

# STATISTICS 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 Statistics option offers Mathematics majors an opportunity to concentrate their senior level course work in the area of statistics and probability after completing core junior and lower-division mathematics requirements. This degree option is designed to allow a focus on the study of the mathematical theory underlying statistics while simultaneously developing expertise in statistical applications.

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 Statistics option are the same as those for the Mathematics BS degree. The upper-division requirements are as follows.

Code	Title	Hours
<b>Upper-Division Requirements</b>		
<i>Part A: Required Mathematics Core Classes</i>		
MTH 311 & MTH 312	ADVANCED CALCULUS and ADVANCED CALCULUS	8
MTH 341	LINEAR ALGEBRA I	3
MTH 342	LINEAR ALGEBRA II	4
MTH 343	INTRODUCTION TO MODERN ALGEBRA	3
MTH 355	DISCRETE MATHEMATICS	3
Select one of the following writing intensive courses (WIC):		3
MTH 323	^MATHEMATICAL MODELING	
MTH 333	^FUNDAMENTAL CONCEPTS OF TOPOLOGY	
MTH 338	^NON-EUCLIDEAN GEOMETRY	
<i>Part B: Statistics and Probability Core Classes</i>		
MTH 463	PROBABILITY I	3
MTH 464	PROBABILITY II	3
ST 411	METHODS OF DATA ANALYSIS	4
ST 412	METHODS OF DATA ANALYSIS	4
ST 421	INTRODUCTION TO MATHEMATICAL STATISTICS	4
ST 422	INTRODUCTION TO MATHEMATICAL STATISTICS	4
<i>Part C: Depth in Statistics or Probability</i>		
Select one of the following:		3-4
MTH 465	PROBABILITY III	
MTH 467	ACTUARIAL MATHEMATICS	
ST 413	METHODS OF DATA ANALYSIS	
ST 415	DESIGN AND ANALYSIS OF PLANNED EXPERIMENTS	
ST 431	SAMPLING METHODS	
ST 439	SURVEY METHODS	
ST 441	PROBABILITY, COMPUTING, AND SIMULATION IN STATISTICS	
ST 443	APPLIED STOCHASTIC MODELS	
<i>Part D: Breadth in Mathematics</i>		
Select one from each of two of the following five areas: <sup>1</sup>		6

## Algebra and Number Theory

MTH 440	COMPUTATIONAL NUMBER THEORY
MTH 441	APPLIED AND COMPUTATIONAL ALGEBRA
<b>Analysis</b>	
MTH 411	REAL ANALYSIS
MTH 483	COMPLEX VARIABLES
<b>Applied Mathematics</b>	
MTH 420	MODELS AND METHODS OF APPLIED MATHEMATICS
MTH 427	INTRODUCTION TO MATHEMATICAL BIOLOGY
MTH 480	SYSTEMS OF ORDINARY DIFFERENTIAL EQUATIONS
MTH 481	APPLIED ORDINARY DIFFERENTIAL EQUATIONS
<b>Geometry and Topology</b>	
MTH 430	METRIC SPACES AND TOPOLOGY
MTH 434	INTRODUCTION TO DIFFERENTIAL GEOMETRY
<b>Numerical Analysis</b>	
MTH 351	INTRODUCTION TO NUMERICAL ANALYSIS
MTH 451	NUMERICAL LINEAR ALGEBRA
MTH 452	NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS

Total Hours 55-56

<sup>1</sup> MTH 321 INTRODUCTORY APPLICATIONS OF MATHEMATICAL SOFTWARE can be substituted for one of the two area classes.

<sup>^</sup> Writing Intensive Course (WIC)

**Option Code: 658**