

Mathematics, Mathematics (BSMath)

Degree-Bachelor of Science in Mathematics (BSMath)

At least 42 hours must be upper-division. At least 21 upper-division hours must be completed in residence at the University. At least 18 hours in mathematics must be completed in residence at the University.

Students must earn a grade of at least C- in each mathematics and science course required, and a grade point average in these courses of at least 2.00. More information about grades and the grade point average is given in the [General Information Catalog](#).

M 408N and M 408S, or M 408K and M 408L, may substitute for M 408C

Total Hours Required: 120

Plan of Study

The Plan of Study is a suggested four-year course sequence to support academic planning and serves as a helpful guide. Currently enrolled students should meet with their academic advisor to tailor their course selections and timelines to their individual goals and circumstances.

Course	Title	Hours
Year 1		
Semester 1		
M 408N or M 408C	Differential Calculus for Science or Differential and Integral Calculus	4
Hours chosen from: Majors-level coursework in Astronomy, Biology, Chemistry, Geological Sciences, or Physics		4
RHE 306	Rhetoric and Writing	3
<u>First-Year Signature Course (090)</u>		3
C S 303E	Elements of Computers and Programming	3
Hours		17
Semester 2		
M 408S or M 408D	Integral Calculus for Science or Sequences, Series, and Multivariable Calculus	4
Hours chosen from: Majors-level coursework in Astronomy, Biology, Chemistry, Geological Sciences, or Physics		4
<u>Social and Behavioral Sciences (080)</u>		3
GOV 310L	American and Texas Government	3
Hours		14
Year 2		
Semester 1		
M 325K	Discrete Mathematics	3
GOV 312L	Issues and Policies in American Government	3
M 427J	Differential Equations with Linear Algebra	4
M 333L	Structure of Modern Geometry	3
Hours		13
Semester 2		
M 341	Linear Algebra and Matrix Theory	3
M 362K	Probability I	3
M 329F	Theory of Interest	3
<u>U.S. History (060)</u>		3
Upper-division coursework (excluding Astronomy, Biology, Chemistry, Geological Sciences, Mathematics, and Physics. Philosophy courses in logic, Computer Science courses in discrete mathematics, Engineering, and Actuarial Foundation courses may not be used to fulfill this requirement)		3
Hours		15
Year 3		
Semester 1		
M 328K	Introduction to Number Theory	3

Hours chosen from: Upper-division Math course		3
<u>U.S. History (060)</u>		3
M 371E	Learning Assistant Experience in Mathematics	3
M 339U	Actuarial Contingent Payments I	3
Hours		15
Semester 2		
Hours chosen from: Upper-division Math course		3
<u>Humanities (040)</u>		3
PHY 329	Introduction to Computational Physics	3
or Hours chosen from: Math in Context list		
M 361K or M 365C	Introduction to Real Analysis or Real Analysis I	3
M 329F	Theory of Interest	3
Hours		15
Year 4		
Semester 1		
M 365D	Real Analysis II	3
<u>Visual and Performing Arts (050)</u>		3
Upper-division coursework (excluding Astronomy, Biology, Chemistry, Geological Sciences, Mathematics, and Physics. Philosophy courses in logic, Computer Science courses in discrete mathematics, Engineering, and Actuarial Foundation courses may not be used to fulfill this requirement)		3
M 321M	History of Mathematics	3
M 333L	Structure of Modern Geometry	3
Hours		15
Semester 2		
Hours chosen from: Upper-division Math course (must be taught in the Inquiry Based Learning format)		3
Hours chosen from: Majors-level coursework in Astronomy, Biology, Chemistry, Geological Sciences, or Physics		4
Free Elective		3
M 339V	Actuarial Contingent Payments II	3
M 365G	Curves and Surfaces	3
Hours		16
Total Hours		120

Requirements

All requirements are listed below, starting with the most specialized moving to the most general. Additional requirements may follow the table, so be sure to read the entire page. Some required courses listed below may also satisfy [General Education](#) requirements, including [Core Curriculum](#).

