

# SECONDARY EDUCATION AND TEACHING, BACHELOR OF SCIENCE IN EDUCATION (B.S.ED.) WITH A CONCENTRATION IN MATH EDUCATION

The purpose of the B.S.Ed. in Secondary Education and Teaching with a concentration in math education is to prepare students to serve as initially licensed teachers in grades six through 12, as well as to serve as educators and leaders in schools and community-based settings. Students enrolled in this program will be required to declare a double major in the Bachelor of Science in Mathematical Sciences with a concentration in secondary teacher preparation. The program will focus on providing students with a solid foundation in secondary education and mathematics to meet the requirements for licensure. Through the core education curriculum, students will become knowledgeable about professional roles and workplace responsibilities while learning basic abilities in the planning and implementation of math lessons for students in grades six through 12. The core curriculum instills fundamental knowledge and skills, with opportunities for observation and application in a variety of settings. Through the mathematics curriculum, students will develop the content knowledge and skills in order to deliver relevant and rigorous lessons in mathematics education. Graduates will be prepared to work in public and private middle and high schools across Virginia, with particular focus in urban and other high-need areas. Graduates will be capable of working with diverse learners and adapting instructional programs based on the needs of their students and clients. Successful completion of the program will result in licensure in secondary mathematics education (grades six through 12).

## Student learning outcomes

1. **Learner and learning:** Students will understand human development and learning theories appropriate to the age group they will teach and acquire an awareness of the diversity of the school-age populations' cultural backgrounds, learning strengths and needs.
2. **Content:** Students will demonstrate knowledge of the subjects they will teach.
3. **Instructional practice:** Students will demonstrate an ability to plan and implement effective teaching and measure student learning in ways that lead to sustained development and learning.
4. **Professional responsibility:** Students will develop an understanding of purposes for education and a defensible philosophical approach toward teaching and demonstrate professional dispositions.

## Mathematics education concentration-specific outcome

1. **Content:** Demonstrate knowledge of the subjects they will teach as mathematics educators.

## Special requirements

- Students must successfully complete all **initial licensure milestone requirements**.
- Students enrolled in this program are required to declare a second major in their content area

## Degree requirements for Secondary Education and Teaching, Bachelor of Science in Education (B.S.Ed.) with a concentration in math education

Course	Title	Hours
<b>General education</b> ( <a href="https://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/">https://bulletin.vcu.edu/undergraduate/undergraduate-study/general-education-curriculum/</a> )		
Select 30 credits of general education courses in consultation with an adviser.		30
<b>Major requirements</b>		
• Major core requirements		
EDUS 202	Diversity, Democracy and Ethics	3
EDUS 301	Human Development and Learning	3
SEDP 405	Collaborative Practices to Support Inclusion for Children and Youth with Disabilities	3
SEDP 452	Supporting Multilingual Learners With Disabilities	1
TEDU 412	Curriculum and Assessment: ____	3
TEDU 452	Teaching Multilingual Learners	2
TEDU 510	Instructional Technology in PK-12 Environments	2
TEDU 588	Classroom Management	3
TEDU 562	Reading Instruction in the Content Areas	3
<b>Secondary education</b>		
TEDU 311	Middle School Practicum	2
TEDU 312	High School Practicum	1
TEDU 469	Secondary Internship I	4
TEDU 470	Secondary Internship II	4
TEDU 545	Teaching Secondary School Mathematics	3
B.S.Ed. open electives will be fulfilled by double major/endorsement courses.		
<b>Concentration requirements</b>		
<b>Math/double major</b>		
MATH 200	Calculus with Analytic Geometry I (counts toward gen eds (if student tests directly into MATH 200))	4
MATH 201	Calculus with Analytic Geometry II	4
MATH 255	Introduction to Computational Mathematics	3
or CMSC 210	Computers and Programming	
MATH 300	Introduction to Mathematical Reasoning	3
MATH 307	Multivariate Calculus	4
MATH 310	Linear Algebra	3
MATH 324	Mathematical Problem Solving	3
MATH 404	Algebraic Structures and Functions	3
MATH 407	Real Analysis	3
MATH 424	Modeling with Mathematics	3
MATH 430	The History of Mathematics	3
MATH 490	Mathematical Expositions	3

MATH 505	Modern Geometry	3
STAT 212	Concepts of Statistics	3
Natural science sequence (three credits count toward general education requirements)		8-10
<b>Total Hours</b>		<b>120</b>

The minimum number of credit hours required for this degree is 120.

