



Actuarial Science BS

Actuaries use the tools of economics, finance, and mathematics to evaluate and price risk. The UMSL Actuarial Science BS degree is an interdisciplinary program that provides students with the quantitative skills used by actuaries. Students take coursework in calculus, financial mathematics, statistics, economics, econometrics, and finance. The program is designed to provide students with a solid preparation to take exams and complete validation by educational experience requirements needed to begin a career as an actuary.

Career Outlook

The actuarial profession has consistently been ranked as one of the most desirable professions in which to be employed. Actuarial graduates are employed by insurance companies, pension funds, consulting firms, and a variety of financial institutions.

Actuarial training is also transferable to broader jobs in data science and analytics. According to the Bureau of Labor Statistics, job prospects for those with actuarial degrees are expected to remain strong over the next decade.

Future Career Options

- Actuarial Consultant
- Business Analyst
- Budget Analyst
- Compensation/Benefits Administrator
- Data Scientist
- Healthcare Actuary
- Insurance Actuary
- Insurance Consultant
- Retirement Actuary
- Risk Analyst

Skills Developed By Degree Completion

- Understand programming techniques and financial math for actuarial science
- Possess fundamental probability skills and understand actuarial theories for assessing risk
- Use statistics for estimation and hypothesis testing in actuarial science
- Use regression models to analyze and forecast time series data
- Use economic reasoning to explain individuals' behavior and the economy
- Understand and apply accounting concepts

Successful alumni have gone on to fulfill many of the opportunities above. Additional possibilities are taken from the Bureau of Labor Statistics. Contact an advisor to discuss additional future career options.

IT STARTS RIGHT NOW

This is a sample academic map for the courses to take each academic semester/session. This map is not a substitute for academic advisement. Contact your advisor when making final selections.



UNIVERSITY STUDIES

University studies is required for all first-year students and those with less than 24 credit hours.



MILESTONE COURSES

Milestone courses should be taken in the order shown to ensure you stay on a timely and accurate path toward graduation.



SUMMER AND INTERSESSION COURSES

Don't forget that summers and winter breaks are a way to fast-track your route to degree completion – and lighten your load during fall and spring!

umsl.edu

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admissions.umsl.edu

2024-2025 4-YEAR ACADEMIC MAP

Bachelor of Science in Actuarial Science

Year

1

FALL SEMESTER (15 credit hours)

ENGL 1100: First-Year Writing (3)
CMP SCI 1250: Introduction to Computing (3)
MATH 1800: Analytical Geometry and Calculus I (5)
GEN ED CORE: Communication Proficiency (3)
INTDSC 1003: University Studies (1)

SPRING SEMESTER (14 credit hours)

INFSYS 1800: Computers and Information Systems (3)
MATH 1320: Introduction to Probability and Statistics (3)
MATH 1900: Analytical Geometry and Calculus II (5)
GEN ED EXPLORE: Humanities and Fine Arts (3)



Check once completed

Year

2

FALL SEMESTER (15 credit hours)

ECON 1001: Principles of Microeconomics (3)
INFSYS 2800: Information Systems Concepts and Applications (3)
MATH 2000: Analytical Geometry and Calculus III (5)
MATH 4010: Financial Mathematics I (3)

SPRING SEMESTER (15 credit hours)

ACCTNG 2400: Fundamentals of Financial Accounting (3)
ECON 1002: Principles of Macroeconomics (3)
MATH 4020: Financial Mathematics II (3)
MATH 4200: Mathematical Statistics I (3)
GEN ED EXPLORE: Humanities and Fine Arts (3)



Year

3

FALL SEMESTER (16 credit hours)

ECON 4100: Introduction to Econometrics (4)
ENGL 3100: Junior-Level Writing (3)
FINANCE 3500: Financial Management (3)
MATH 4210: Mathematical Statistics II (3)
GEN ED CORE: US History and Government (3)

SPRING SEMESTER (15 credit hours)

FINANCE 3521: Financial Engineering: Applying Derivatives (3)
GEN ED EXPLORE: Humanities and Fine Arts (3)
GEN ED EXPLORE: Social Sciences (3)
Cultural Diversity Requirement (3)
Recommended Course or Elective (3)



Year

4

FALL SEMESTER (16 credit hours)

ECON 4130: Business and Economic Forecasting (4)
FINANCE 3520: Investments (3)
Recommended Course or Elective (3)
Recommended Course or Elective (3)
Recommended Course or Elective (3)

SPRING SEMESTER (15 credit hours)

Recommended Course or Elective (3)
Recommended Course or Elective (3)
Recommended Course or Elective (3)
Recommended Course or Elective (3)
Recommended Course or Elective (3)