Code	Title	Hours
Concentration		
Hours chosen from: Majors-level coursework from one of the following areas:		8
Astronomy		
Biology		
Chemistry		
Geological Sciences		
Physics		
C S 303E	Elements of Computers and Programming	3
Hours chosen from a single sequence below:		8
Sequence 1		
M 408C	Differential and Integral Calculus	
M 408D	Sequences, Series, and Multivariable Calculus	
Sequence 2		
M 408N	Differential Calculus for Science	
M 408S	Integral Calculus for Science	
Sequence 3		
M 408K	Differential Calculus	

M X08L	Integral Calculus	
Hours chosen from:		10
M 408M	Multivariable Calculus	
or M 427L	Advanced Calculus for Applications II	
M 427J	Differential Equations with Linear Algebra	
M 341	Linear Algebra and Matrix Theory (M 340L may be substituted for M 341 if the course was taken prior to entry into the mathematics entry-level major)	
M 362K	Probability I	
Hours chosen from:		3
M 325K	Discrete Mathematics	
M 328K	Introduction to Number Theory (Recommended for students with substantial experience in writing proofs)	
Hours chosen from:		3
M 343K	Introduction to Algebraic Structures	
M 361K	Introduction to Real Analysis	
M 365C	Real Analysis I	
M 367K	Topology I	
M 373K	Algebraic Structures I	
Hours chosen from: (upper-division coursework)		17
M 325K	Discrete Mathematics	
M 427J	Differential Equations with Linear Algebra	
or M 427K	Advanced Calculus for Applications I	
M 427L	Advanced Calculus for Applications II	
M 328K	Introduction to Number Theory	
M 329F	Theory of Interest	
M 333L	Structure of Modern Geometry	
M 339C	Actuarial Case Studies	
M 339D	Introduction to Financial Mathematics for Actuaries	
M 339J	Probability Models with Actuarial Applications	
M 339U	Actuarial Contingent Payments I	
M 339V	Actuarial Contingent Payments II	
M 340L	Matrices and Matrix Calculations	
or M 341	Linear Algebra and Matrix Theory	
M 343K	Introduction to Algebraic Structures	
M 343L	Applied Number Theory	
M 344K	Intermediate Symbolic Logic	
M 346	Applied Linear Algebra	
M 348	Scientific Computation in Numerical Analysis	
M 349P	Actuarial Statistical Estimates	
M 349R	Applied Regression and Time Series	
M 358K	Applied Statistics	
M 361	Theory of Functions of a Complex Variable	
M 361K	Introduction to Real Analysis	
M 362K	Probability I	
M 362M	Introduction to Stochastic Processes	
M 365C	Real Analysis I	
M 365D	Real Analysis II	
M 365G	Curves and Surfaces	
M 367K	Topology I	
M 367L	Topology II	
M 368K	Numerical Methods for Applications	
M 371E	Learning Assistant Experience in Mathematics	
M 372K	Partial Differential Equations and Applications	

M 373K	Algebraic Structures I	
M 373L	Algebraic Structures II	
M 374G	Linear Regression Analysis	
M 374M	Mathematical Modeling in Science and Engineering (Mathematics 374M may not count toward both requirement 11 and 13)	
M 375D	Discovery: An Introduction to Advanced Study in Mathematics	
M 375T	Topics in Mathematics	
M 378K	Introduction to Mathematical Statistics	
M 379H	Honors Tutorial Course	
Hours chosen from: Upper-division Inquiry Based Learning (IBL) Mathematics course (other required mathematics courses may also count toward this requirement)		3
Hours chosen from: Mathematics in Context		3
M 374M	Mathematical Modeling in Science and Engineering	
CH 353	Physical Chemistry I	
CH 354	Quantum Chemistry and Spectroscopy	
C S 341	Automata Theory	
C S 342	Neural Networks	
C S 345	Programming Languages	
C S 346	Cryptography	
C S 353	Theory of Computation	
C S 367	Numerical Methods	
ECE 411	Circuit Theory	
ECE 325	Electromagnetic Engineering	
ECE 360C	Algorithms	
ECE 362K	Introduction to Automatic Control	
PHY 329	Introduction to Computational Physics	
PHY 336K	Classical Dynamics	
PHY 352K	Classical Electrodynamics I	
Courses listed may require additional prerequisites. Mathematics 374M may not count for separate requirements.		
Upper-division coursework (excluding Astronomy, Biology, Chemistry, Geological Sciences, Mathematics, and Physics. Philosophy courses in logic, Computer Science courses in discrete mathematics, Engineering, and Actuarial Foundation courses may not be used to fulfill this requirement)		6
<i>Subtotal</i>		64
Free electives: Additional coursework to reach total hours required.		14
<i>Subtotal</i>		14
General Education		
<u>Core Curriculum</u>		42
<u>Foreign Language other than English, Beginning Proficiency</u>		
<i>Subtotal</i>		42
<u>College Requirements - Natural Sciences</u>		
<u>General University Requirements</u>		
Total Hours		120

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