## BS in Mathematics Education (694620) MAP Sheet

Physical and Mathematical Sciences, Mathematics Education
For students entering the degree program during the 2023-2024 curricular year.
This major is designed to prepare students to teach mathematics 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/icensing. html or conta the Education Advisement Center, 350 MCKB, (801) 422-3426.

| University Core and Graduation Requirements |  |  |  | Suggested Sequence of Courses |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| University Core Requirements: |  |  |  |  |  |  |  |
|  |  |  |  | $\begin{aligned} & \text { FRESHMAN YEAR } \\ & \text { 1stSemester } \end{aligned}$ |  | JUNIOR YEAR <br> 5th Semester |  |
| Religion Cornerstones |  |  |  | First-year Writing | 3.0 | MTHED 277 | 3.0 |
|  |  |  |  | MATH 112 | 4.0 | MTHED 278 | 3.0 |
| Teachings and Doctrine of The Book of | 1 | 2.0 | RELA 275 | Religion Cornerstone course | 2.0 | MTHED 362 | 3.0 |
| Mormon |  |  |  | Biological Science | 3.0 | SC ED 353 | 3.0 |
| Jesus Christ and the Everlasting Gospel | 1 | 2.0 | REL A 250 | Letters | 3.0 15.0 | Advanced Written \& Oral Communication | 3.0 20 |
| Foundations of the Restoration | 1 | 2.0 | REL C 225 | 2nd Semester |  | Total Hours | 17.0 |
| The Eternal Family | 1 | 2.0 | REL C 200 | American Heritage | 3.0 | 6 6th Semester |  |
| The Individual and Society |  |  |  | MATH 113 | 4.0 | CPSE 402 | 2.0 |
| American Heritage |  | 3-6.0 | from approved list | MATH 290 | 3.0 | MATH 341 | 3.0 |
| Global and Cultural Awareness | 1 | 2.0 | SC ED 353* | Religion Cornerstone course | 2.0 | MTHED 301 | 3.0 |
| Skills |  |  |  | Total Hours | 15.0 | Civilization 2 | 30 |
| First Year Writing | 1 | 3.0 fr | from approved list | SOPHOMORE YEAR |  | Religion Elective | 2.0 |
| Advanced Written and Oral Communications |  |  |  | 3 3rd Semester |  | Total Hours | 16.0 |
| Advanced Writen and Oral Communications | 1 | 3.0 fror | from approved list | MATH 213 | 2.0 | SENIOR YEAR |  |
| Quantitative Reasoning | 1 | 4.0 M | MATH $112^{*}$ or $113^{*}$ | MATH 215 | 1.0 | 7 7h Semester |  |
| Languages of Learning (Math or Language) | 1 | 4.0 | MATH $112^{*}$ or $113^{*}$ | MTHED 177 | 3.0 | MATH 334 | 3.0 |
| Arts, Letters, and Sciences |  |  |  | STAT 121 | 3.0 | MTHED 300 | 3.0 |
| Civilization 1 |  |  | from approved list | Civilization 1 | 3.0 | MTHED 377 | 3.0 |
| Civilization 1 | 1 | 3.0 | from approved list | Religion Cornerstone course | 2.0 | MTHED 378 | 1.0 |
| Civilization 2 | 1 | 3.0 | from approved list | Arts | 3.0 | SC ED 375 | 3.0 |
| Arts | 1 | 3.0 | from approved list | Total Hours | 17.0 | Religion Elective | 2.0 |
| Letters | 1 | 3.0 | from approved list | 4th Semester |  | Total Hours | 15.0 |
| Biological Science | 1 | 3-4.0 | from approved list | MATH 314 | 3.0 | 8 8th Semester |  |
| Physical Science | 1 | 3.0 | from approved list | MATH Elective | 3.0 | MTHED 476 or MTHED 496 | 12.0 |
| Social Science | 1 | 3.0 | from approved list | MTHED 276 Religion Cornerstone course | 4.0 2.0 | Total Hours | 12.0 |
| Core Enrichment: Electives |  |  |  | Physical Science | 3.0 |  |  |
| Religion Electives | 3-4 | 6.0 | from approved list | Total Hours 15.0 |  |  |  |
| Open Electives Variable Variable personal choice <br> *THESE CLASSES CAN FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (11 hours overlap) |  |  |  | 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. |  |  |  |
|  |  |  |  |  |  |  |  |
| Graduation Requirements: <br> Note 2: 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. |  |  |  |  |  |  |  |
| Minimum residence hours required |  | 30.0 |  |  |  |  |  |
| Minimum hours needed to graduate |  | 120.0 |  |  |  |  |  |

