MATHEMATICS SECONDARY EDUCATION: ADVANCED MATHEMATICS 6-12, BED

Student Learning Outcomes

- Students will solve a variety of problems in mathematics including calculus, probability and statistics, algebra, and geometry.
- Students will write mathematical proofs and solve challenging problems both pure and applied.
- Students will communicate mathematics both orally and in writing.
- Students will identify and utilize the appropriate practices and tools, including the use of technology, to solve mathematics problems.
- Students will apply appropriate mathematical practices and tools, including the use of technology, to teaching mathematical concepts, thinking, and content appropriate for secondary students.
- Students will work collaboratively and persistently with peers to solve mathematics problems to develop learner-centered instruction.

Degree Requirements

In addition to the requirements stated below, students must complete 34-35 hours of General Education (https://catalog.washburn.edu/undergraduate/programs-degrees-graduation-requirements/general-education-requirements/), all requirements for a Bachelor of Education (https://catalog.washburn.edu/undergraduate/college-arts-sciences/degrees/bachelor-education/) degree, and any additional hours needed to reach the minimum 120 credit hours required for graduation. Some of the courses below may also fulfill general education or other degree requirements. Please see your advisor for more information.

Students seeking certification to teach mathematics must also be formally admitted to the University's Professional Teacher Education (https://catalog.washburn.edu/undergraduate/school-applied-studies/education/#admissiontext) Programs.

Code	Title	Hours
Required Courses Inside Mathematics Department		
MA 140	Statistics	3
MA 151	Calculus & Analytic Geometry I	5
MA 152	Calculus & Analytic Geometry II	5
MA 253	Calculus/Analytic Geometry III	3
MA 260	Introduction to Number Theory	3
MA 301	Linear Algebra	3
MA 307	Discrete Mathematics	3
MA 354	Abstract Algebra	3
MA 367	Modern Geometry	3
MA 371	Introduction to Real Analysis I	3
MA 381	History and Literature of Mathematics	3
MA 380	Problem Solving Strategies	1
Select at least two of the following:		2
MA 315	Seminar: Teaching Mathematics	
MA 316	Teaching Algebra	
MA 317	Teaching Trigonometry	
MA 318	Teaching Statistics	
MA 380	Problem Solving Strategies (taken a second time)	
MA 388	Capstone Research	
ED 349	Middle Level Mathematics Practicum	
Subtotal		40
Required Courses Inside Education Department		
ED 155	Teaching, Learning, Leadership	3
ED 165	Ed. 1, Examining Teaching as a Profession: Diversity 1, Literacy 1, Technology 1	3
ED 275	Ed. 2 Exploring Teaching as a Profession (Classroom Management 1, Diversity 2, Technology 2) Ed. 2	3
ED 285	Educational Psychology	3
ED 295	Ed. 3 Experiencing Teaching as a Profession (Classroom Management 2, Diversity 3, Literacy 2)	3
ED 302	Teaching Exceptional Learners	3
ED 354	Curriculum and Assessment	3
ED 363	Methods of Teaching Math in Secondary School	3
ED 395	Ed. 4 Extending Teaching as a Profession (Classroom Management 3, Literacy 3, Technology 3)	3
ED 410	Secondary Student Teaching	12
Subtotal		39
Total Hours		**79**