

# Mathematics

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Saint-Jean  
Salts  
Seaton  
Thelusma  
Zaderman

## Department Mission

Mathematics belongs both to the sciences and to the liberal arts. Not only is it the language of science, but it is also studied for its own beauty. Its basic elements are logic and intuition, analysis and construction, generality and individuality.

The department of Mathematics offers a wide spectrum of mathematics courses ranging from first-year courses to upper-level advanced courses that cover the full undergraduate curriculum in mathematics, leading to a B.S. in Mathematics. The challenging B.S. degree program is excellent preparation for graduate study at any university.

The Mathematics major and minor prepare students for careers in business, government, industry, teaching, and research. The rapid advances of science and technology have multiplied the domains in which mathematics is a prerequisite for a variety of applications in modern technologies. In today's technology-oriented climate, the department's graduates have new opportunities for employment and professional advancement.

## Goals and Objectives

- *Introduce students to the fundamental areas of mathematics and train students in the analytical thinking characteristics of pure and applied mathematics.*
- *Teach students abstract mathematical reasoning and provide familiarity with rigorous methods of mathematical proof.*
- *Prepare mathematics majors for the competitive world of graduate studies in mathematics and related sciences.*

# Program Requirements

## Major in Mathematics

Students considering the Mathematics major should consult an advisor during their first or second semester to plan the proper

course sequence and continue to consult the Chairperson of the Mathematics department at least once each semester. Students entering the major should have demonstrated knowledge of MAT 1107 Pre-Calculus and MAT 2202 Calculus I.

Courses	Credits	Prerequisite(s)	Co-Requisite(s)
General Education Program ( <a href="#">see page 15</a> ).....	48		
First year College.....			
Bodies of Knowledge.....			
Select <b>EITHER</b> Group A or Group B below <sup>1</sup> .....	6		
Group A—Select <b>TWO</b> foreign language courses in sequence			
Group B—Select <b>TWO</b> IT courses in sequence			
MAT 2202 Calculus I.....	4	MAT 1107 or placement exam	
MAT 2203 Calculus II.....	4	MAT 2202	
MAT 3304 Calculus III.....	4	MAT 2203	
MAT 3312 Linear Algebra.....	4	MAT 2203	
MAT 3401 Differential Equations I.....	3	MAT 2203	
MAT 4403 Advanced Calculus I.....	4	MAT 3304	
MAT 4404 Advanced Calculus II.....	4	MAT 4403	
MAT 4409 Modern Algebra.....	3	MAT 3304	
MAT 4415 Probability Theory.....	3	MAT 3304	
Select <b>TWO</b> MAT 2000-4000 level MAT courses.....	6		
MAT 4418 Senior Seminar <sup>2</sup> .....	3		
PHY 2001 General Physics I.....	4	MATH 2202.....	PHY 2001L PHY 2001R
General electives.....	24		
<b>Total credits required</b> .....	<b>124</b>		

<sup>1</sup>Two courses in the same foreign language or two courses in Information Technology, at least one of which is a high-level computer language.

<sup>2</sup>The successful presentation and completion of a set of comprehensive problems during the senior mathematics seminar (MAT 4418) to be administered in the senior year is a graduation requirement for a baccalaureate degree in Mathematics. This seminar and examination satisfies the College's Comprehensive Examination.

## Minor in Mathematics

The purpose of the Mathematics minor is to provide the student with an introduction to some of the topics of higher mathematics. This minor would be especially useful to those students who

intend to pursue graduate programs in the sciences, economics, and various areas of business, since knowledge of some higher mathematics is necessary for successful study in these fields.

Courses	Credits	Prerequisite(s)	Co-Requisite(s)
MAT 2202 Calculus I.....	4	MAT 1107 or placement exam	
MAT 2203 Calculus II.....	4	MAT 2202	
MAT 3304 Calculus III.....	4	MAT 2203	
MAT 3312 Linear Algebra.....	4	MAT 2203	
Select <b>TWO</b> of the following courses.....	6		
MAT 2309 College Geometry.....		MAT 1107	
MAT 3401 Differential Equations I.....		MAT 2203	
MAT 3406 Theory of Numbers.....		MAT 2202	
MAT 4403 Advanced Calculus I.....		MAT 3304	
MAT 4408 Numerical Analysis.....		MAT 3304 or MAT 3401	
MAT 4409 Modern Algebra.....		MAT 3304	
MAT 4413 Advanced Linear Algebra.....		MAT 3312	
MAT 4415 Probability Theory.....		MAT 3304	
<b>Total credits required</b> .....	<b>22</b>		

