Mathematics Education, B.S. *major* (Teacher Licensure)

The Mathematics Bachelor of Science (Teacher Licensure) follows the guidelines of the National Council of Teacher of Mathematics for undergraduate programs for teachers of mathematics. Students majoring in this degree should also check the Professional Education requirements found in Professional Education: Secondary.

Note: If the student's high school mathematics courses and/or the Mathematics Placement Test indicate a lack of readiness for calculus, the student will be placed in one of the following precalculus sequences: MATH 1470; or MATH 1170 and MATH 1180; or MATH 1170 and MATH 1470. Students who need to take more than one course in preparation for calculus may not be able to complete this program without exceeding 120 credits.

Required Credits: 76
Required GPA: 2.50

I REQUIRED CORE COURSES

COMPLETE THE FOLLOWING COURSES:

- MATH 2210 Discrete Mathematics (4 credits)
- MATH 2471 Calculus I (5 credits)
- MATH 2472 Calculus II (5 credits)
- MATH 2480 Multivariable Calculus (4 credits)
- MATH 3310 Linear Algebra (4 credits)

II REQUIRED ELECTIVES

COMPLETE THE FOLLOWING COURSES:

- MATH 3065 Mathematical Foundations of Algebra for Teachers (4 credits)
- MATH 3560 Classical and Modern Geometry (3 credits)

SELECT 1 OF THE FOLLOWING COURSES:

- MATH 3067 Data Investigations, Probability, and Statistics for Teachers (4 credits)
- STAT 2610 Applied Statistics (4 credits)
- STAT 3631 Probability and Statistics I (4 credits)

SELECT 1 OF THE FOLLOWING COURSES:

- MATH 4350 Abstract Algebra (3 credits)
- MATH 4371 Modern Algebra (3 credits)

III REQUIRED CONCENTRATION, SECOND EDUCATION MAJOR OR MIDDLE LEVEL ENDORSEMENT

COMPLETE ONE OF THE FOLLOWING OPTIONS:

Note: If taken under II. above, MATH 3067 or STAT 3631 may be used to meet this requirement.

A. APPLIED MATHEMATICS/ CALCULUS CONCENTRATION
COMPLETE 2 OF THE FOLLOWING COURSES:

- MATH 2490 Differential Equations (4 credits)
- MATH 3710 Mathematical Modeling (3 credits)
- MATH 3720 Numerical Methods (3 credits)
- MATH 4410 Introduction to Analysis (3 credits)
- MATH 4760 Topics in Applied Mathematics (3 credits)

B. COMPUTER SCIENCE CONCENTRATION
COMPLETE 2 OF THE FOLLOWING COURSES:

- CS 2270 Introduction to Web Programming (3 credits)
- CS 2321 Computer Science I (4 credits)
- CS 2322 Computer Science II (4 credits)

C. MIDDLE LEVEL MATHEMATICS CONCENTRATION
COMPLETE 2 OF THE FOLLOWING COURSES:

- MATH 3064 Number Concepts for Teachers (4 credits)
- MATH 3066 Geometry and Technology in the Mathematics Classroom (4 credits)
- MATH 3067 Data Investigations, Probability, and Statistics for Teachers (4 credits)

D. STATISTICS CONCENTRATION
COMPLETE 2 OF THE FOLLOWING COURSES:

- STAT 3610 Time Series Analysis (3 credits)
- STAT 3631 Probability and Statistics I (4 credits)
- STAT 3632 Probability and Statistics II (3 credits)

E: COMPLETE A SECONDARY EDUCATION MAJOR
(OTHER THAN MATHEMATICS)

F: COMPLETE A MIDDLE LEVEL ENDORSEMENT
(OTHER THAN MATHEMATICS)

REQUIRED PROFESSIONAL EDUCATION COURSES

COMPLETE THE FOLLOWING COURSES:

- ED 3100 Introduction to the Foundations of Public School Education (3 credits)
- ED 3110 Educational Psychology (3 credits)
- ED 3140 Human Relations In Education (3 credits)
- ED 3350 Pedagogy: Planning for Instruction (3 credits)
- ED 3440 Mathematics Methods in the Secondary School (4 credits)
- ED 3780 Adaptation and Management: Designing the Learning Environment (3 credits)
- ED 4737 Content Area Reading (3 credits)
- ED 4799 The Professional Teacher (1 credit)
- HLTH 3400 Health and Drugs in Society (2 credits)

COMPLETE 12 CREDITS OF THE FOLLOWING COURSE

- ED 4830 Student Teaching - Secondary (1-12 credits)

Program Learning Outcomes | Mathematics Education, B.S.

1. Knowledge: Students will understand the content and methods of the core areas of undergraduate mathematics.

2. Analysis: Students will identify, interpret and analyze problems, discern structure and pattern and make conjectures.

3. Application: Students will apply appropriate procedures and technology to

solve problems.

4. Proof: Students will apply creative and analytic thinking to develop clear and valid mathematical arguments.

5. Communication: Students will communicate mathematical ideas and understanding effectively.

6. Pedagogy: Student will develop an understanding of a variety of pedagogical techniques and be able to apply them to the design of lessons and curriculum that communicate mathematical concepts to learners with diverse learning styles and ability levels.

7. Career Readiness: Students will be prepared for careers in education and further study in mathematics.

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