

Secondary Mathematics Education, B.S.

Degree Offered

- Bachelor of Science

Nature of the Program

The Bachelor of Science in Secondary Mathematics Education program in WVU's School of Education prepares students to meet the content, pedagogical, and professional demands of teaching mathematics in middle and high school settings. Graduates are eligible for certification to teach Mathematics (grades 5–Adult) upon completion of the program.

Students complete more than 900 hours of field and clinical experiences in a variety of public school classrooms. This includes over 125 hours of field observation prior to a year-long residency during the final year of the program. The residency consists of a half-time placement in the first semester and a full-time placement in the second semester. These experiences are grounded in strong partnerships with local schools, offering rich opportunities to work closely with experienced teachers and diverse student populations.

Program coursework is designed with a strong commitment to academic excellence, informed by state and national standards and certification requirements. Courses focus on the specialized work of teaching mathematics, including understanding students and how they learn, curriculum design, instructional strategies, and school contexts. Faculty members are active in their fields as educators and as scholars, bringing relevant and robust expertise to our teacher education programs.

The program also prepares students for key certification milestones, including the Praxis II content exam and the edTPA performance assessment. In addition, students receive ongoing support from academic advisors and career development specialists through the Office of Student Success in the College of Applied Human Sciences.

Designed with flexibility in mind, the program allows students to apply transfer credits, pursue general education electives, or add a minor or second major, particularly in mathematics or related fields. Students may also have the option to complete their final-year residency in their home communities or at a distance, depending on placement availability and program approval.

Graduates of the B.S. in Secondary Mathematics Education program emerge as well-prepared, reflective educators equipped to meet the challenges and opportunities of today's middle and high school classrooms.

Admissions for 2027-2028

FIRST-TIME FRESHMEN

First-Time Freshmen are required to place into MATH 126 or higher.

CURRENT WVU STUDENTS

Students admitted from other majors within WVU must have a 2.5 minimum cumulative GPA.

Current WVU Students are required to place into MATH 126 or higher.

TRANSFER STUDENTS

Students transferring from another institution must have a 2.5 minimum cumulative GPA

Transfer Students are required to place into MATH 126 or higher.

Major Code: 5551

General Education Foundations

Please use this link to view a list of courses that meet each GEF requirement. (<http://registrar.wvu.edu/gef/>)

NOTE: Some major requirements will fulfill specific GEF requirements. Please see the curriculum requirements listed below for details on which GEFs you will need to select.

Code	Title	Hours
General Education Foundations		
F1 - Composition & Rhetoric		3-6
ENGL 101 & ENGL 102	Introduction to Composition and Rhetoric and Composition, Rhetoric, and Research	

or ENGL 103	Accelerated Academic Writing	
F2A/F2B - Science & Technology		4-6
F3 - Math & Quantitative Reasoning		3-4
F4 - Society & Connections		3
F5 - Human Inquiry & the Past		3
F6 - The Arts & Creativity		3
F7 - Global Studies & Diversity		3
F8 - Focus (may be satisfied by completion of a minor, double major, or dual degree)		9
Total Hours		31-37

Please note that not all of the GEF courses are offered at all campuses. Students should consult with their advisor or academic department regarding the GEF course offerings available at their campus.

Curriculum Requirements

Code	Title	Hours
A minimum GPA of 2.5 is required for graduation.		
University Requirements		42
Secondary Mathematics Education Major Requirements		78
Total Hours		120

University Requirements

Code	Title	Hours
General Education Foundations (GEF) 1, 2, 3, 4, 5, 6, 7, and 8 (31-37 Credits)		
Outstanding GEF Requirements (GEF 1, 2, 4, 5, 6, 7)		22
CAHS 191	First-Year Seminar	2
General Electives		18
Total Hours		42

Secondary Mathematics Education Major Requirements

Code	Title	Hours
A minimum GPA of 2.5 is required in all Secondary Mathematics Education Major Requirements		
SECONDARY EDUCATION CORE COURSEWORK		
EDUC 205	Introduction to Teaching and Learning in Secondary Schools	3
EDUC 304	Place-based and Emotionally Responsive Teaching	3
LE 422	Reading in the Content Areas	3
SPED 404	Special Education in Contemporary Society	3
SPED 460	Differentiation of Instruction	3
MATHEMATICS METHODS/PEDAGOGY COURSEWORK		
EDUC 332	Teaching and Learning Mathematics in Secondary Schools 1	3
or EDUC 339	Mathematics & Science Methods for Secondary Teachers 1	
EDUC 432	Teaching and Learning Mathematics in Secondary Schools 2	3
or EDUC 439	Mathematics & Science Methods for Secondary Teachers 2	
MATHEMATICS CONTENT COURSEWORK		
MATH 126 & MATH 128 or MATH 129	College Algebra and Plane Trigonometry (GEF 3) Pre-Calculus Mathematics	3-6
MATH 155	Calculus 1 (GEF 8)	4
MATH 156	Calculus 2	4
MATH 251	Multivariable Calculus	4
Select one of the following:		3
MATH 261	Elementary Differential Equations	
MATH 300- or 400-level *		

