

Mathematics - Mathematics Emphasis, B.S.

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Requirements

Mathematics degrees allow for a wide variety of employment options. The following careers are very mathematics centered, though in many cases additional training beyond a mathematics degree (or at least beyond a B.S. Mathematics degree) is needed to qualify for employment in these fields: actuarial work, education, research analysis, cryptology, systems analysis, robotics engineering, design modeling (creating cost efficient models), geomatics engineering, photogrammetry, stock trading, biomathematics, accounting or auditing, population ecology, aspects of forensic analysis and some types of computer programming design. There are also jobs for mathematics graduates in the federal government, mainly in the department of defense. The degree required depends on the type of job in the areas mentioned, and the salary level.

Total Program Credits: 120

Matriculation Requirements:		
1. Completion of MATH 1210 Calculus I QL and MATH 1220 Calculus II (or equivalent) with an overall GPA of 2.5 or better		
2. Student must meet with the Math Department advisor and declare an intent to major in Mathematics		
General Education Requirements:		39 Credits
	ENGL 1010 Introduction to Academic Writing CC	3
or	ENGL 1005 Literacies and Composition Across Contexts CC (5)	
	ENGL 2010 Intermediate Academic Writing CC	3
	MATH 1210 Calculus I QL	4
or	MATH 121H Calculus I QL (4)	
Complete one of the following:		3
	HIST 2700 US History to 1877 AS (3)	
and	HIST 2710 US History since 1877 AS (3)	
	HIST 1700 American Civilization AS (3)	
	HIST 1740 US Economic History AS (3)	
	POLS 1000 American Heritage SS (3)	
	POLS 1100 American National Government AS (3)	
Complete the following:		
	PHIL 2050 Ethics and Values IH	3
	HLTH 1100 Personal Health and Wellness TE (2)	
or	EXSC 1097 Fitness for Life TE	2
Distribution Courses		
Biology		3
	PHYS 2210 Physics for Scientists and Engineers I PP	4
	PHYS 2215 Physics for Scientists and Engineers I Lab	1
Complete one of the following:		3
	PHYS 2220 Physics for Scientists and Engineers II PP (4) (Required for Mathematics and Applied Mathematics Emphasis)	

and	PHYS 2225 Physics for Scientists and Engineers II Lab (1) (Required for Mathematics and Applied Mathematics Emphasis)	
or	One other Biology or Physical Science Distribution (Required for Applied Mathematics Emphasis)	3
	Humanities	3
	Fine Arts	3
	Social/Behavioral Science	3
Discipline Core Requirements:		31 Credits
Complete the following:		
	CS 1400 Fundamentals of Programming	3
	STAT 2050 Introduction to Statistical Methods	4
	STAT 2060 Introduction to Statistical Computing	1
	MATH 1220 Calculus II	4
or	MATH 122H Calculus II (4)	
	MATH 2210 Calculus III	4
or	MATH 221H Calculus III (4)	
	MATH 2270 Linear Algebra	3
	MATH 2280 Ordinary Differential Equations	3
	MATH 3250 Introduction to Advanced Calculus WE	3
	MATH 3300 Foundations of Abstract Algebra	3
	MATH 4210 Advanced Calculus I ¹	3
Elective Requirements:		21 Credits
	Complete 12 credits of upper division electives ²	12
	Complete 9 credits of upper or lower division electives ²	9

Emphasis Requirements:			14 Credits
	MATH 3210 Complex Variables		3
	MATH 4220 Advanced Calculus II		3
	MATH 4310 Introduction to Modern Algebra I		3
	MATH 4330 Theory of Linear Algebra		3
	MATH 4999 Mathematics Capstone WE		2
Emphasis Elective Requirements:			16 Credits
Complete 12 credits chosen from the following: At least one course must be from MATH 3400, MATH 4320, or MATH 4510			12
	MATH 3310 Discrete Mathematics (3)		
	MATH 3320 Graph Theory and its Applications (3)		
	MATH 3400 Partial Differential Equations (3)		

