

# BS in Mathematics Education (694620) MAP Sheet

Physical and Mathematical Sciences, Mathematics Education

For students entering the degree program during the 2020-2021 curricular year.

This major is designed to prepare students to teach in public schools. In order to graduate with this major, students are required to complete Utah State Office of Education licensing requirements. To view these requirements go to <http://education.byu.edu/ess/licensing.html> or contact the Education Advisement Center, 350 MCKB, (801) 422-3426.



University Core and Graduation Requirements				Suggested Sequence of Courses			
<b>University Core Requirements:</b>				<b>FRESHMAN YEAR</b>			
<b>Requirements</b>	<b>#Classes</b>	<b>Hours</b>	<b>Classes</b>	<b>1st Semester</b>		<b>JUNIOR YEAR</b>	
<b>Religion Cornerstones</b>				First-year Writing	3.0	<b>5th Semester</b>	
Teachings and Doctrine of The Book of Mormon	1	2.0	REL A 275	MATH 112	4.0	MTHED 301	3.0
Jesus Christ and the Everlasting Gospel	1	2.0	REL A 250	Religion Cornerstone course	2.0	MTHED 362	3.0
Foundations of the Restoration	1	2.0	REL C 225	Biological Science	3.0	MTHED 277	3.0
The Eternal Family	1	2.0	REL C 200	Letters	3.0	SC ED 353	3.0
<b>The Individual and Society</b>				<b>Total Hours</b>	<b>15.0</b>	Advanced Written & Oral Communication	3.0
American Heritage	1-2	3-6.0	from approved list			Religion elective	2.0
Global and Cultural Awareness	1	2.0	SC ED 353*	<b>2nd Semester</b>		<b>Total Hours</b>	<b>17.0</b>
<b>Skills</b>				American Heritage	3.0	<b>6th Semester</b>	
First Year Writing	1	3.0	from approved list	MATH 113	4.0	CPSE 402	2.0
Advanced Written and Oral Communications	1	3.0	from approved list	MATH 290	3.0	MATH 341	3.0
Quantitative Reasoning	1	4.0	MATH 112* or 113*	Religion Cornerstone course	2.0	MTHED 278	3.0
Languages of Learning (Math or Language)	1	4.0	MATH 112* or 113*	Social Science	3.0	MTHED 308	3.0
<b>Arts, Letters, and Sciences</b>				<b>Total Hours</b>	<b>15.0</b>	Civilization 2	3.0
Civilization 1	1	3.0	from approved list	<b>SOPHOMORE YEAR</b>		Religion Elective	2.0
Civilization 2	1	3.0	from approved list	<b>3rd Semester</b>		<b>Total Hours</b>	<b>16.0</b>
Arts	1	3.0	from approved list	MATH 213	2.0	<b>SENIOR YEAR</b>	
Letters	1	3.0	from approved list	MATH 215	1.0	<b>7th Semester</b>	
Biological Science	1	3-4.0	from approved list	MTHED 177	3.0	MATH 334	3.0
Physical Science	1	3.0	from approved list	STAT 121	3.0	MTHED 300	3.0
Social Science	1	3.0	from approved list	Civilization 1	3.0	MTHED 377	3.0
<b>Core Enrichment: Electives</b>				Religion Cornerstone course	2.0	MTHED 378	1.0
Religion Electives	3-4	6.0	from approved list	Arts	3.0	SC ED 375	3.0
Open Electives	Variable	Variable	personal choice	<b>Total Hours</b>	<b>17.0</b>	Religion Elective	2.0
*THESE CLASSES CAN FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (11 hours overlap)				<b>4th Semester</b>		<b>Total Hours</b>	<b>15.0</b>
<b>Graduation Requirements:</b>				MATH 314	3.0	<b>8th Semester</b>	
Minimum residence hours required		30.0		MATH 371	3.0	MTHED 476 or MTHED 496	12.0
Minimum hours needed to graduate		120.0		MTHED 276	4.0	<b>Total Hours</b>	<b>12.0</b>
				Religion Cornerstone course	2.0		
				Physical Science	3.0		
				<b>Total Hours</b>	<b>15.0</b>		
				<b>Note:</b> 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.			
				<b>Note 2:</b> The sequence of courses suggested may not fit the circumstances of every student. Students should contact their college advisement center for help in outlining an efficient schedule.			

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### 2020-2021 Program Requirements (78 Credit Hours)

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*For students accepted into the major after December 16, 2019, grades below C in any required coursework in a teaching major or teaching minor will not be accepted. Teacher candidates must maintain a cumulative GPA of 2.7 or higher once admitted into the program and to qualify for student teaching. For additional details on admission and retention requirements for teaching majors and teaching minors, see Educator Preparation Program Requirements in the Undergraduate Catalog.*

**REQUIREMENT 1** Complete 7 courses

**CORE REQUIREMENTS. NOTE 1: PREREQUISITES FOR ALL MATHEMATICS EDUCATION COURSES WILL BE STRICTLY ADHERED TO. NOTE 2: FBI FINGERPRINT AND BACKGROUND CLEARANCE MUST BE COMPLETED PRIOR TO ENROLLMENT IN MTHED 276.**

