

MAJOR IN MATH - PURE MATHEMATICS CONCENTRATION

The Pure Mathematics Concentration requires 66 units completed with a grade equivalent of 2.00 or higher.

Students must complete the Core Curriculum requirements in addition to the requirements for a concentration.

The following are common requirements for all Mathematics concentrations:

Code	Title	Units
MATH 265	ELEMENTARY LINEAR ALGEBRA	4
MATH 267	INTRODUCTION TO ABSTRACT MATHEMATICS	4
MATH 273	CALCULUS I	4
MATH 274	CALCULUS II	4
MATH 275	CALCULUS III	4
Select one of the following courses: ¹		3-4
MATH 369	INTRODUCTION TO ABSTRACT ALGEBRA	
MATH 463	LINEAR ALGEBRA	
MATH 473	INTRODUCTORY REAL ANALYSIS	
Total Units		23-24

¹ Student in the Applied Mathematics concentration must take MATH 369.

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Code	Title	Units
Required Courses		
Common requirements (see above)		24
COSC 236	INTRODUCTION TO COMPUTER SCIENCE I	4
MATH 331	PROBABILITY	4
MATH 374	DIFFERENTIAL EQUATIONS	3
MATH 463	LINEAR ALGEBRA	3
MATH 467	ALGEBRAIC STRUCTURES	3
MATH 473	INTRODUCTORY REAL ANALYSIS	4
MATH 475	COMPLEX ANALYSIS	3
MATH 490	SENIOR SEMINAR IN MATHEMATICS	3

Upper-Division Mathematics Electives

Select at least five of the following		15
Select at least two of the following:		
MATH 315	APPLIED COMBINATORICS	
MATH 332	MATHEMATICAL STATISTICS	
MATH 353	EUCLIDEAN AND NON-EUCLIDEAN GEOMETRIES	
MATH 377	MATHEMATICAL MODELS ¹	
or MATH 439 COMPUTATIONAL PROBABILITY MODELS		
MATH 379	FOURIER ANALYSIS WITH APPLICATIONS	
Select at least two of the following: ²		
MATH 451	GRAPH THEORY	
MATH 457	DIFFERENTIAL GEOMETRY	
MATH 465	THEORY OF NUMBERS	

MATH 477	TOPOLOGY	
Total Units		66

¹ One of MATH 377 or MATH 439, but not both

Note: The Department of Mathematics recommends PHYS 241 be taken to satisfy the Core Curriculum requirement for Biological and Physical Sciences.

Suggested Four-Year Plan

Based on course availability and student needs and preferences, the selected sequences will probably vary from those presented below. Students should consult with their adviser to make the most appropriate elective choices.

Freshman

Term 1	Units	Term 2	Units
MATH 273	4	MATH 265	4
ENGL 102 or TSEM 102 (Core 1 or 2)	3	MATH 274	4
Core	3	COSC 236	4
Core	3	TSEM 102 or ENGL 102 (Core 2 or 1)	3
		13	15

Sophomore

Term 1	Units	Term 2	Units
MATH 267	4	MATH 331	4
MATH 275	4	MATH 374	3
Core 7 (PHYS 241 recommended)	3-4	Core 8 (PHYS 242 recommended)	3-4
Core	3	Core	3
Elective	1-3	Core	3
		15-18	16-17

Junior

Term 1	Units	Term 2	Units
MATH 369	4	MATH 463	3
MATH Elective	3	MATH Elective	3
Elective	3-4	MATH Elective	3
Core	3	MATH Elective	3
Core	3	Core	3
		16-17	15

Senior

Term 1	Units	Term 2	Units
MATH 467	3	MATH 475	3
MATH 473	4	MATH 490	3
MATH Elective	3	MATH Elective	3
Core	3-4	Elective	3-4
Elective	3-4	Elective	3-4
		16-18	15-17

Total Units 121-130

1. Demonstrate knowledge of the properties of numbers and sets.
2. Demonstrate skills and knowledge of appropriate technology used in solving mathematical problems.
3. Demonstrate skills and knowledge of the basic concepts of calculus.
4. Demonstrate skills and knowledge of linear and abstract algebra.

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5. Demonstrate skills and knowledge of basic probability and/or statistics.