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	MATH 3640	Introduction to Optimization (3)	
	MATH 4100	Differential Geometry of Curves and Surfaces (3)	
	MATH 4250	Introduction to Dynamical Systems (3)	
	MATH 4320	Introduction to Modern Algebra II (3)	
	MATH 4340	Introduction to Number Theory (3)	
	MATH 4510	Foundations of Topology (3)	
	MATH 4610	Introduction to Numerical Analysis I (3)	
	MATH 4620	Introduction to Numerical Analysis II (3) ³	
	MATH 481R	Internship in Mathematics (1-4)	
	MATH 489R	Undergraduate Research in Mathematics (1-3)	
	MATH 490R	Topics in Mathematics (2-3)	
	MATH 5510	General Topology (3)	
	STAT 4300	Stochastic Processes (3)	
	STAT 4710	Mathematical Statistics-Probability and Statistics (3)	
	STAT 4720	Mathematical Statistics-Statistical Inference (3) ³	
	Complete 4 additional credits of general electives ⁴		4

Notes:

- Students planning to do graduate work in mathematics should take both of the year-long sequences MATH 4210 Advanced Calculus I, MATH 4220 Advanced Calculus II, and MATH 4310 Introduction to Modern Algebra I, MATH 4320 Introduction to Modern Algebra II, and acquire a reading knowledge of at least one foreign language chosen from French, German, or Russian.
- Elective courses may NOT include MATH 3100, MATH 3200, MATH 3010, MATH 3030, MATH 4030, or MATH 4040.
- Requires completion of a prerequisite course, which fulfills elective requirements.

- Elective courses may NOT include MATH 3100, MATH 3200, MATH 3010, MATH 3030, MATH 4030, or MATH 4040.

Graduation Requirements:

- Completion of a minimum of 120 semester credits with at least 40 credit hours in upper-division courses.
- Overall grade point average of 2.0 (C) or above, a minimum GPA of 2.4 in all MATH and STAT courses listed above, with no grade lower than a "C" in all listed PHYS, STAT, and MATH courses (substitutions may be granted for some elective courses).
- Residency hours-- minimum of 30 credit hours through course attendance at UVU, with at least 10 hours earned in the last 45 hours.
- Completion of general education and specified departmental requirements.
- Complete an exit survey administered by the Mathematics Department Advisor.
- Successful completion of at least one Global/Intercultural course.

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Graduation Plan

This graduation plan is a sample plan and is intended to be a guide. Your specific plan may differ based on your Math and English placement and/or transfer credits applied. You are encouraged to meet with an advisor and set up an individualized graduation plan in [Wolverine Track](#).

Semester 1	Course Title	Credit Hours
MATH 1210 or MATH 121H	Calculus I QL	4
ENGL 1010 or ENGH 1005	Introduction to Academic Writing CC or Literacies and Composition Across Contexts CC	3
Humanities GE		3
STAT 2050	Introduction to Statistical Methods	4
Semester total:		14
Semester 2	Course Title	Credit Hours
MATH 1220 or MATH 122H	Calculus II	4
PHYS 2210/2215	Physics for Scientists and Engineers I PP and Lab	5
ENGL 2010	Intermediate Academic Writing CC	3
STAT 2060	Introduction to Statistical Computing	1
Elective		2
Semester total:		15
Semester 3	Course Title	Credit Hours
MATH 2210 or MATH 221H	Calculus III	4
Biology or Physical Science Distribution		3
MATH 2270	Linear Algebra	3
HLTH 1100 or EXSC 1097	Personal Health and Wellness TE or Fitness for Life TE	2
CS 1400	Fundamentals of Programming	3
Semester total:		15
Semester 4	Course Title	Credit Hours
MATH 2280	Ordinary Differential Equations	3
MATH 3250	Introduction to Advanced Calculus WE	3
History GE		3
Fine Arts GE		3
Upper Division Elective		3
Semester total:		15
Semester 5	Course Title	Credit Hours
MATH 3300	Foundations of Abstract Algebra	3
MATH 3210	Complex Variables	3
MATH 4210	Advanced Calculus I	3
MATH Elective		3
PHIL 205G	Ethics and Values IH GI	3

Semester total:		15
Semester 6	Course Title	Credit Hours
MATH 4220	Advanced Calculus II	3
MATH Elective		3
MATH 4330	Theory of Linear Algebra	3
Biology GE		3
Elective		3
Semester total:		15
Semester 7	Course Title	Credit Hours
MATH 4310	Introduction to Modern Algebra I	3
MATH Elective		3
Upper Division Elective		3
Upper Division Elective		3
Elective		3
Semester total:		15
Semester 8	Course Title	Credit Hours
MATH Elective		3
MATH 4999	Mathematics Capstone WE	2
Social/Behavioral GE		3
Upper Division Elective		8
Elective		3
Elective		2
Semester total:		16
Degree total:		120