

# Secondary Education in Mathematics



The Secondary Education in Mathematics major at Penn State Behrend prepares students for careers as mathematics teachers from seventh through twelfth grade by providing both a strong foundation in mathematical content and hands-on experience in the classroom. The program emphasizes content knowledge, problem solving, curriculum development, lesson and unit planning, the use of technology, and the evaluation of student knowledge.

The program stresses the teaching philosophies of the National Council of Teachers of Mathematics (NCTM), knowledge students then put into practice in teaching experiences supervised by highly qualified teachers.

This four-year degree is accredited by the National Council for Accrediting of Teaching Education (NCATE), and graduates meet all academic requirements for the Pennsylvania Department of Education's Instructional I certificate.

## Why Major in Secondary Education in Mathematics?

Students in Penn State Behrend's program gain hands-on experience with middle and high school students under the supervision of highly qualified, experienced teachers. Students will use

and compare different instructional and assessment techniques and develop the skills to grow continually as professional educators.

The program focuses on providing students with numerous diverse experiences related to the cultural, historical, and scientific evolution of mathematics, while teaching them to use their knowledge flexibly in authentic situations.

The major is one of the most content-driven mathematics education programs in the region. The program is designed so that students can easily double major in mathematics, giving its graduates added flexibility and expertise in mathematics.

## Career Planning

The Academic and Career Planning Center (ACPC) assists students with career and life planning. You may schedule appointments with the ACPC staff to discuss career interests, skills, values, and goal setting, as well as how to find career information, internships, full-time jobs, and graduate schools. Students are encouraged to utilize the services of the ACPC.

## Careers in Mathematics Education

Analysts project there will be a need for new mathematics and science teachers in middle and high schools over the next decade. A shortage of such teachers considered to be a growing problem in the United States.

Additionally, school districts require all teachers to be highly qualified. Essentially, each teacher must demonstrate a mastery of knowledge in the subject that they are teaching. This program is designed to produce graduates who have a strong content knowledge of mathematics together with the ability to apply best practices in the classroom.

## Who to Contact?

School of Science, Mathematics  
4951 College Drive  
Erie, PA 16563-1501  
814-898-6105

[behrend.psu.edu/mathed](http://behrend.psu.edu/mathed)

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Erie The Behrend College

**Typical course sequence for the Bachelor of Science in:**

# Secondary Education in Mathematics

Semester 1	Credits
Calculus with Analytic Geometry I	4
Introduction to Programming Techniques	3
Introductory Psychology	3
Rhetoric and Composition	3
Natural Science course	3
First-Year Seminar	1
<b>Total Credits</b>	<b>17</b>

Semester 3	Credits
Calculus and Vector Analysis	4
Concepts of Discrete Mathematics	4
Statistical Analysis I	3
Learning and Instruction	3
Introductory Field Experience	1-3
Effective Speech	3
<b>Total Credits</b>	<b>18-20</b>

Semester 5	Credits
Concepts of Real Analysis	3
Geometry for Teachers	4
Inclusive Special Education Foundations	4
Arts course	3
Senior level Mathematics course	3
Health and Physical Activity	1.5
<b>Total Credits</b>	<b>18.5</b>

Semester 7	Credits
Teaching Secondary Mathematics II	3
Basic Abstract Algebra	3
Introduction to Probability Theory	3
Senior level Mathematics course	3
Clinical Application of Instruction— Secondary Education	3
<b>Total Credits</b>	<b>15</b>

Semester 2	Credits
Calculus with Analytic Geometry II	4
Matrices	2
Arts course	3
Natural Science course	3
Literature Selection	3
Health and Physical Activity	1.5
<b>Total Credits</b>	<b>16.5</b>

Semester 4	Credits
Experimental Methods	3
Elementary Combinatorics	3
Education in American Society	3
Introductory Field Experience	1-3
Effective Writing	3
Introduction to Teaching English Language Learners	3
<b>Total Credits</b>	<b>16-18</b>

Semester 6	Credits
Teaching Secondary Mathematics I	3
Teaching Mathematics in Technology-Intensive Environments	3
Linear Algebra	3
Evidence-Based Methods for Teaching Secondary Students with Disabilities in Inclusive Settings	3
Adolescence	3
Natural Science course	3
<b>Total Credits</b>	<b>18</b>

Semester 8	Credits
Practicum in Student Teaching— Secondary Education	15
No additional coursework permitted during Student Teaching	

\*This is meant to be representative of a typical course sequence. Schedules will vary by student, depending on areas of interest. See [bulletins.psu.edu/bluebook](http://bulletins.psu.edu/bluebook) for specific requirements.