STAT 215 or EDUC 232	Introduction to Probability and Statistics (GEF 8) Data Literacy: Strategies and Applications	3
MATH 218	History of Mathematics	3
MATH 338 or EDUC 437	Geometry for Teachers Standards & Curriculum in Secondary Mathematics: Geometric Thinking	3
MATH 376	Foundations, Functions and Regression Models	3
EDUC 436	Standards & Curriculum in Secondary Mathematics: Ratios & Proportional Reasoning	3
PROFESSIONAL FIELD AND CLINICAL EXPERIENCE COURSEWORK		
EDUC 313	Field Experience & Technology Applications in Secondary Schools 1	2
EDUC 314	Field Experience & Technology Applications in Secondary Schools 2	2
EDUC 412	Clinical Experience in Secondary Schools/Residency 1	5
EDUC 413	Clinical Experience in Secondary Schools/Residency 2	9
EDUC 485	Residency/Technology Capstone in Secondary Education	3
Total Hours		78

* Except MATH 490, MATH 495 and MATH 497.

WV Certification Requirements

To be able to be recommended for teacher certification in the area of Mathematics (5-Adult) as a certification program completer, students will also need to meet the following requirements, in addition to completing the major coursework requirements:

- Documentation of Pre-Professional Skills requirement in Reading, Writing, and Mathematics, using one of the following allowable evidence indicated in the West Virginia Licensure Testing Directory.
- Receive a passing score on the Praxis II licensure content exam, #5165: Mathematics Content Knowledge, prior to the clinical/Residency experience.
- Complete, submit, and pass the edTPA professional education assessment during the clinical/Residency experience.
- Maintain at least a cumulative GPA of 2.5.

Suggested Plan of Study

First Year

Fall	Hours	Spring	Hours
CAHS 191		2 ENGL 102 (GEF 1)	3
ENGL 101 (GEF 1)		3 MATH 128 (GEF 8)	3
MATH 126 (GEF 3)		3 GEF 4	3
GEF 2B		4 General Elective	3
General Elective		3 General Elective	3
		15	15

Second Year

Fall	Hours	Spring	Hours
EDUC 205		3 MATH 156	4
MATH 155 (GEF 8)		4 GEF 6	3
STAT 215 or EDUC 232 (GEF 8)		3 GEF 7	3
GEF 5		3 General Elective	3
General Elective		2 General Elective	3
		15	16

Third Year

Fall	Hours	Spring	Hours
EDUC 313		2 EDUC 314	2
EDUC 304		3 EDUC 332	3
SPED 404		3 LE 422	3
MATH 251		4 SPED 460	3

MATH 338 or EDUC 437		3 MATH 261	4
		MATH 218	3
		15	18

Fourth Year

Fall	Hours	Spring	Hours
EDUC 412		5 EDUC 413	9
EDUC 432		3 EDUC 485	3
EDUC 436		3	
MATH 376		3	
		14	12

Total credit hours: 120

Suggested Plan of Study for Transfer Students**Third Year**

Fall	Hours	Spring	Hours
EDUC 205		3 EDUC 314	2
EDUC 313		2 EDUC 332	3
EDUC 304		3 LE 422	3
SPED 404		3 SPED 460	3
MATH 251		4 MATH 261	4
MATH 338 or EDUC 437		3 MATH 218	3
		18	18

Fourth Year

Fall	Hours	Spring	Hours
EDUC 412		5 EDUC 413	9
EDUC 432		3 EDUC 485	3
EDUC 436		3	
MATH 376		3	
		14	12

Total credit hours: 62

Major Learning Outcomes**SECONDARY MATHEMATICS EDUCATION**

- Content Knowledge for Teaching** - Teacher candidates will demonstrate and use a deep and specialized knowledge of mathematics content, including how mathematical ideas develop and are connected in and out of the curriculum, to inform their work supporting meaningful learning of mathematics.
- Learners and Learning** - Teacher candidates will use awareness of how learners grow and develop and an understanding of differences across individual learners to design and implement developmentally appropriate learning experiences to engage all students in the learning process.
- Learning Environments** - Teacher candidates will collaborate with others to create academically safe classroom environments that foster positive and active engagement in learning for all learners.
- Planning for Instruction** - Teacher candidates will develop content goals for student learning that align with state standards and will design plans for instruction that engage students in meaningful learning experiences toward those goals.
- Pedagogy and Instructional Strategies** - Teacher candidates will facilitate learning experiences using a variety of instructional strategies, including the use of appropriate technology tools, to motivate and engage students in discussion and learning.
- Assessment of Student Learning** - Teacher candidates will design and implement both formative and summative assessments of student progress and learning as part of reflecting on and continuously improving instruction and to provide feedback to students about their own development.
- Professional Dispositions and Behaviors** - Teacher candidates will model the ethical standards expected for the teaching profession in the classroom, school, and the community, by engaging in ongoing professional learning and productively collaborating with colleagues, administrators, families, and community members.