Mathematics Education (BS): Computer Specialization

The Mathematics Education: Computer Specialization (BS) degree is one of four undergraduate degree options in the Mathematics Education program in the Department of STEM Education.

This degree program prepares teacher-leaders to have a deep understanding of the mathematics and computer science they will teach and knowledge about different pedagogical strategies they can apply in the classroom. Students take five courses focused on mathematics education, beginning in their sophomore year and take five computer science courses in lieu of math electives. Our professional courses in the junior and senior year offer relevant pedagogical experiences, emphasize teaching mathematics with technology, and provide rich field experiences in math classrooms. Graduates are recommended for an initial North Carolina teaching license in mathematics grades 9-12 and are also poised to teach computer science courses at the secondary level. They will be able to seek employment opportunities in education and make a positive difference in their communities.

Students in this program also have the opportunity to participate in:

- Undergraduate research
- Kappa student chapter of the NC Council of Teachers of Mathematics, and other high impact experiences such as Passport to Success, SAY Village, and study abroad
- Tutoring in local schools

For more information about this program, visit our website (https://ced.ncsu.edu/programs/mathematics-education-middle-school-or-secondary-bachelor/).

Program Coordinator:

Dr. Cyndi Edgington
502J Poe Hall
919.515.1754
cpedging@ncsu.edu

Plan Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
</tr>
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<tbody>
<tr>
<td>ED 100</td>
<td>Intro to Education</td>
<td>2</td>
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<td>ST 311</td>
<td>Introduction to Statistics</td>
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<td>ST 312</td>
<td>Introduction to Statistics II</td>
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<td>ST 307</td>
<td>Introduction to Statistical Programming-SAS</td>
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<th>Code</th>
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<tbody>
<tr>
<td>MA 141</td>
<td>Calculus I</td>
<td>4</td>
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<td>MA 241</td>
<td>Calculus II</td>
<td>4</td>
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<tr>
<td>MA 242</td>
<td>Calculus III</td>
<td>4</td>
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</tr>
<tr>
<td>MA 225</td>
<td>Foundations of Advanced Mathematics</td>
<td>3</td>
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<tr>
<td>MA 403</td>
<td>Introduction to Modern Algebra</td>
<td>3</td>
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<tr>
<td>MA 405</td>
<td>Introduction to Linear Algebra</td>
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<tr>
<td>MA 408</td>
<td>Foundations of Euclidean Geometry</td>
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<th>Code</th>
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<tbody>
<tr>
<td>CSC 110</td>
<td>Computer Science Principles - The Beauty and Joy of Computing</td>
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<td>CSC 116</td>
<td>Introduction to Computing - Java</td>
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<tr>
<td>CSC 216</td>
<td>Software Development Fundamentals</td>
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<td>CSC 226</td>
<td>Discrete Mathematics</td>
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<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
<th>Counts towards</th>
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<tbody>
<tr>
<td>EMS 204</td>
<td>Introduction to Mathematics Education</td>
<td>2</td>
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<tr>
<td>ED 204</td>
<td>Introduction to Teaching in Today's Schools</td>
<td>2</td>
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<td>EDP 304</td>
<td>Educational Psychology</td>
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<td>ELP 344</td>
<td>School and Society</td>
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<td>ECI 305</td>
<td>Equity and Education</td>
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<tr>
<td>EMS 480</td>
<td>Teaching Mathematics with Technology</td>
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<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>ED 311</td>
<td>Classroom Assessment Principles and Practices ²</td>
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<tr>
<td>ED 312</td>
<td>Classroom Assessment Principles and Practices Professional Learning Lab ²</td>
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<tr>
<td>EMS 472</td>
<td>Teaching Mathematics Topics in Senior High School ²</td>
<td>3</td>
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<tr>
<td>EMS 470</td>
<td>Methods and Materials for Teaching Mathematics ²</td>
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<td>EMS 471</td>
<td>Student Teaching in Mathematics ²</td>
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<td>EMS 495</td>
<td>Senior Seminar in Mathematics and Science Education ²</td>
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<td>EMS 490</td>
<td>School Mathematics from an Advanced Perspective ²</td>
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<tr>
<td>ECI 416</td>
<td>Teaching Students with Disabilities in Inclusive Classrooms ²</td>
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### GEP Courses

