



BS in MATHEMATICS (694420) MAP Sheet

Department of Mathematics

For students entering the degree program during the 2014–2015 curricular year.

UNIVERSITY CORE AND GRADUATION REQUIREMENTS	PROGRAM REQUIREMENTS (53.5 total hours)																																																																																																																																																																																													
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112* or 113*	Languages of Learning (Math or Language)	1	4.0	Math 112* or 113*	Arts, Letters, and Sciences				Civilization 1 and 2	2	6.0	from approved list	Arts	1	3.0	from approved list	Letters	1	3.0	from approved list	Scientific Principles & Reasoning				Biological Science	1	3.0	from approved list	Physical Science	1–2	3–7.0	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	GRADUATION REQUIREMENTS:				Minimum residence hours required		30.0		Minimum hours needed to graduate		120.0		<p>Grades of C– or below will not be acceptable in major courses.</p> <p>Complete the following core requirements:</p> <table border="1"> <tbody> <tr> <td>Math 112*</td> <td>Calculus 1</td> <td>4.0</td> </tr> <tr> <td>Math 113*</td> <td>Calculus 2</td> <td>4.0</td> </tr> <tr> <td>Math 191</td> <td>Seminar in Mathematics 1</td> <td>0.5</td> </tr> <tr> <td>Math 290</td> 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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.</p> <p>Students must participate in an exit interview before graduation.</p>	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 313	Elementary Linear Algebra	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	C S 142	Introduction to Computer Programming	3.0	Stat 151	Introduction to Bayesian Statistics	3.0	Stat 201	Statistics for Engineers and Scientists	3.0	Stat 370	Statistical Theory for Actuaries	3.0	C S 235	Data Structures and Algorithms	3.0	Math 300	History and Philosophy of Mathematics	3.0	Math 355	Graph Theory	3.0	Math 362	Survey of Geometry	3.0	Math 372	Abstract Algebra 2	3.0	Any 400- or 500-level mathematics courses (except Math 500)			<p>Recommended Courses</p> <table border="1"> <tbody> <tr> <td>Econ 110</td> <td>Economic Principles and Problems</td> <td>3.0</td> </tr> <tr> <td>Phscs 121</td> <td>Introduction to Newtonian Mechanics</td> <td>3.0</td> </tr> <tr> <td>Phscs 220</td> <td>Introduction to Electricity & Magnetism</td> <td>3.0</td> </tr> </tbody> </table> <p>Note 1: The courses recommended above can be used to fill General Education requirements.</p> <p>Note 2: Students who continue toward graduate work should complete Math 372, Math 541, and Math 553.</p> <p>Note 3: Students who do not plan to pursue a Ph.D. in mathematics are strongly encouraged to complete C S 235.</p>	Econ 110	Economic Principles and Problems	3.0	Phscs 121	Introduction to Newtonian Mechanics	3.0	Phscs 220	Introduction to Electricity & Magnetism	3.0
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***THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (4 hours overlap)**

FOR UNIVERSITY CORE OR PROGRAM QUESTIONS CONTACT THE ADVISEMENT CENTER
 Physical and Mathematical Sciences College Advisement Center
 N-181 ESC
 Brigham Young University, Provo, UT 84602
 Telephone: (801) 422-2674

FACULTY ADVISOR:
 Christopher Grant
 380 TMCB
 Brigham Young University, Provo, UT 84602
 Telephone: (801) 422-2120

BS in MATHEMATICS (694420) 2014–2015

Suggested Sequence of Courses:

FRESHMAN YEAR

1st Semester	
1 st Year Writing or A Htg 100	3.0 (3.0)
Math 112 (FWSpSu)	4.0
Math 191 (F)	0.5
Math 290 (FWSu)	3.0
Biological Science	3.0
Rel A 121	2.0
Total Hours	15.5

2nd Semester

A Htg 100 or 1 st Year Writing	3.0 (3.0)
C S 142 (FWSpSu)	3.0
Math 113 (FWSpSu)	4.0
Math 313 (FWSpSu)	3.0
Rel A 122	2.0
Total Hours	15.0

SOPHOMORE YEAR

3rd Semester	
Math 314 (FWSpSu)	3.0
Stat 151 or 201 or 370	3.0
Econ 110 (Social Science)	3.0
Rel A 211/212	2.0
General Elective	4.0
Total Hours	15.0

4th Semester

Math 341 (FW)	3.0
Math 371 (FWSp)	3.0
Letters	3.0
Phy S 100 (Physical Science)	3.0
Rel C 324/325	2.0
General elective	0.5
Total Hours	14.5

JUNIOR YEAR

5th Semester	
Math 342 (FW)	3.0
Approved Math elective	3.0
Advanced Written & Oral Communication	3.0
Civilization 1	3.0
Religion Elective	2.0
General Elective	1.0
Total Hours	15.0

6th Semester

Math 352 (FW)	3.0
Math 334 (FWSpSu)	3.0
Civilization 2	3.0
Religion Elective	2.0
General Elective	4.0
Total Hours	15.0

SENIOR YEAR

7th Semester	
Approved Math elective	3.0
Math elective	3.0
Global & Cultural Awareness	3.0
Religion Elective	2.0
General Elective	4.0
Total Hours	15.0

8th Semester

Approved Math elective	3.0
Math elective	3.0
Arts	3.0
General Elective	6.0
Total Hours	15.0

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.

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.

Mathematics Department
275 Talmage Building
Brigham Young University, Provo, UT 84602
Telephone: (801) 422-2061