**ACTUARIAL SCIENCE (ACT SCI)**

**ACT SCI 300 — ACTUARIAL SCIENCE METHODS I**
1 credit.

Develop a knowledge of fundamental mathematical tools for quantitatively assessing risk. Emphasize the applications of these tools to problems encountered in actuarial science.

**Requisites:** MATH/STAT/MATH 309, STAT 311 or MATH/STAT/MATH 431 or concurrent registration; not open to graduate students

**Repeatable for Credit:** Yes, for 2 number of completions

**ACT SCI 301 — ACTUARIAL SCIENCE METHODS II**
1 credit.

Develop a knowledge of mathematical tools for quantitatively assessing financial risk. Emphasize the applications to problems encountered in actuarial science.

**Requisites:** Act Sci 303 or con reg; not open to Grad stdts

**Repeatable for Credit:** No

**ACT SCI/MATH 303 — THEORY OF INTEREST AND LIFE INSURANCE**
3 credits.

Application of calculus to compound interest and insurance functions; interest compounded discretely and continuously; force of interest function; annuities payable discretely and continuously; bonds and yield rates; life tables, life annuities, single and annual premiums for insurance and annuities; reserves.

**Requisites:** MATH 222 or 276

**Course Designation:** Breadth - Natural Science

**Level - Intermediate**

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**ACT SCI 365 — CONTEMPORARY TOPICS**
1-3 credits.

A course for the exploration of subject areas possibly to be introduced into the business curriculum.

**Requisites:** Varies by topic

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Fall 2016

**ACT SCI 650 — ACTUARIAL MATHEMATICS I**
3 credits.

Advanced problems in the mathematical theory of life contingencies; force of mortality, laws of mortality; premiums and reserves for insurance and annuities based on a single life.

**Requisites:** ACT SCI/MATH/MATH 303 and (MATH/STAT/MATH 309, STAT 311 or MATH/STAT/MATH 431)

**Course Designation:** Level - Advanced

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2017

**ACT SCI 651 — ACTUARIAL MATHEMATICS II**
3 credits.

Continuation of Act Sci 650. Joint life probabilities, annuities and insurances; multiple-decrement theory; pension fund mathematics.

**Requisites:** Act Sci 650

**Course Designation:** Level - Advanced

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**ACT SCI 652 — LOSS MODELS I**
3 credits.

Definition and selection of probability distributions appropriate for insurance data that are heavily tailed and skewed.

**Requisites:** STAT 311, MATH/STAT/MATH 309, or MATH/STAT/MATH 431

**Course Designation:** Level - Intermediate

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**ACT SCI 653 — LOSS MODELS II**
3 credits.

Estimation of parameters of probability distributions appropriate for insurance data that are heavy tailed and skewed; assessment of credibility of data for ratemaking.

**Requisites:** ACT SCI 652 and STAT/MATH 310 or STAT 312

**Course Designation:** Level - Advanced

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**ACT SCI 654 — REGRESSION AND TIME SERIES FOR ACTUARIES**
3 credits.

Linear regression and correlation; generalized linear regression models; introduction to time series; time series model building and forecasting with focus on data of interest to actuaries.

**Requisites:** MATH/STAT/MATH 310 or STAT 312

**Course Designation:** Level - Intermediate

**L&S Credit:** Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** Yes, unlimited number of completions

**ACT SCI 655 — HEALTH ANALYTICS**
3 credits.

The overall goal of this course is to provide students with an introduction to the broad area of health, integrating how researchers from multiple perspectives have investigated various aspects of health, along with the hands-on practice of learning and using statistical tools to analyze these topics.

**Requisites:** Junior standing and (GEN BUS 306, MATH/STAT/MATH 310 or 312)

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**ACT SCI 765 — CONTEMPORARY TOPICS**
1-3 credits.

A course for the exploration of subject areas possibly to be introduced into the business curriculum.

**Requisites:** Varies by topic

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions