

Bachelor of Science in Mathematics (Financial-Actuarial Science)

About This Program

The Bachelor of Science in Mathematics Actuarial Science option is intended for students interested in careers involving various applications of mathematics to the world of business.

Competencies

1. On completion, students will be able to effectively study for and do well on the Probability Exam given by the Society of Actuaries (SOA).
2. On completion, students will be able to effectively study for and do well on the Financial Mathematics exam given by the SOA.
3. On completion, students will be able to effectively study for and do well on the Validation by Educational Experience (VEE) Courses required by the SOA.
4. On completion, students will be able to competitively apply for internships in the actuarial field.

Admissions Criteria

FIRST-TIME ADMISSION

Students who wish to apply for major status in mathematics must first complete the University and College of Science requirements and the specific requirements of the Department of Mathematics listed below.

- Overall GPA of 2.25;
- Minimum GPA of 2.25 in at least nine hours of mathematics courses in residence at the level of MATH 1426 or above, excluding capstone mathematics courses specifically for prospective middle or secondary grades mathematics teachers;
- At least six hours from the science or computer science courses listed in the mathematics degree plans; and
- Twelve hours of courses of the University core curriculum in disciplines other than science and mathematics.

Students currently enrolled at the University may qualify to change their major to mathematics by meeting the requirements listed above.

MAINTAINING ACADEMIC STANDING

Majors whose overall GPA or GPA in major courses falls below 2.25 will be required to change their major.

To re-enter as a mathematics major, the student must meet the requirements listed in the First-time Admission section.

Curriculum Requirements

Foundations

General Core Requirements (<https://catalog.uta.edu/academicregulations/degree requirements/generalcore requirements/>)

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Students must complete specific courses in certain core areas.

For Communication select:

ENGL 1301 & ENGL 1302	RHETORIC AND COMPOSITION I and RHETORIC AND COMPOSITION II
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Mathematics

MATH 1426	CALCULUS I
MATH 2425	CALCULUS II

For Life and Physical Science select one of the following sequences:

BIOL 1441 & BIOL 1442	BIOLOGY I FOR SCIENCE MAJORS: CELL AND MOLECULAR BIOLOGY and BIOLOGY II FOR SCIENCE MAJORS: ECOLOGY AND EVOLUTION
CHEM 1441 & CHEM 1442	GENERAL CHEMISTRY I and GENERAL CHEMISTRY II
GEOL 1301 & GEOL 1302	EARTH SYSTEMS and EARTH HISTORY
PHYS 1443 & PHYS 1444	GENERAL TECHNICAL PHYSICS I and GENERAL TECHNICAL PHYSICS II

For Social and Behavioral Sciences select:

ECON 2305	PRINCIPLES OF MACROECONOMICS
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Mathematics BS Foundations			
UNIV 1101	CAREER PREPARATION AND STUDENT SUCCESS		1
or UNIV 1131	STUDENT SUCCESS		
Additional hours from Mathematics courses required in the core.			2
Select an additional two-course sequence from the general education core Life and Physical Sciences list.			6
Select one of the following computer science courses:			3
CSE 1310	INTRODUCTION TO COMPUTERS & PROGRAMMING		
DATA 3401	PYTHON FOR DATA SCIENCE 1		
MAE 2360	NUMERICAL ANALYSIS & PROGRAMMING		
Specialization			
MATH 2326	CALCULUS III		3
MATH 3300	INTRODUCTION TO PROOFS (satisfies Oral Communication Competency)		3
MATH 3302	MULTIVARIATE STATISTICAL METHODS		3
MATH 3313	INTRODUCTION TO PROBABILITY		3
MATH 3316	STATISTICAL INFERENCE		3
MATH 3318	DIFFERENTIAL EQUATIONS		3
MATH 3321	ABSTRACT ALGEBRA I		3
MATH 3330	INTRODUCTION TO LINEAR ALGEBRA AND VECTOR SPACES		3
MATH 3335	ANALYSIS I		3
MATH 3345	NUMERICAL ANALYSIS AND COMPUTER APPLICATIONS		3
MATH 4313	MATHEMATICAL STATISTICS		3
ECON 2306	PRINCIPLES OF MICROECONOMICS		3
ACCT 2301	PRINCIPLES OF ACCOUNTING I		3
ACCT 2302	PRINCIPLES OF ACCOUNTING II		3
Select one mathematics course numbered 3301 or above.			3
Select two of the following:			6
MATH 4311	STOCHASTIC MODELS AND SIMULATION		
MATH 4312	ACTUARIAL RISK ANALYSIS		
MATH 4315	MATHEMATICAL FINANCE		
Select one of the following:			3
MATH 4321	ABSTRACT ALGEBRA II		
MATH 4334	ADVANCED MULTIVARIABLE CALCULUS		
MATH 4335	ANALYSIS II		
Select four of the following:			12
FINA 3313	BUSINESS FINANCE		
FINA 3315	INVESTMENTS		
FINA 3317	FINANCIAL INSTITUTIONS AND MARKETS		
FINA 4318	PORTFOLIO MANAGEMENT AND SECURITY ANALYSIS		
FINA 4319	FINANCIAL DERIVATIVES		
Any FINA course numbered 3300 to 3399.			
Total Hours			120