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<thead>
<tr>
<th>Code</th>
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<tr>
<td>ENG 101</td>
<td>Academic Writing and Research ¹</td>
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<tr>
<td>GEP Humanities (<a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/</a>)</td>
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<tr>
<td>GEP Health and Exercise Studies (<a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/</a>)</td>
<td>2</td>
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</tr>
<tr>
<td>GEP U.S. Diversity (<a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-us-diversity/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-us-diversity/</a>) (verify requirement)</td>
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<tr>
<td>GEP Global Knowledge (<a href="http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/">http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/</a>) (verify requirement)</td>
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### World Language Proficiency (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/world-language-proficiency/) (verify requirement)

### Free Electives

Free Electives ⁴  4

### Total Hours

120

1. A grade of C- or higher is required.
2. A grade of C or higher is required.
3. A grade of B- or better is required.
4. Students should consult their academic advisors to determine which courses fill this requirement.

## Lab-Based Science Courses

### Chemistry Sequence

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CH 101 &amp; CH 102</td>
<td>Chemistry - A Molecular Science and General Chemistry Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CH 201 &amp; CH 202</td>
<td>Chemistry - A Quantitative Science and Quantitative Chemistry Laboratory</td>
<td>4</td>
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</tbody>
</table>

### Biology Sequence

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BIO 181</td>
<td>Introductory Biology: Ecology, Evolution, and Biodiversity</td>
<td>4</td>
</tr>
<tr>
<td>BIO 183</td>
<td>Introductory Biology: Cellular and Molecular Biology</td>
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### Physics Sequence A

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>PY 205 &amp; PY 206</td>
<td>Physics for Engineers and Scientists I and Physics for Engineers and Scientists I Laboratory</td>
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</tr>
<tr>
<td>PY 208 &amp; PY 209</td>
<td>Physics for Engineers and Scientists II and Physics for Engineers and Scientists II Laboratory</td>
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### Physics Sequence B

<table>
<thead>
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<th>Code</th>
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<tr>
<td>PY 201</td>
<td>University Physics I</td>
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<td>Semester</td>
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<tr>
<td>Fall</td>
<td>MA 141</td>
<td>Calculus I</td>
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<td>Spring</td>
<td>MA 241</td>
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<td>Calculus III</td>
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<td>ST 312</td>
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<td>Fall</td>
<td>ECI 305</td>
<td>Equity and Education</td>
</tr>
<tr>
<td>Spring</td>
<td>ECI 305</td>
<td>Equity and Education</td>
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</table>

**Career Opportunities**

**Career Titles**

- Elementary School Teacher
- High School Teacher
• Math Professor
• Middle School Teacher

Learn More About Careers

NCCareers.org (https://nccareers.org/)
Explore North Carolina’s central online resource for students, parents, educators, job seekers and career counselors looking for high quality job and career information.

Occupational Outlook Handbook (https://www.bls.gov/ooh/)
Browse the Occupational Outlook Handbook published by the Bureau of Labor Statistics to view state and area employment and wage statistics. You can also identify and compare similar occupations based on your interests.

Career One Stop Videos (https://www.careeronestop.org/)
View videos that provide career details and information on wages, employment trends, skills needed, and more for any occupation. Sponsored by the U.S. Department of Labor.

Focus 2 Career Assessment (https://careers.dasa.ncsu.edu/explore-careers/career-assessments/) (NC State student email address required)
This career, major and education planning system is available to current NC State students to learn about how your values, interests, competencies, and personality fit into the NC State majors and your future career. An NC State email address is required to create an account. Make an appointment with your career counselor (https://careers.dasa.ncsu.edu/about/hours-appointments/) to discuss the results.

National Council of Teachers of Mathematics (https://www.nctm.org/About/)
North Carolina Association of Educators (https://www.ncae.org/)
American Mathematical Society (https://www.ams.org/home/page/)
Society for Industrial and Applied Mathematics (https://www.siam.org/)