## Recommended course sequence/plan of study

### Freshman year

#### Fall semester

MATH 200	Calculus with Analytic Geometry I (satisfies general education quantitative foundations)	4
UNIV 111	Introduction to Focused Inquiry: Play course Investigation and Communication (satisfies video for general education UNIV foundations)	3
Introduction to Focused Inquiry: Investigation and Communication		
Additional requirements waived for students who double major in mathematics and secondary education (HUMS 202, experiential fine arts, foreign language 101 and 102 and natural sciences sequence)		
Humanities/fine arts elective and CIAI elective		3
Natural sciences sequence (select one of the following) (satisfies general education BOK for natural sciences and AOI for scientific and logical reasoning)		4-5
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
PHYS 201	General Physics I	4
PHYS 207	University Physics I	5
<b>Term Hours:</b>		<b>14-15</b>

#### Spring semester

MATH 201	Calculus with Analytic Geometry II	4
STAT 212	Concepts of Statistics	3
UNIV 112	Focused Inquiry II (satisfies general education UNIV foundations)	3
Play course Focused Inquiry II		
Additional requirements waived for students who double major in mathematics and secondary education (HUMS 202, experiential fine arts, foreign language 101 and 102 and natural sciences sequence)		
Natural sciences sequence (select one of the following)		4-5
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4

PHYS 202	General Physics II	4
PHYS 208	University Physics II	5
<b>Term Hours:</b>		<b>14-15</b>

### Sophomore year

#### Fall semester

EDUS 202	Diversity, Democracy and Ethics	3
MATH 255 or CMSC 210	Introduction to Computational Mathematics or Computers and Programming	3
MATH 307	Multivariate Calculus	4
UNIV 200	Advanced Focused Inquiry: Literacies, Research and Communication (satisfies general education UNIV foundations)	3
General education course (Global perspectives AOI)		3
<b>Term Hours:</b>		<b>16</b>

#### Spring semester

2.8 GPA required for admission to teacher preparation		
EDUS 301	Human Development and Learning	3
MATH 300	Introduction to Mathematical Reasoning	3
MATH 310	Linear Algebra	3
General education course (select AOI in consultation with adviser)		3
General education course (complete BOK requirement)		3
<b>Term Hours:</b>		<b>15</b>

### Junior year

#### Fall semester

MATH 324	Mathematical Problem Solving	3
MATH 407	Real Analysis	3
MATH 430	The History of Mathematics	3
SEDP 405	Collaborative Practices to Support Inclusion for Children and Youth with Disabilities	3
TEDU 562	Reading Instruction in the Content Areas	3
<b>Term Hours:</b>		<b>15</b>

#### Spring semester

MATH 404	Algebraic Structures and Functions	3
MATH 424	Modeling with Mathematics	3
SEDP 452	Supporting Multilingual Learners With Disabilities	1
TEDU 311	Middle School Practicum	2
TEDU 452	Teaching Multilingual Learners	2
TEDU 588	Classroom Management	3
General education course (select AOI in consultation with adviser)		3
<b>Term Hours:</b>		<b>17</b>

### Senior year

#### Fall semester

MATH 490	Mathematical Expositions	3
MATH 505	Modern Geometry	3
TEDU 312	High School Practicum	1
TEDU 510	Instructional Technology in PK-12 Environments	2
TEDU 545	Teaching Secondary School Mathematics	3

Open elective	3
<b>Term Hours:</b>	<b>15</b>
<b>Spring semester</b>	
TEDU 412 Curriculum and Assessment: ____	3
TEDU 469 Secondary Internship I	4
TEDU 470 Secondary Internship II	4
Open elective	3
<b>Term Hours:</b>	<b>14</b>
<b>Total Hours:</b>	<b>120-122</b>

The minimum number of credit hours required for this degree is 120.