

MATHEMATICS— CONCENTRATION: ACTUARIAL SCIENCE, B.A.

The requirements for admission into the Bachelor of Arts in Mathematics with a concentration in Actuarial Science are:

- a minimum cumulative grade point average (CGPA) of 2.75 and
- a minimum grade of B in Calculus and Analytic Geometry I or its equivalent.

Accepted majors must maintain:

- a minimum overall CGPA of 2.75 and a minimum CGPA of 2.75 for all mathematics courses counted toward the major and
- a minimum grade of C in all required math courses.

This concentration allows enough room to accommodate the general education requirements, as well as the math major requirements and the economics, accounting and finance credits needed for actuaries (74 credits total: 37 mathematics credits and 37 credits of economics, accounting, and finance including precalculus for business).

Prospective actuaries must pass a series of professional exams administered by the actuarial professional societies and show that certain subjects have been sufficiently covered by university or other coursework (Validation by Educational Experience, VEE). The coursework for the proposed concentration is selected to provide sufficient background to enable students take and pass the first two actuarial exams: the Financial Mathematics (FM/2) exam during their junior year, and the Probability (P/1) exam during their senior year. In this way students will be well positioned for this job market after completing the program. The program also includes courses that serve as preparation for subsequent actuarial exams and as satisfaction of VEE.

The proposed concentration also provides the graduate with numerous alternatives if the student decides to pursue a graduate degree. The student has the background to pursue a graduate degree in Actuarial Science, Mathematics, Statistics, Economics, or an MBA. In the latter two areas the student will have the advantage of taking many upper level courses in mathematics and statistics that may enhance the work in their own areas.

Code	Title	Credits
MATH 192	Calculus and Analytic Geometry I	4
MATH 193	Calculus and Analytic Geometry II	4
MATH 292	Calculus & Analytical Geometry III	4
MATH 295	Survey of Modern Mathematics	3
MATH 260	Linear Algebra	3
MATH 330	Mathematical Statistics I	3
MATH 331	Mathematical Statistics II	3
MATH 311	Differential Equations for Engineers	4
MATH 255	Financial Mathematics	3
MATH 370	Abstract Algebra	3
Math Elective		3
MATH 164	Pre-Calculus for Business Students	4
Economics		

ECON 207	Principles of Economics:Macro	3
ECON 208	Principles of Economics:Micro	3
ECON 364	Money & Banking	3
Accounting and Finance		
ACCT 251	Financial Accounting	3
ACCT 252	Management Accounting	3
FINC 320	Investment Principles for Financial Planning	3
FINC 371	Managerial Finance	3
ACCT 354	Cost Accounting	3
FINC 473	Portfolio Analysis	3
FINC 404	Risk Management and Insurance	3
FINC 471	Seminar:Issues in Corporate Finance	3

Freshman

Semester 1		Credits
ENGL 101 or ESL 101	English Composition I or English Composition I for English as a Second Language Students	4 - 6
MATH 164	Pre-Calculus for Business Students	4
MATH 175	Enhanced Precalculus	4
General Education Tier I Course		3
Credits		15-17

Semester 2

ENGL 102 or ESL 102	English Composition II or	4 - 6
MATH 192	Calculus and Analytic Geometry I	4
ECON 207	Principles of Economics:Macro	3
MATH 166 or MATH 140	Elementary Functions (Recommended Math Elective course) or Statistics I	3
Credits		14-16

Sophomore

Semester 1

MATH 193	Calculus and Analytic Geometry II	4
MATH 295	Survey of Modern Mathematics (Tier II General Education Course)	3
ACCT 251	Financial Accounting	3
ECON 208	Principles of Economics:Micro	3
General Education Tier I		3
Credits		16

Semester 2

MATH 292	Calculus & Analytical Geometry III (Tier II General Education Course)	4
MATH 260	Linear Algebra (Tier II General Education Course)	3
MATH 330	Mathematical Statistics I	3
ACCT 252	Management Accounting	3
General Education Tier I Course		3
Credits		16

Junior

Semester 1

MATH 370	Abstract Algebra	3
MATH 331	Mathematical Statistics II	3

FINC 320	Investment Principles for Financial Planning	3
General Education Tier I Course		3
General Education Tier II Course		3
Credits		15
Semester 2		
MATH 311	Differential Equations for Engineers	4
FINC 371	Managerial Finance	3
MATH 255	Financial Mathematics	3
General Education Tier II Course		3
General Education Tier II Course		3
Credits		16
Senior		
Semester 1		
FINC 473	Portfolio Analysis	3
ACCT 354	Cost Accounting	3
ECON 364	Money & Banking	3
Minor or Elective Course		3
General Education Tier III Course		3
Minor or Elective Course		3
Credits		18
Semester 2		
FINC 571		3
FINC 503		3
Minor or Elective Course		3
Minor or Elective Course		3
Minor or Elective Course		1-3
Credits		13-15
Total Credits		123-129

Student Learning Outcomes

Upon completion of the Mathematics BA program concentration Actuarial Science, students will be able to:

1. Demonstrate a solid foundation in mathematics by the ability to solve a variety of basic and advanced mathematical problems.
2. Correctly solve a wide variety of actuarial science problems using both basic and advanced mathematical techniques.
3. Apply actuarial mathematics to solve problems in a variety of fields, including insurance, finance, investment, and other businesses.
4. Communicate effectively and clearly both in written and oral forms.
5. Apply technology to actuarial problem solving.
6. Gain practical experience in actuarial science through internships, independent projects or research.