ACTUARIAL SCIENCE

Actuarial Science is an inter-college major with combined coursework from the Haub School of Business and the College of Arts and Sciences. Please see Actuarial Science in the College of Arts and Sciences section in this catalogue.

ASC 150 First Year Seminar (3 credits)
This first year seminar course provides an introduction to the techniques actuaries use to forecast the future and quantify risk. Selected topics include time series analysis and statistical correlation, credibility theory, pricing insurance products and risk load, portfolio theory and asset allocation management. Students are also required to make a presentation on a topic of current interest in actuarial science. The course is taught in a computer classroom and students make extensive use of Microsoft Excel in the development of mathematical models.
Attributes: First-Year Seminar, Undergraduate

ASC 301 Actuarial Probability (3 credits)
This course provides an introduction to the basic probabilistic principles of insurance and Risk Management. Selected topics are covered to enable the application of probability theory to solve problems found in insurance and risk management applications. A problem solving approach will be adopted to provide preparation to pass the first actuarial exam co-sponsored by the Casualty Actuarial Society (Part 1) and the Society of Actuaries (Part P). Prerequisite: MAT 321.
Prerequisites: MAT 321
Attributes: Undergraduate

ASC 401 Financial Math - Actuarial Sci (3 credits)
This course provides an introduction to the basic probabilistic principles of insurance and Risk Management. Selected topics are covered to enable the application of probability theory to solve problems found in insurance and risk management applications. A problem solving approach will be adopted to provide preparation to pass the first actuarial exam co-sponsored by the Casualty Actuarial Society (Part 1) and the Society of Actuaries (Part P). Students may not receive credit for both this course and FIN 493, depending on the content of the course. Please consult the Program Director.
Prerequisites: MAT 162
Attributes: Undergraduate

ASC 402 Models of Financial Economics (3 credits)
This course introduces basics of pricing and hedging (risk management) of financial derivatives. Major topics which will be discussed are: a put-call parity, the binomial model for pricing European and American contingent claims, the continuous time model, Brownian motions, stochastic differential equations, Ito formula, Black-Scholes type equations, delta-hedging, exotic options, affine interest models, price zero-coupon bond, Monte Carlo simulation, variance reduction technique. This course will prepare students for the actuarial science examination in Model of Financial Economics which is co-sponsored by the Casualty Actuarial Society (Exam 3F) and the Society of Actuaries (Exam MFE). If time permits, the class will discuss the fundamental difference between Actuarial Pricing and Financial Pricing and how to combine them to price hybrid products such as Variable Annuities.
Prerequisites: MAT 322 and ASC 401