BS in Mathematics (694420) MAP Sheet

Physical and Mathematical Sciences, Mathematics
For students entering the degree program during the 2021-2022 curricular year.

University Core and Graduation Requirements	Suggested Sequence of Courses

University Core Requirements:

Requirements	#Classes	Hours	Classes
Religion Cornerstones			
Teachings and Doctrine of The Book of Mormon	1	2.0	REL A 275
Jesus Christ and the Everlasting Gospel	1	2.0	REL A 250
Foundations of the Restoration	1	2.0	REL C 225
The Eternal Family	1	2.0	REL C 200
The Individual and Society			
American Heritage	1-2	3-6.0	from approved list
Global and Cultural Awareness	1	3.0	from approved list
Skills			
First Year Writing	1	3.0	from approved list
Advanced Written and Oral Communications	1	3.0	from approved list
Quantitative Reasoning	1	4.0	MATH 112* or 113*
Languages of Learning (Math or Language)	1	4.0	MATH 112* or 113*
Arts, Letters, and Sciences			
Civilization 1	1	3.0	from approved list
Civilization 2	1	3.0	from approved list
Arts	1	3.0	from approved list
Letters	1	3.0	from approved list
Biological Science	1	3-4.0	from approved list
Physical Science	1	3.0	from approved list
Social Science	1	3.0	from approved list
Core Enrichment: Electives			
Religion Electives	3-4	6.0	from approved list
Open Electives	Variable	Variable	personal choice

*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (4 hours overlap)

Graduation Requirements:

Minimum residence hours required	30.0
Minimum hours needed to graduate	120.0

Suggested Sequence of Courses

FRESHMAN YEAR

1st Semester

First-year Writing	3.0
MATH 112	4.0
MATH 191	0.5
MATH 290	3.0
Biological Science	3.0
Religion Cornerstone course	2.0
Total Hours	**15.5**

2nd Semester

American Heritage	3.0
Social Science	3.0
MATH 113	4.0
MATH 213	2.0
MATH 215	1.0
Religion Cornerstone course	2.0
Total Hours	**15.0**

SOPHOMORE YEAR

3rd Semester

MATH 314	3.0
MATH 371	3.0
CS 142	3.0
Religion Cornerstone course	2.0
General Education courses, university requirements, and/or general electives	4.0
Total Hours	**15.0**

4th Semester

MATH 334	3.0
MATH 341	3.0
Letters	3.0
STAT 201 or 251	3.0
Religion Cornerstone course	2.0
General Electives	0.5
Total Hours	**14.5**

JUNIOR YEAR

5th Semester

MATH 342	3.0
MATH 413	3.0
Advanced Written & Oral Communication	3.0
Civilization 1	3.0
Religion elective	2.0
General electives	1.0
Total Hours	**15.0**

6th Semester

MATH 352	3.0
Physical Science	3.0
Civilization 2	3.0
Religion elective	2.0
General Electives	4.0
Total Hours	**15.0**

SENIOR YEAR

7th Semester

MATH elective 1	3.0
MATH elective 2	3.0
Global & Cultural Awareness	3.0
Religion elective	2.0
General Electives	4.0
Total Hours	**15.0**

8th Semester

MATH elective 3	3.0
MATH elective 4	3.0
Arts	3.0
General Electives	6.0
Total Hours	**15.0**

Note: Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.

Grades of C- or below will not be acceptable in major courses.

REQUIREMENT 1 Complete 11 courses

CORE REQUIREMENTS:

MATH 112 - Calculus 1	4.0
MATH 113 - Calculus 2	4.0
MATH 191 - Seminar in Mathematics 1	0.5
MATH 290 - Fundamentals of Mathematics	3.0
MATH 314 - Calculus of Several Variables	3.0
MATH 334 - Ordinary Differential Equations	3.0
MATH 341 - Theory of Analysis 1	3.0
MATH 342 - Theory of Analysis 2	3.0
MATH 352 - Introduction to Complex Analysis	3.0
MATH 371 - Abstract Algebra 1	3.0
MATH 413 - Advanced Linear Algebra	3.0

REQUIREMENT 2 Complete 1 option

OPTION 2.1 Complete 1 course

MATH 313 - (Not currently offered)	

OPTION 2.2 Complete 2 courses

MATH 213 - Elementary Linear Algebra	2.0
MATH 215 - Computational Linear Algebra	1.0

REQUIREMENT 3 Complete 1 course

C S 142 - Introduction to Computer Programming	3.0

REQUIREMENT 4 Complete 1 course

STAT 201 - Statistics for Engineers and Scientists	3.0
STAT 251 - Introduction to Bayesian Statistics	3.0

REQUIREMENT 5 Complete 12.0 hours from the following course(s)