MTHED 177 - Critical Review of School Mathematics	3.0
MTHED 276 - Exploration of Mathematics Teaching	4.0
MTHED 277 - Task Design for Student Learning	3.0
MTHED 278 - Assessment of Student Learning	3.0
MTHED 308 - Mathematics Teaching with Technology	3.0
MTHED 377 - Mathematics Teaching in the Public Schools	3.0
MTHED 378 - Practicum in Mathematics Education	1.0

**REQUIREMENT 2** Complete 11 courses

MATH 112 - Calculus 1	4.0
MATH 113 - Calculus 2	4.0
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 371 - Abstract Algebra 1	3.0
MTHED 300 - (MthEd-Math) History and Philosophy of Mathematics	3.0
MTHED 301 - Teaching Statistics and Probability	3.0
MTHED 362 - (MthEd-Math) Survey of Geometry	3.0
STAT 121 - Principles of Statistics	3.0

**REQUIREMENT 3** Complete 1 option

**OPTION 3.1** Complete 1 course

MATH 313 - (Not currently offered)	
<b>OPTION 3.2</b> Complete 2 courses	
MATH 213 - Elementary Linear Algebra	2.0
MATH 215 - Computational Linear Algebra	1.0

*A teaching minor is not needed for licensure. However, students interested in teaching an academic subject in addition to mathematics should consider pursuing a teaching minor in that discipline.*

**REQUIREMENT 4** Complete 2 options

**PROFESSIONAL EDUCATION COMPONENT:**

*Licensure requirements: Contact the Education Advisement Center, 350 MCKB, 801-422-3426, to schedule the final interview to clear your application for the secondary teaching license. You should be registered for your last semester at BYU prior to the scheduled appointment.*

<b>OPTION 4.1</b> Complete 3 courses	
CPSE 402 - Educating Students with Disabilities in Secondary Classroc	2.0
*SC ED 353 - Multicultural Education for Secondary Education	3.0
SC ED 375 - Adolescent Development and Classroom Management	3.0

<b>OPTION 4.2</b> Complete 12.0 hours from the following course(s)	
MTHED 476 - Secondary Student Teaching in Mathematics	12.0
MTHED 496 - Academic Internship: Secondary Mathematics Educatio	12.0

*Student teachers/interns must complete the PIBS form, sign both the mentored teacher and university supervisor PAES forms, and attach their TWS to their Educator account. All three must be completed to be cleared for graduation.*

#### THE DISCIPLINE:

Mathematics is the discipline through which we make sense of the order, patterns, and quantitative situations we perceive in the world around us. The foundational skills of this discipline—the abilities to formulate, focus and solve problems; to articulate, test and justify conjectures; to communicate one’s reasoning about quantities and the relationships between them; and to see connections between different mathematical ideas and real-world contexts—are highly valued in society and are characteristics of any educated person. Mathematics is not only a body of knowledge but also a process of analysis, reasoning, comparison, deduction, generalization, and problem solving.

Mathematics educators depend heavily upon their own understanding of mathematics in order to identify and articulate the mathematical ideas they want students to learn, to assess which concepts their students already possess that might serve as a foundation for learning, and to develop activities that help students develop rich understandings. They also use their understanding of the nature of the discipline to structure a culture of inquiry, reasoning, and problem solving in their classrooms.

Courses in the undergraduate program are designed to help prospective teachers plan, manage, and implement classroom activities that facilitate students’ learning of mathematics.

Specific program goals include (1) mastery of the foundational skills of mathematics, (2) deep reflection on mathematics learning at all levels, through observation of and participation in highquality classroom practice, (3) increased autonomy and confidence as an investigator, active learner, and productive thinker, and (4) extended field experience, informed by the best current understanding.

Program faculty include educational and mathematical researchers, specialists in both preservice and inservice teacher education, and school practitioners, spanning a broad range of interest and experience.

#### CAREER OPPORTUNITIES:

*Within Education:* Majors in mathematics education prepare for careers in molding and shaping the future minds of the world. Majors prepare for jobs high in demand teaching mathematics at the middle and high school levels. The skills learned in math education set students apart in STEM fields, and the teaching skills gained will allow them to facilitate meaningful mathematics learning. Outside the physical classroom, math education graduates can develop curriculum or educational software, and work in organizations that provide tutoring, online education, or distance learning. Graduates are well positioned to pursue advanced degrees in order to facilitate professional development at the district and state administration levels or to qualify to teach higher education.

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2020-2021

*Outside of Education:* This versatile major requires extensive mathematics to rival any program and develops essential communication skills. Graduates who choose to forego the traditional teaching route have found rewarding careers in business, computer programming, information technology, operations research, cryptography, finance and more. Not only are mathematics education graduates prepared to solve problems in these fields using their mathematical background, but the teaching experiences prepare them to be highly effective in communicating solutions to others.

### 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

FACULTY ADVISOR:

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### ADVISEMENT CENTER INFORMATION

#### Physical and Mathematical Sciences College Advisement Center

Brigham Young University  
N-181 ESC  
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