MAJOR IN MATHEMATICS, MATHEMATICS EDUCATION CONCENTRATION

Major Completion Map
Distinctive Requirements for Degree Program:

TO PREPARE FOR FIRST SEMESTER: The curriculum for the Major in Mathematics, Mathematics Education Concentration assumes students enter college prepared to take calculus. Entering students who are not prepared to take calculus will need to fulfill pre-calculus requirements in the first semester: MATH 117, MATH 118, MATH 124, MATH 125, MATH 126. A minimum grade of C (2.000) is required in all mathematics, statistics, and computer science courses that are required by the major.

### Freshman Semester 1

<table>
<thead>
<tr>
<th>Critical</th>
<th>Recommended</th>
<th>AUCC</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO 150</td>
<td>College Composition (GT-CO2)</td>
<td>1A</td>
<td>3</td>
</tr>
<tr>
<td>MATH 160</td>
<td>Calculus for Physical Scientists I (GT-MA1)</td>
<td>X</td>
<td>1B</td>
</tr>
<tr>
<td>MATH 192</td>
<td>First Year Seminar in Mathematical Sciences</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Arts and Humanities</td>
<td><a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a></td>
<td>3B</td>
<td>3</td>
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<tr>
<td>Historical Perspectives</td>
<td><a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives</a></td>
<td>3D</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
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<td>1</td>
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<tr>
<td>Pre-Calculus Requirements must be completed by the end of Semester 1, if needed (MATH 117, MATH 118, MATH 124, MATH 125, MATH 126).</td>
<td>X</td>
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<tr>
<td>Total Credits</td>
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### Freshman Semester 2

<table>
<thead>
<tr>
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<th>Recommended</th>
<th>AUCC</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 161</td>
<td>Calculus for Physical Scientists II (GT-MA1)</td>
<td>X</td>
<td>1B</td>
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<tr>
<td>Select four credits from the following:</td>
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<tr>
<td>CS 150A</td>
<td>Culture and Coding: Java (GT-AH3)</td>
<td>3B</td>
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<tr>
<td>CS 150B</td>
<td>Culture and Coding: Python (GT-AH3)</td>
<td>3B</td>
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<tr>
<td>CS 152</td>
<td>Python for STEM</td>
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</tr>
<tr>
<td>CS 163</td>
<td>CS1—No Prior Programming Experience</td>
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</tr>
<tr>
<td>CS 164</td>
<td>CS1—Computational Thinking with Java</td>
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</tr>
<tr>
<td>MATH 151</td>
<td>Mathematical Algorithms in Matlab I</td>
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<tr>
<td>MATH 152</td>
<td>Mathematical Algorithms in Maple</td>
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</tr>
<tr>
<td>CS 158/</td>
<td>Mathematical Algorithms in C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 158</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 158</td>
<td>Introduction to R Programming</td>
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</tr>
<tr>
<td>Arts and Humanities</td>
<td><a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a></td>
<td>3B</td>
<td>3</td>
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<tr>
<td>Diversity, Equity, and Inclusion</td>
<td><a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion</a></td>
<td>1C</td>
<td>3</td>
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<tr>
<td>Elective</td>
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<tr>
<td>CO 150 and MATH 160 must be completed by the end of Semester 2.</td>
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<td>Total Credits</td>
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</table>

### Sophomore Semester 3

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<tr>
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<th>AUCC</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 275</td>
<td>Schooling in the United States (GT-SS3)</td>
<td>X</td>
<td>3C</td>
</tr>
<tr>
<td>MATH 230</td>
<td>Discrete Mathematics for Educators</td>
<td>X</td>
<td>3</td>
</tr>
<tr>
<td>PH 141</td>
<td>Physics for Scientists and Engineers I (GT-SC1)</td>
<td>3A</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>MATH 161 must be completed by the end of Semester 3.</td>
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<td>X</td>
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<td>Total Credits</td>
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### Sophomore Semester 4

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<th>Credits</th>
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<tbody>
<tr>
<td>EDUC 340</td>
<td>Literacy and the Learner</td>
<td>X</td>
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<tr>
<td>Total Credits</td>
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</table>
Major in Mathematics, Mathematics Education Concentration

MATH 261  Calculus for Physical Scientists III  X  4
MATH 369  Linear Algebra I  X  3
Advanced Writing (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)  2  3
Biological and Physical Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#biological-physical-sciences)  3A  4
MATH 230 must be completed by the end of Semester 4.  X

| Total Credits | 17 |

Junior

Semester 5

<table>
<thead>
<tr>
<th>Course</th>
<th>Critical</th>
<th>Recommended</th>
<th>AUCC</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 331</td>
<td>Educational Technology and Assessment</td>
<td>X</td>
<td>2</td>
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<tr>
<td>MATH 366</td>
<td>Introduction to Abstract Algebra</td>
<td>X</td>
<td>4A</td>
<td>3</td>
</tr>
<tr>
<td>STAT 315</td>
<td>Intro to Theory and Practice of Statistics</td>
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<td></td>
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<tr>
<td>Mathematical Science Elective (See Concentration Requirements Tab)</td>
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<tr>
<td>Additional Biological and Physical Science Electives (See Concentration Requirements Tab)</td>
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<td>3A</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Elective</td>
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EDUC 275, EDUC 340, MATH 261 and Admission to Teacher Licensure Program must be completed by the end of Semester 5.

| Total Credits | 18 |

Semester 6

<table>
<thead>
<tr>
<th>Course</th>
<th>Critical</th>
<th>Recommended</th>
<th>AUCC</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDUC 350</td>
<td>Instruction I-Individualization/Management</td>
<td>X</td>
<td>3</td>
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<tr>
<td>EDUC 386</td>
<td>Practicum-Instruction I</td>
<td>X</td>
<td>1</td>
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<tr>
<td>EDUC 464</td>
<td>Methods and Materials in Teaching Mathematics</td>
<td>X</td>
<td>4</td>
<td></td>
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<tr>
<td>MATH 317</td>
<td>Advanced Calculus of One Variable</td>
<td>X</td>
<td>4B</td>
<td>3</td>
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<tr>
<td>MATH 470</td>
<td>Euclidean and Non-Euclidean Geometry</td>
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<tr>
<td>MATH 230 must be completed by the end of Semester 6.</td>
<td></td>
<td></td>
<td>X</td>
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| Total Credits | 14 |

Senior

Semester 7

<table>
<thead>
<tr>
<th>Course</th>
<th>Critical</th>
<th>Recommended</th>
<th>AUCC</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDUC 450</td>
<td>Instruction II-Standards and Assessment</td>
<td>X</td>
<td>4</td>
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<tr>
<td>EDUC 486E</td>
<td>Practicum: Instruction II</td>
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<td>MATH 425</td>
<td>History of Mathematics</td>
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<td>Electives</td>
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MATH 317 and MATH 366 must be completed by the end of Semester 7.

| Total Credits | 15 |

Semester 8

<table>
<thead>
<tr>
<th>Course</th>
<th>Critical</th>
<th>Recommended</th>
<th>AUCC</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EDUC 485B</td>
<td>Student Teaching: Secondary</td>
<td>X</td>
<td>11</td>
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<tr>
<td>EDUC 493A</td>
<td>Seminar: Professional Relations</td>
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The benchmark courses for the 8th semester are the remaining courses in the entire program of study.

| Total Credits | 12 |

Program Total Credits: 120