School of Natural Sciences and Mathematics

Master of Science in Actuarial Science

*36 semester credit hours minimum*

Program Objective

The objective of the program is to educate future leaders of the actuarial industry with training in actuarial theory and methods in a wide spectrum of actuarial applications involving probabilistic and statistical models. All students will be prepared to take five actuarial preliminary exams and will take two advanced actuarial classes to prepare for professional accreditation. Furthermore, students who did not take classes required for VEE (Validation of Educational Experience) credits in statistics, finance, and economics will have such opportunity. With this combined knowledge of mathematics particularly of probability, statistics, and decision theory together with knowledge of financial mathematics and insurance, the expected passing of five actuarial exams, and the three required VEE credits, graduates of the program will be able to work as senior actuaries in insurance, consulting, finance, government, and emerging markets.

Program Faculty

**Professors:** Larry P. Ammann, Sam Efromovich, Robert Serfling, @mbaron

**Associate Professor:** Pankaj K. Choudhary

**Assistant Professor:** Bhargab Chattopadhyay, Min Chen, Qiongxia (Joanne) Song

**Clinical Professor:** Ronald D. Dearing

**Clinical Associate Professor:** Natalia Humphreys

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

Course Requirements

The university's general degree requirements are discussed on the [Graduate Policies and Procedures page](http://catalog.utdallas.edu/2014/graduate/policies/policy).

The minimal total required number of classes for graduation is 36 semester credit hours. Among them, 27 semester credit hours of required courses and 9 semester credit hours of electives.

**Required Courses: 27 semester credit hours**

- **STAT 5351** Probability and Statistics I
STAT 5352 Probability and Statistics II
ACTS 6301 Theory of Actuarial Models: Life Contingencies I
ACTS 6302 Theory of Actuarial Models: Financial Economics
ACTS 6303 Theory of Actuarial Models: Life Contingencies II
ACTS 6304 Construction and Evaluation of Actuarial Models I
ACTS 6305 Construction and Evaluation of Actuarial Models II
ACTS 6306 Advanced Actuarial Applications
ACTS 6308 Actuarial Financial Mathematics

Prescribed Elective Courses: 9 semester credit hours

For the prescribed elective courses select three of the following:

STAT 6337 Advanced Statistical Models
STAT 6329 Applied Probability and Stochastic Processes
STAT 6338 Advanced Statistical Methods II
STAT 6343 Experimental Design
STAT 6347 Applied Time Series Analysis
STAT 7338 Time Series Modeling and Filtering
STAT 6348 Applied Multivariate Analysis
STAT 6390 Topics in Statistics-Level 6
STAT 7334 Nonparametric and Robust Statistical Methods
MATH 6313 Numerical Analysis
STAT 6331 Statistical Inference I
FIN 6301 Financial Management
FIN 6308 Regulation of Business and Financial Markets
FIN 6310 Investment Management
FIN 6314 Fixed Income Securities
FIN 6360 Options and Future Markets
FIN 6382 Numerical Methods in Finance
OPRE 6335 Risk and Decision Analysis
MECO 6303 Business Economics
ACCT 6305 Accounting for Managers
PPPE 6321 Economics for Public Policy

Preparation for Actuarial Exams

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):

Exam 1/P: STAT 5351 and STAT 5352
Exam 2/FM: ACTS 6308
Exam 3L/MLC: ACTS 6301
Exam 3F/MFE: ACTS 6302
Exam 4/C: ACTS 6304
Exam 5/FAP: ACTS 6306

Validation by Educational Experience (VEE) Credits

Applied Statistical Methods: STAT 6337 and STAT 6347
Corporate Finance: FIN 6301
Economics: MECO 6303

1. Exam 1/P
2. Exam 3L/MLC, Part I
3. Exam 3F/MFE
4. Exam 3L/MLC, Part II
5. Exam 4/C, Part I
6. Exam 4/C, Part II
7. Exam 5/FAP
8. Exam 2/FM
9. VEE, Applied Statistical Methods
10. VEE, Corporate Finance
11. VEE, Economics