¹ Except for capstone mathematics courses specifically for prospective middle grades or secondary grades mathematics teachers.

VEE Certification and Associate of the Society of Actuaries (ASA) Requirements (<https://www.uta.edu/academics/schools-colleges/science/departments/mathematics/degree-programs/undergraduate/actuarial-science/>)

First Year			
First Semester	Hours	Second Semester	Hours
MATH 1426		4 MATH 2425	4
Life and Physical Science (Additional Science Requirement)		3-4 MATH 3316	3

ENGL 1301		3 Life and Physical Science (Additional Science Requirement)	3-4
Creative Arts		3 Communication	3
UNIV 1131 (or UNIV 1101)		1 Computer Programming Elective	3-4
		14-15	16-18
Second Year			
First Semester	Hours	Second Semester	Hours
MATH 2326		3 MATH 3318	3
MATH 3300		3 MATH 3321	3
MATH 3330		3 Language, Philosophy, and Culture	3
ECON 2305		3 ECON 2306	3
ACCT 2301		3 ACCT 2302	3
		15	15
Third Year			
First Semester	Hours	Second Semester	Hours
MATH 3345		3 MATH 3302	3
MATH 3313		3 Select one of the following:	3
MATH 3335		3 MATH 4311	
Select one of the following:		3 MATH 4312	
FINA 3313, FINA 3315, FINA 3317, FINA 4318, FINA 4319 or FINA 33XX		MATH 4313	3
Select one of the following:		3 Select one of the following:	3
HIST 1301, HIST 1302, HIST 1331 or HIST 1332		FINA 3313, FINA 3315, FINA 3317, FINA 4318, FINA 4319 or FINA 33XX	
		Select one of the following:	3
		HIST 1301, HIST 1302, HIST 1331 or HIST 1332	
		15	15
Fourth Year			
First Semester	Hours	Second Semester	Hours
MATH 33XX		3 Select one of the following:	3
Component Area		3 MATH 4321	
Select one of the following:		3 MATH 4334	
FINA 3313, FINA 3315, FINA 3317, FINA 4318, FINA 4319 or FINA 33XX		MATH 4335	
Select one of the following:		3 MATH 33XX	3
POLS 2311 or POLS 2312		Select one of the following:	3
Life and Physical Science (Sequence)		3-4 FINA 3313, FINA 3315, FINA 3317, FINA 4318, FINA 4319 or FINA 33XX	
		Select one of the following:	3
		POLS 2311 or POLS 2312	
		Life and Physical Science (Sequence)	3-4
		15-16	15-16
Total Hours: 120-125			

Advising Resources

First-time-in-college students should plan to speak to the math advisor when starting their second year. Transfer students should contact the math advisor after acceptance at UTA to create a degree plan and enroll in classes.

Location:

PKH 489

Email:

math.advising@uta.edu

Phone:

817-272-9688

Web:

Contact Information and Scheduling (<https://www.uta.edu/academics/schools-colleges/science/departments/mathematics/advising/>)