New Program: Advanced Mathematics for Elementary Education, B.S.

To learn more, and for advising, please see *Volker Ecke, Elementary Mathematics Education, Wilson 328-B, vecke@westfield.ma.edu* .

The Advanced Mathematics for Elementary Education major is an excellent choice for students seeking licensure in Elementary or Special Education who wish to earn a strong credential in elementary mathematics education in order to pursue a career goal of elementary mathematics specialist (EMS). Students in this major must simultaneously be enrolled in one of the following B.S.E. degree programs and no student can earn a degree with only this major.

- Elementary Education with Licensure (1-6), B.S.E.
- Special Education: Moderate Disabilities with Licensure (PreK-8), B.S.E.

Students are accepted into the program only with the approval of the mathematics department chair.

Requirements for the B.S. in Advanced Mathematics for Elementary Education:

- The University Common Core.
- The Major.

For the University Common Core, specific WSU core courses are required for Education students; see their list of "Common Core Coursework for Early Childhood, Elementary, and Special Education Majors." Students should consult with their Education advisor to choose appropriate University Common Core courses.

Coursework required for the Major (32 credits)

Foundations of Mathematics (14 credits)

- MATH 116 Math Systems (3 cr)
- MATH 105 Calculus I (4 cr)
- MATH 106 Calculus II (4 cr)
- MATH 300 Discrete Structures with Proof (3 cr)

Foundations of Elementary Mathematics Education (15 credits)

- MATH 153 Foundations: Number Systems (3 cr)
- MATH 250 Foundations: Patterns, Reasoning, Algebra (3 cr)
- MATH 251 Foundations: Geometry (3 cr)
- MATH 340 Mathematical Statistics (3 cr)
- MATH 356 Knowledge and Practice of Teaching Math: K-6

Upper Level Mathematics Elective (choose 1 course, 3 credits)

- MATH 355 Exploring the Mathematical Knowledge of Teaching (Algebra)
- MATH 311 Number Theory
- MATH 341 Mathematical Statistics II
- MATH 306 Modern Geometries I

CLASS OF 2014 AND THEREAFTER

Advanced Mathematics for Elementary Education + Elementary Education Program

(Sample Program of Study)

1st Year	• **ENGL 0101 English Composition I***	• **ENGL 0102 English Composition II***
	• **MATH 0153 Foundations of Number Systems***	• **MATH 0250 Foundations of Patterns, Reasoning and Algebra ***
	• PSYC 0101 Introduction to Psychology • Appreciation of the Arts core course, **often** ART 0104 Design Fundamentals **or** ART 0106 **or** ART 0107 Art Survey I/II **or** ENGL 0104 Introduction to Theater • BIOL 0102 Environmental Biology **or** BIOL 0104 Human Biology **or** BIOL 0106 Biology Today with Lab 16 credits	• Appreciation of the Arts core course (must be in a different discipline) **often** MUSC 0101/0103 Music Appreciation **or** MUSC 0110/ 0111 Basic Music Theory **or** ENGL 0104 Introduction to Theater • HIST 0131 US History to 1865 or US History since 1865 • GNSC 0101 Physical Science with Lab 16 credits /32
2nd Year	• **EDUC 0220 Schools in American Culture (FE)*** • PSYC 0202 Child Development • ENGL World Literature Course (Often ENGL 0221 World Literature to 1750 **or** ENGL 0222 World Literature Since 1750)	• **EDUC 0221 Introduction to Students with Exceptional Learning Needs (FE)*** • ENGL American Literature course (Often ENGL 215, 216 or 217) • GARP 0210 Cultural Geography **or** GARP 0101 World Geography (if GARP 210, a different social understanding course should be taken as fifth liberal studies 15 credit area course.) • EDUC 0201 Learning and Assessment
	• MATH 0105 Calculus I • MATH 0116 First Year Seminar 15 credits	• MATH 0106 Calculus II 15 credits /30
	• Students achieve advanced standing in the education major after completing 57 credits. • Admission is dependent upon students meeting the following criteria: • Overall GPA of 2.6	• Average of 2.7 in English Comp I & II. If student does not achieve a 2.7, s/he must confer with advisor about ways to improve writing. • Successful passing of the MTEL Communication and Literacy test , Field 01 (computerized format only)
3rd Year	• **EDUC 0319 Principles of Teaching and Learning (FE)*+** • **EDUC 0303 Early Literacy and Reading*+** • EDUC 0396 Seminar Recent Developments: Computers in Education or Other ISTE Standards-based technology course	• EDUC 0311 Social Studies in the Elementary School+ • EDUC 0305 Literature and Language Arts+ • EDUC 0380 Critical Multicultural Education (only permitted with Junior or Senior status) • MOVP 0303 Health Education in the Elementary School or MOVP 0301 Physical Education in the Elementary or MOVP 0212 Concepts of Nutrition
	• MATH 0356 Math Methods (replaces EDUC 301) • MATH 0251 Foundations: Geometry or MATH 0252 Foundations: Probability and Statistics or Science Elective	• MATH 03xx Upper-level MATH elective (MATH 355) • MATH 0251 Foundations: Geometry or MATH 0252 Foundations: Probability and Statistics or Science Elective
	15 credits	17 credits /32

+EDUC 0319 is pre or co-requisite to EDUC 0303, EDUC 0305, EDUC 311, GNSC 360, or EDUC 0301 are pre-requisites to EDUC0306

4th Year	• **EDUC 0306 Elementary Curriculum (FE)*** • EDUC 0314 Classroom Management • **EDUC 0363 Sheltered English Immersion(FE)*** • Education Elective (for the major only) • GNSC 0360 Methods of Science Education for the Elementary School+ (2)	• EDUC 0338 Practicum : Elementary (12 credits) (300 hours) • Any remaining course, not required for practicum
	• MATH 0300 Discrete Structures with Proof 17 credits	12-15credits /29 or 32

***Courses in bold should be taken in the semester noted, other courses might be taken in either fall or spring of the year recommended**

NOTE#1: A passing grade on the subject matter tests and a 2.8 overall GPA is required for practicum

FE = Field Experience **BASED ON v. 8/2016**