### Actuarial Science Courses (Statistics and Actuarial Science) (ACTS)

This is a list of all actuarial science courses. For more information, see Statistics and Actuarial Science.

**ACTS:1000 First-Year Seminar** 1 s.h.
Small discussion class taught by a faculty member; topics chosen by instructor; may include outside activities (e.g., films, lectures, performances, readings, visits to research facilities). Requirements: first- or second-semester standing.

**ACTS:1001 Introductory Seminar on Actuarial Science** 1 s.h.
Introduction to actuarial science; U.S. actuarial organizations and actuarial qualification process; program requirements and tips for academic success; career center, actuarial club, and internships; actuarial career; ethics; communication; introduction to actuarial computing. Requirements: actuarial science interest major and first-year standing.

**ACTS:3080 Mathematics of Finance I** 3 s.h.
Mathematics of compound interest, annuities certain, amortization schedules, yield rates, sinking funds, and bonds. Prerequisites: STAT:3100 with a minimum grade of B-. Requirements: meet the prerequisite or have graduate standing.

**ACTS:3110 Actuarial Exam P Preparation** 1 s.h.
Preparation for the Society of Actuaries exam P. Corequisites: STAT:3100 or STAT:4100 or STAT:5100.

**ACTS:3210 Actuarial Exam FM Preparation** 1 s.h.
Preparation for the Society of Actuaries exam FM. Corequisites: ACTS:3080, if not taken as a prerequisite.

**ACTS:4010 Actuarial Exam IFM Preparation** 1 s.h.

**ACTS:4110 Actuarial Exam LTAM Preparation** 1 s.h.
Preparation for the Society of Actuaries exam LTAM. Corequisites: ACTS:4280, if not taken as a prerequisite.

**ACTS:4130 Quantitative Methods for Actuaries** 3 s.h.

**ACTS:4150 Topics in Actuarial Science** arr.
Selected topics in actuarial science, financial mathematics, and quantitative risk management.

**ACTS:4180 Life Contingencies I** 3 s.h.
Life annuities, net and gross premiums, net and gross premium reserves, modified reserve methods, and Markov chains. Offered spring semesters. Prerequisites: ACTS:3080 with a minimum grade of C+ and ACTS:4130 with a minimum grade of C+ and (STAT:4100 with a minimum grade of C+ or STAT:5100 with a minimum grade of C+).

**ACTS:4280 Life Contingencies II** 3 s.h.
Multi life models, multiple-decrement models, continuous-time Markov chain models, profit testing, and profit measures. Offered fall semesters. Prerequisites: ACTS:4180 with a minimum grade of C+.

**ACTS:4380 Mathematics of Finance II** 3 s.h.
Derivatives markets, forwards, options, pricing models, and actuarial applications. Prerequisites: ACTS:3080 with a minimum grade of C+. Requirements: mathematical statistics, multivariate calculus, and linear algebra.

**ACTS:4990 Readings in Actuarial Science** arr.

**ACTS:6160 Topics in Actuarial Science** arr.
Selected topics in actuarial science, financial mathematics, and quantitative risk management; required for all final-year M.S. students in actuarial science.

**ACTS:6480 Loss Distributions** 3 s.h.
Severity, frequency, and aggregate models and their modifications; risk measures; construction of empirical models. Offered spring semesters. Prerequisites: STAT:4101 or STAT:5101. Corequisites: ACTS:6580.

**ACTS:6580 Credibility and Survival Analysis** 3 s.h.

**ACTS:6990 Readings in Actuarial Science** arr.
Supervised reading and research in actuarial science, financial mathematics, or quantitative risk management.

**ACTS:7730 Advanced Topics in Actuarial Science/Financial Mathematics** arr.
Selected advanced topics in actuarial science, financial mathematics and quantitative risk management.