

School of Natural Sciences and Mathematics

Actuarial Science (BS)

The Bachelor of Science Actuarial Science (AS) Program at the University of Texas at Dallas is administered through the Department of Mathematical Sciences.

Students receive a rigorous mathematical background including all the major courses taken by students majoring in mathematics or statistics. Further, ten courses devoted to finance, economics, applied statistics, insurance and actuarial science are required. Upon completion of this program, a student will have the knowledge and business background necessary to pursue a career as an actuary, as well as to undertake graduate study in actuarial science, statistics, mathematics, economics or finance.

Faculty

Professors: Larry P. Ammann, Michael I. Baron, Sam Efromovich, Robert Serfling

Associate Professor: Pankaj K. Choudhary

Clinical Associate Professor: Natalia Humphreys

Bachelor of Science in Actuarial Science

Degree Requirements (120 hours)

I. Core Curriculum Requirements: 42 hours¹

Communication (6 hours)

3 hours Communication ([RHET 1302](#))

3 hours Business Communication ([BCOM 3311](#))

Social and Behavioral Sciences (15 hours)

[6 semester credit hours Government](#) ([GOVT 2301](#) and [GOVT 2302](#))

6 hours American History

3 hours Social and Behavioral Sciences Elective ([ECON 2301](#))

Humanities and Fine Arts (6 hours)

3 hours Fine Arts ([ARTS 1301](#))

3 hours Humanities ([HUMA 1301](#))

Mathematics and Quantitative Reasoning (6 hours)

6 hours Calculus ([MATH 2417](#) and [MATH 2419](#))^{2, 3, 4}

Science with at least 1 hour of laboratory (9 hours)²

[PHYS 2325](#) and [PHYS 2125](#) Mechanics with Laboratory

or [PHYS 2421](#) and [PHYS 2125](#) Honors Physics I - Mechanics and Heat with Laboratory

or [CHEM 1311](#) and [CHEM 1111](#) General Chemistry I with Laboratory

[PHYS 2326](#) and [PHYS 2126](#) Electromagnetism and Waves with Laboratory

or [PHYS 2422](#) and [PHYS 2126](#) Honors Physics II - Electromagnetism and Waves with Laboratory

or [CHEM 1312](#) and [CHEM 1112](#) General Chemistry II with Laboratory

And an additional acceptable science course

II. Major Requirements: 77 hours

Major Preparatory Courses (29 hours)

[ACCT 2301](#) Introductory Financial Accounting

[ACCT 2302](#) Introductory Management Accounting

[ACCT 3320](#) Financial Information Management

[CS 1337](#) Computer Science I

[ECON 2302](#) Principles of Microeconomics

[MATH 2417](#) Calculus I^{2, 3, 4}

[MATH 2419](#) Calculus II^{2, 3, 4}

[MATH 2418](#) Linear Algebra

[MATH 2420](#) Differential Equations with Applications

[MATH 2451](#) Multivariable Calculus with Applications

Major Core Courses (48 hours)

[ACTS 4301](#) Principles of Actuarial Models: Life Contingencies I

[ACTS 4302](#) Principles of Actuarial Models: Financial Economics

[ACTS 4304](#) Construction and Evaluation of Actuarial Models

[ACTS 4308](#) Actuarial Financial Mathematics

[FIN 3320](#) Business Finance

[MIS 3300](#) Introduction to Management Information Systems

[FIN 4300](#) Investment Management

[FIN 3390](#) Introduction to Financial Modeling

[MATH 3310](#) Theoretical Concepts of Calculus

[MATH 3311](#) Abstract Algebra I

[MATH 3379](#) Complex Variables

[MATH 4334](#) Numerical Analysis

[STAT 4382](#) Stochastic Processes

[STAT 3355](#) Data Analysis for Statisticians and Actuaries

[STAT 4351](#) Probability

[STAT 4352](#) Mathematical Statistics

III. Elective Requirements: 1 hour

Freshman students are required to take [UNIV 1010](#) and [NATS 1101](#).⁵

Preparation for Actuarial Exams

Exam 1/P: [STAT 4351](#) or [ACTS 4306](#)

Exam 2/FM: [ACTS 4308](#), [FIN 3320](#), and [FIN 4300](#)

Exam 3L/MLC: [ACTS 4301](#)

Exam 3F/MFE: [ACTS 4302](#)

Exam 4/C: [ACTS 4304](#)

Validation by Educational Experience (VEE) Credits

Applied Statistical Methods: [STAT 3355](#) and [STAT 4382](#)

Corporate Finance: [FIN 3320](#)

Economics: [ECON 2301](#) and [ECON 2302](#)

Minor in Actuarial Science

The Minor in Actuarial Science program at UT Dallas is administered through the Department of Mathematical Sciences. It is ideal for students who are interested in broadening their experience and knowledge base in the study and analysis of principles of Actuarial Science. The minor core courses prepare students for a number of actuarial exams required for a designation of Associate of the Society of Actuaries, Casualty Actuarial Society, or Canadian Institute of Actuaries. Specifically, the minor provides students with an intense background in principles of actuarial models. All of the courses in the minor serve as starting points for learning the concepts covered on the preliminary actuarial exams (P/1, FM/2, MLC/3L).

Students not majoring in Actuarial Science may obtain a minor in Actuarial Science by satisfying 24 semester credit hours (9 semester credit hours of minor core courses and 15 semester credit hours of minor preparatory courses).

Minor Preparatory Courses (15 hours)⁶

[MATH 2417](#) Calculus I (Differential Calculus)

[MATH 2419](#) Calculus II (Integral Calculus)

[MATH 2451](#) Multivariable Calculus with Applications

[MIS 3300](#) Introduction to Management Information Systems

Minor Core Courses (9 hours)⁷

[STAT 4351](#) Probability

[ACTS 4301](#) Principles of Actuarial Models: Life Contingencies I

[ACTS 4308](#) Actuarial Financial Mathematics

1. Curriculum Requirements can be fulfilled by other approved courses from accredited institutions of higher education. The courses listed in parenthesis are recommended as the most efficient way to satisfy both Core Curriculum and Major Requirements at UT Dallas.
2. A required Major preparatory course that also fulfills a Core Curriculum requirement. Hours are counted in Core Curriculum.
3. Six hours of Calculus are counted to fulfill the Mathematics Core Requirement with the remaining 2 hours to be counted under Major Preparatory Courses.
4. Students may choose one of the following calculus sequences: (a) MATH 2413, MATH 2414, and MATH 2415; or (b) MATH 2417 and MATH 2419.
5. NATS 1101 may be substituted for an appropriate elective for transfer students.
6. Students whose major does not require MATH 2417 and MATH 2419 as part of their Mathematics and Quantitative Reasoning Core Curriculum Requirements, should take this sequence as their core curriculum courses to ensure efficiency toward the minor.
7. These classes prepare for the three preliminary actuarial examinations jointly administered by the Society of Actuaries (SOA), Casualty Actuarial Society (CAS) and the Canadian Institute of Actuaries (CIA).

Updated: 2019-08-09 13:11:00 v2.e4c475