ethics, and Society (catalog.bentley.edu/undergraduate/degree-requirements/context-and-perspectives/#valuesethicsandsociety)

Total Credits	18
----------------------	-----------

Business Dynamics/Business Administration Minor (18 Credits)

Course	Title	Credits
All courses are required:		
AC 115	Introduction to Financial Reporting and Analysis	3
EC 111	Principles of Microeconomics	3
FI 118	Introduction to Finance	3
LA 100	Business Law	3
MG 116	Human Dynamics in Organizations	3
ST 113	Business Statistics	3
Total Credits		18

Communication Intensive

All students are required to take a three-credit course designated as a Communication Intensive. This requirement can be met within a variety of course subjects in both Arts & Sciences and Business. Communication Intensive courses are designated with a "CI" in the course schedule. *Transfer students with a minimum of 30 credits will be waived from the Communication Intensive requirement.*

Please note that certain majors have an additional three-credit Communication Intensive built into their major requirements, separate from the general CI requirement.

Additional Requirements

Unrestricted Electives (42 Credits)

Course	Title	Credits
Select 14 elective courses		42
Total Credits		42

Total: 120 Credits