APPLIED AND COMPUTATIONAL MATHEMATICS OPTION

This option is offered within the following major(s):

- Mathematics - College of Science (http://catalog.oregonstate.edu/college-departments/science/mathematics/mathematics-bs-hbs)

The Applied and Computational option offers Mathematics majors an opportunity to concentrate much of their upper-division course work in the area of applied and computational mathematics. This degree option is designed to allow students to focus on applied mathematics, modeling, and computation after completing core junior and lower-division mathematics requirements.

A grade of at least C– and a GPA of 2.25 are required in all mathematics courses used to fulfill degree requirements. No course used to fulfill requirements for the mathematics major or any of its options may be taken S/U.

The lower-division requirements for the Applied and Computational Mathematics option are the same as those for the Mathematics BS degree. The upper-division requirements are as follows.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td></td>
<td><strong>Upper-Division Requirements</strong></td>
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<tr>
<td></td>
<td><strong>Part A. Required Applied and Computational Mathematics Core Classes</strong></td>
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<tr>
<td>MTH 311</td>
<td>ADVANCED CALCULUS</td>
<td>8</td>
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<tr>
<td>&amp; MTH 312</td>
<td>and ADVANCED CALCULUS</td>
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<tr>
<td>MTH 323</td>
<td>*MATHEMATICAL MODELING</td>
<td>3</td>
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<tr>
<td>MTH 341</td>
<td>LINEAR ALGEBRA I</td>
<td>3</td>
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<tr>
<td>MTH 342</td>
<td>LINEAR ALGEBRA II</td>
<td>4</td>
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<tr>
<td>MTH 343</td>
<td>INTRODUCTION TO MODERN ALGEBRA</td>
<td>3</td>
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<tr>
<td>MTH 355</td>
<td>DISCRETE MATHEMATICS</td>
<td>3</td>
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<tr>
<td>MTH 483</td>
<td>COMPLEX VARIABLES</td>
<td>3</td>
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<td><strong>Part B. Area Course Work</strong></td>
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<td>Select five of the following:</td>
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<tr>
<td>MTH 420</td>
<td>MODELS AND METHODS OF APPLIED MATHEMATICS</td>
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<tr>
<td>MTH 440</td>
<td>COMPUTATIONAL NUMBER THEORY</td>
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<td>MTH 441</td>
<td>APPLIED AND COMPUTATIONAL ALGEBRA</td>
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<td>MTH 451</td>
<td>NUMERICAL LINEAR ALGEBRA</td>
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<tr>
<td>MTH 452</td>
<td>NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS</td>
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<td>MTH 453</td>
<td>NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS</td>
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<tr>
<td>MTH 480</td>
<td>SYSTEMS OF ORDINARY DIFFERENTIAL EQUATIONS</td>
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<td>MTH 481</td>
<td>APPLIED ORDINARY DIFFERENTIAL EQUATIONS</td>
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<tr>
<td>MTH 482</td>
<td>APPLIED PARTIAL DIFFERENTIAL EQUATIONS</td>
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<td><strong>Part C. Probability or Statistics</strong></td>
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<td>MTH 361</td>
<td>INTRODUCTION TO PROBABILITY</td>
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<tr>
<td>MTH 463</td>
<td>PROBABILITY I</td>
<td></td>
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</tbody>
</table>

1 Either MTH 453 NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS or MTH 482 APPLIED PARTIAL DIFFERENTIAL EQUATIONS must be included. (Note: Only one of MTH 480 SYSTEMS OF ORDINARY DIFFERENTIAL EQUATIONS and MTH 481 APPLIED ORDINARY DIFFERENTIAL EQUATIONS can be used to satisfy requirements for a degree in Mathematics.)

2 This includes non-blanket numbered (not X99- or X0X-numbered) upper-division MTH courses, upper-division ST courses, or other courses of a mathematical nature approved by the departmental head advisor. MTH 390 FOUNDATIONS OF ELEMENTARY MATHEMATICS is not allowed.

^ Writing Intensive Course (WIC)

Option Code: 692