

Actuarial Science

while pursuing a subject of special interest. It also allows instructors to share their continuing personal study and to foster the abilities manifested by their students. This work is completed independently under the instructor's personal direction.

Students interested in pursuing Individual Study should discuss their plans with the appropriate faculty member. When the project has been determined, the faculty member will provide the Individual Study contract forms. These must be completed prior to registration. The Individual Study contract must be approved by the supervising faculty member, the chair of the department, and the dean of the College.

The grading for Individual Study may be standard (A,B,C, etc.) or Pass/Fail (S/R). This selection and a statement of explanation justifying the choice must be indicated on the Individual Study contract when it is presented to the registrar. (If the course is in the major field, grading must be on the standard system.)

Individual Study may be pursued for either two or four credits. Determination of the amount of credit awarded is at the discretion of the department, but should reflect an academic rigor commensurate with a regularly-offered course for the same amount of credit.

Regular tuition is charged.

495 Individual Study **2 credits**
This number is assigned if the course also fulfills a requirement in the core curriculum.

496 Individual Study **2 credits**
This number is assigned for courses within the department which do not fulfill a requirement in the core curriculum.

497 Individual Study **4 credits**
This number is assigned if the course also fulfills a requirement in the core curriculum.

498 Individual Study **4 credits**
This number is assigned for courses within the department which do not fulfill a requirement in the core curriculum.

Accounting

See Division of Business.

Actuarial Science (ACSC)

Youn (MATH), director, Herman (MATH)

The Bachelor of Science in Actuarial Science is an interdisciplinary degree program offered through the Department of Mathematics. (See also the Department of Mathematics in this catalog.)

Actuarial science education equips students with strong mathematical problem-solving skills that can be applied to business careers. The major requirements consist of courses in mathematics, actuarial science, computer science, business, economics and a course in communication. Coupled with a firm foundation in the liberal arts, this major provides a sound grounding in analytical problem-solving and communication skills.

This program prepares students for a variety of careers with insurance companies, consulting firms, financial institutions, industrial corporations or government agencies. It also provides a good preparation for non-actuarial careers in banking, finance or insurance. In addition, the statistical background developed by an actuarial student is valuable in a variety of other fields.

To be certified as a Fellow or an Associate by either the Society of Actuaries or the Casualty Actuarial Society, one must pass a series of rigorous examinations. The earlier examinations are focused on mathematics and statistics and can be taken while a student. The later examinations cover aspects of business, economics, and regulatory climate.

A careful selection of courses from a variety of departments helps a student to prepare for many excellent professional opportunities in this field. Students should see the director of the Actuarial Program for advice in selecting courses for a particular purpose.

Within the Department of Mathematics, the Center for Applied Mathematics provides opportunities for actuarial science students to work on significant mathematical problems of current interest to business, industry, and government.

Major in Actuarial Science (B.S.)

ACCT	211	Financial Accounting
ACSC	264	Theory of Interest
ACSC	351	Foundations of Actuarial Mathematics
ACSC	352	Actuarial Contingencies
BUS	200	Business Ethics (2 credits)
ECON	252	Principles of Microeconomics

Aerospace Studies

FINC	321	Financial Management
MATH	113	Calculus I
MATH	114	Calculus II
MATH	200	Multi-Variable Calculus
MATH	210	Linear Algebra and Differential Equations
MATH	313	Probability
MATH	314	Mathematical Statistics
MGMT	340	Management I (2 credits)

A course in risk management and insurance approved by the program director

Plus one of:

MATH	333	Applied Statistical Methods: Regression, Time Series, Forecasting
MATH	385	Mathematical Methods of Numerical Analysis

Allied Requirements:

One of:

QMCS	130	Problem Solving in the Natural Sciences
QMCS	237	Software Design using Scientific Languages

Plus one of:

COMM	103	Public Speaking
COMM	104	Communication in the Workplace
ENGL		200 or above
JOUR	215	Journalistic Writing in the Workplace
JOUR	311	Persuasion in Writing

Suggested Electives:

BLAW	365	Business Law
ECON	251	Principles of Macroeconomics
FINC	324	Advanced Financial Management
FINC		400-level Investment Courses
MBIS	701	Insurance Seminar
MKTG	300	Principles of Marketing
QMCS	280	Object-Oriented Design and Programming
QMCS	450	Database Design

264 Theory of Interest (MATH 264)

A survey of topics in the mathematical analysis of financial transactions which involve payments made over time. Specific areas of concentration will include the time value of money; the analysis of annuities; amortization and sinking funds; and the pricing and rates of return on investments. Both continuous time and discrete time problems will be considered.

Prerequisite: MATH 114.

351 Foundations of Actuarial Mathematics

The course covers the theory and applications of contingency mathematics in the area of life and health insurance, annuities and pensions from both the probabilistic and deterministic approaches. Topics will include: survival distributions, actuarial notation, life insurance and life annuities, net premiums and reserves.

Prerequisite: 264 and MATH 313.

352 Actuarial Contingencies

Extension of the analysis of 351 to multiple life functions and multiple decrement theory. Topics will include: multiple life functions and multiple decrement models, valuation of pensions, insurance models including expenses, nonforfeiture benefits and dividends.

Prerequisite: 351

Advertising

See Department of Journalism and Mass Communication.

Aerospace Studies (AERO)

Furs (chair), Kadrlik

Aerospace Studies is the official designation of the Air Force Reserve Officer Training Corps (AFROTC) program of instruction. Aerospace Studies is a dynamic college discipline designed to give female and male students an opportunity to concurrently complete ROTC coursework with degree coursework so that participants qualify for commissions in the United States Air Force as they