

ACTUARIAL SCIENCE, MINOR

Our actuarial science minor allows students to prepare for one of the professional exams of the Society of Actuaries (<https://www.soa.org/member/>) and the Casualty Actuary Society (<http://www.casact.org/>) or to earn the Societies' VEE credit (<https://www.soa.org/education/exam-req/edu-vee.aspx>) in the area of applied statistics. Students will be able to specialize in probability, financial mathematics, or statistical modeling. These options are especially helpful for a student in business or economics that wishes to strengthen their quantitative skills. Students completing the minor will have a chance to network with actuaries employed in the industry and learn about professional skills and culture (through ACSC 101 ACTUARIAL CAREER). The calculus coursework will give them the mathematical framework necessary for work in financial mathematics.

As described in the Occupational Outlook Handbook of the U.S. Bureau of Labor Statistics (<http://www.bls.gov/ooh/>), actuaries answer questions about future risk, make pricing decisions and formulate investment strategies. Any time a company must decide whether to pursue a course of action involving substantial financial risk, they need to consult an actuary. An actuary uses quantitative tools to analyze and plan for future financial situations, such as determining an appropriate price for a company about to merge with another business or designing a retirement plan for a company. In addition to insurance companies, actuaries work in government, banks, financial planning and investment companies, consulting firms, public accounting firms, large industrial corporations and labor unions.

Requirements

- Students will be required to take at least six credit hours of 200/300 level courses at Roosevelt.
- All courses presented for the minor must be completed with C- or higher grades with an overall GPA of 2.0 or higher.

| Code | Title | Credit Hours |
|-----------------------------------|--|--------------|
| Requirements | | |
| ACSC 101 | ACTUARIAL CAREER | 1 |
| MATH 231 | CALCULUS I | 5 |
| MATH 232 | CALCULUS II | 5 |
| Electives (6 credit hours) | | 6 |
| MATH 233 | CALCULUS III | |
| ACSC 347 | PROBABILITY THEORY | |
| ACSC 349 | REGRESSION & TIME SERIES | |
| ACSC 367 | FINANCIAL MATH | |
| ACSC 378 | TOPICS IN ACTUARIAL MATH (Advisor permission required) | |
| ACSC 380FM | ACTUARIAL SCIENCE SEMINAR: EXAM FM/2 | |
| ACSC 380P | ACTUARIAL SCIENCE SEMINAR: EXAM P/1 | |
| Total Credit Hours | | 17 |

Due to the overlap in the calculus sequence, mathematics majors who wish to complete an actuarial science minor must take at least five courses designated as ACSC courses, including ACSC 101 ACTUARIAL CAREER, that are not counted as part of the credit for their mathematics major. That set of five courses may include courses that are cross-listed

as math courses, but these cannot be double counted as a part of their major. Students are encouraged to discuss their class choices with their advisor.

| Code | Title | Credit Hours |
|-----------------------------------|--|--------------|
| Requirements | | |
| ACSC 101 | ACTUARIAL CAREER | 1 |
| ACSC 347 | PROBABILITY THEORY | 3 |
| ACSC 367 | FINANCIAL MATH | 3 |
| Electives (6 credit hours) | | |
| ACSC 309 | DATA MINING | 3 |
| ACSC 323 | COOPERATION AND COMPETITION – GAME THEORY AND APPLICATIONS | 3 |
| ACSC 348 | MATHEMATICAL STATISTICS | 3 |
| ACSC 349 | REGRESSION & TIME SERIES | 3 |
| ACSC 366 | ADVANCED EXCEL METHODS | 3 |
| ACSC 369 | MODELS FOR LIFE CONTINGENCIES | 3 |
| ACSC 378 | TOPICS IN ACTUARIAL MATH (Advisor permission required) | 3 |
| ACSC 380FM | ACTUARIAL SCIENCE SEMINAR: EXAM FM/2 | 3 |
| ACSC 380P | ACTUARIAL SCIENCE SEMINAR: EXAM P/1 | 3 |
| ACSC 390 | INDUSTRIAL RESEARCH PROBLEMS | 3 |