C S 235 - Data Structures and Algorithms	3.0
MATH 300 - (Math-MthEd) History and Philosophy of Mathematics	3.0
MATH 355 - Graph Theory	3.0
MATH 362 - (Math-MthEd) Survey of Geometry	3.0
MATH 372 - Abstract Algebra 2	3.0
MATH 402 - Modeling with Uncertainty and Data 1	3.0
MATH 403 - Modeling with Uncertainty and Data 1 Laboratory	1.0
MATH 404 - Modeling with Uncertainty and Data 2	3.0
MATH 405 - Modeling with Uncertainty and Data 2 Laboratory	1.0
MATH 406R - Topics in Mathematics	3.0
MATH 410 - Introduction to Numerical Methods	3.0
MATH 411 - Numerical Methods	3.0
MATH 425 - Mathematical Biology	3.0
MATH 431 - Probability Theory	3.0
MATH 435 - Mathematical Finance	3.0
MATH 436 - Modeling with Dynamics and Control 1	3.0
MATH 437 - Modeling with Dynamics and Control 1 Laboratory	1.0
MATH 438 - Modeling with Dynamics and Control 2	3.0
MATH 439 - Modeling with Dynamics and Control 2 Laboratory	1.0
MATH 447 - Introduction to Partial Differential Equations	3.0
MATH 450 - Combinatorics	3.0
MATH 451 - Introduction to Topology	3.0
MATH 465 - Differential Geometry	3.0
MATH 473 - Group Representation Theory	3.0
MATH 485 - Mathematical Cryptography	3.0
MATH 487 - Number Theory	3.0
MATH 495R - Readings in Mathematics	2.0v
MATH 510 - Numerical Methods for Linear Algebra	3.0
MATH 511 - Numerical Methods for Partial Differential Equations	3.0
MATH 513R - Advanced Topics in Applied Mathematics	3.0
MATH 521 - Methods of Applied Mathematics 1	3.0
MATH 522 - Methods of Applied Mathematics 2	3.0
MATH 525 - Network Theory	3.0
MATH 532 - Complex Analysis	3.0
MATH 534 - Introduction to Dynamical Systems 1	3.0
MATH 536 - Applied Discrete Probability	3.0
MATH 540 - Linear Analysis	3.0
MATH 541 - Real Analysis	3.0
MATH 547 - Modeling and Analysis of Partial Differential Equations	3.0
MATH 553 - Foundations of Topology 1	3.0
MATH 554 - Foundations of Topology 2	3.0
MATH 561 - Introduction to Algebraic Geometry 1	3.0
MATH 562 - Introduction to Algebraic Geometry 2	3.0
MATH 565 - Differential Geometry	3.0
MATH 570 - Matrix Analysis	3.0
MATH 571 - Algebra 1	3.0
MATH 572 - Algebra 2	3.0
MATH 586 - Introduction to Algebraic Number Theory	3.0
MATH 587 - Introduction to Analytic Number Theory	3.0

REQUIREMENT 6

Students are required to take either the GRE Mathematics Subject Test or the Mathematics Major Field Test the last semester before they graduate. The tests are ETS (Educational Testing Service) standardized assessment tests of undergraduate mathematics. Go to ETS Math Subject Test (http://www.ets.org/gre/subject/about/content/mathematics) or ETS Major Field Tests (http://www.ets.org/mft/about/content/mathematics) for a test description and sample problems. These tests do not appear on the transcript or affect the GPA.

Students must participate in an exit interview before graduation.

RECOMMENDED Complete 3 courses

ECON 110 - Economic Principles and Problems	3.0
PHSCS 121 - Introduction to Newtonian Mechanics	3.0
PHSCS 220 - Introduction to Electricity and Magnetism	3.0

Note 1: The courses recommended above can be used to fill General Education requirements.

Note 2: Students who continue toward graduate work should complete Math 372 or Math 473, as well as Math 541 and Math 553.

Note 3: Students who do not plan to pursue a Ph.D. in mathematics are strongly encouraged to complete CS 235.

THE DISCIPLINE:

Mathematics is a means of dealing with order, pattern, and number as seen in the world around us. The abilities to compute, to think logically, and to take a reasoned approach to solving problems are highly valued in society and are characteristics of any educated person. Mathematics is not just a body of knowledge, but a process of analysis, reasoning, comparison, deduction, generalization, and problem solving. A mathematician's stock in trade is the ability to solve problems and to explain the solutions to others. Having once determined what the right questions are, solving problems involves analyzing both concrete and abstract situations, relating them to mathematical ideas and using mathematical techniques to work toward solutions. Explaining the solution involves pointing out what has been solved and why the solution is valid.

CAREER OPPORTUNITIES:

Majors in mathematics (BS) prepare for a wide variety of careers. Some enter graduate school or professional schools and prepare for careers in such fields as college teaching, consulting, research and development, law, medicine, and business administration. Others take positions in government agencies, industrial laboratories, information management firms, or business organizations. All of them spend much time communicating with colleagues about the problems they are solving as they continue to learn more mathematics and share mathematical ideas with others.

BS in Mathematics (694420)
2021-2022

INTERNSHIP COORDINATOR:

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MAP DISCLAIMER

While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

DEPARTMENT INFORMATION

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