

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.

Option Code: 692

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.

Code	Title	Credits
Upper-Division Requirements		
<i>Part A. Required Applied and Computational Mathematics Core Classes</i>		
MTH 311 & MTH 312	ADVANCED CALCULUS I and ADVANCED CALCULUS II	8
MTH 323	*MATHEMATICAL MODELING	3
MTH 341	LINEAR ALGEBRA I	3
MTH 342	LINEAR ALGEBRA II	4
MTH 343	INTRODUCTION TO MODERN ALGEBRA	4
MTH 355	DISCRETE MATHEMATICS	3
MTH 483	COMPLEX VARIABLES	3
<i>Part B. Area Course Work</i>		
Select five of the following: ¹		15
MTH 420	MODELS AND METHODS OF APPLIED MATHEMATICS	
MTH 440	COMPUTATIONAL NUMBER THEORY	
MTH 441	APPLIED AND COMPUTATIONAL ALGEBRA	
MTH 451	NUMERICAL LINEAR ALGEBRA	
MTH 452	NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS	
MTH 453	NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS	
MTH 480	SYSTEMS OF ORDINARY DIFFERENTIAL EQUATIONS	
MTH 481	APPLIED ORDINARY DIFFERENTIAL EQUATIONS	
MTH 482	APPLIED PARTIAL DIFFERENTIAL EQUATIONS	
<i>Part C. Probability or Statistics</i>		
Select one of the following:		3-4
MTH 361	INTRODUCTION TO PROBABILITY	
MTH 463	PROBABILITY I	
ST 351	INTRODUCTION TO STATISTICAL METHODS	
ST 421	INTRODUCTION TO MATHEMATICAL STATISTICS	
Part D. Electives		
Select two additional upper-division elective courses of a mathematical nature ²		6
Total Credits		52-53

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Either MTH 453 or MTH 482 must be included. (**Note:** Only one of MTH 480 and MTH 481 can be used to satisfy requirements for a degree in Mathematics.)

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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 is not allowed.

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Writing Intensive Course (WIC)

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