## Program Requirements

Licensure: This program meets the educational requirements designed to lead to an occupationally required professional license or certificate in the state of Utah. Students pursuing occupations requiring a license or certificate in a state other than Utah should contact the appropriate BYU academic advisement center as well as the licensing agency in the state where they intend to work to seek information and guidance regarding licensure and certification requirements.
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 https://www.schools.utah.gov/curr/licensing or contact the Education Advisement Center, 350 MCKB, 801-422-3426.
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 Course
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 Math 3.0
MTHED 276 - Exploration of Math Teaching 4.0
MTHED 277 - Task Design for Learning 3.0
MTHED 278 - Assessment of Learning 3.0
MTHED 308 - Teaching with Tech 3.0
MTHED 377 - Math Tchng in Public Schools 3.0
MTHED 378 - Practicum in Math Education 1.0
Requirement 2 -Complete 12 Courses
MATH 112 - Calculus 14.0
MATH 113 - Calculus 24.0
MATH 213 - Elementary Linear Algebra 2.0
MATH 215 - Computational Linear Algebra 1.0 MATH 290 - Fundamentals of Mathematics 3.0 MATH 314 - Calculus of Several Variables 3.0 MATH 334 - Ordinary Differential Equation 3.0 MATH 341 - Theory of Analysis 13.0 MTHED 300 - History \& Philosophy of Math 3.0 MTHED 301 - Teaching Stats \& Probability 3.0 MTHED 362 - Survey of Geometry 3.0
STAT 121 - Principles of Statistics 3.0
Requirement 3 -Complete 1 of 12 Courses
CS 110 - How to Program 3.0
C S 111 - Intro to Computer Science 3.0
CS 180 - Intro to Data Science 3.0
MATH 350 - Combinatorics \& Graph Theory 3.0 MATH 371 - Abstract Algebra 13.0
MATH 380 - Mathematics of Data Science 3.0
MATH 485 - Mathematical Cryptography 3.0 MATH 487 - Number Theory 3.0
PHSCS 310 - Physics By Inquiry: Mechanics 3.0 PHSCS 311 - Physics By Inquiry: Electricity 3.0 STAT 201 - Stat for Engineers \& Scientist 3.0 STAT 230 - Statistical Modeling 13.0

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 Requirements

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.
Requirement 4.1 -Complete 3 Courses
CPSE 402 - Educ Stdnts w/Disablts in ScEd 2.0
SC ED 353 - Multi Cult Ed for Sc Ed 3.0
SC ED 375 - Ad Dev \& Class Mgmt 3.0

## Requirement 4.2 -Complete 12 hours

MTHED 476 - Student Teaching in Math - You may take up to 12.0 credit hours 12.0
MTHED 496 - Academic Internship - Math - You may take up to 12.0 credit hours 12.0
Student teachers/interns must complete all required EPP assessments and paperwork in the Educator system

## 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. he skills learned in math education set students apart in STEM fields, and he teaching skills gained will allow them to facilitate meaningful mathematics learning. Outside the physical classroom, math education raduates can develop curriculum or educational software, and work in rganizations 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.

Outside of Education: Majors in mathematics education graduate with a broad background in advanced mathematics and mastery of essential communication skills. Graduates who choose to forego the traditiona 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 o solve problems in these fields using their mathematical background, bu 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 advisemen center/department for complete guidelines

## DEPARTMENT INFORMATION

## FACULTY ADVISOR:

Amy Tanner
187 TMCB
Brigham Young University, Provo, UT 84602
elephone: (801) 422-3640

## ADVISEMENT CENTER INFORMATION

hysical and Mathematical Sciences College Advisement Center
Brigham Young University
N-181 ESC
Provo, UT 84602
Telephone: (801) 422-2674

