

MATHEMATICAL BIOLOGY MINOR

The mathematical biology minor is aimed at students majoring in STEM fields outside of mathematics and provides them with an opportunity to enhance their quantitative and analytical expertise within their primary area of study. This minor is especially relevant to those preparing for careers in life sciences, such as public health, medical research and others. This interdisciplinary curriculum requires core math courses in linear algebra and differential equations and offers electives in biology, biomedical engineering and marine science.

Minor Requirements (22 Hours)

Prerequisites

Course	Title	Credits
Required Math Prerequisites: ¹		
MATH 141	Calculus I	4
MATH 142	Calculus II	4
MATH 241	Vector Calculus	3
Required Science Prerequisites: ²		
Select two of the following:		
BIOL 101	Biological Principles I	
BIOL 101L	Biological Principles I Laboratory	
BIOL 102	Biological Principles II	
BIOL 102L	Biological Principles II Laboratory	
MSCI 101	The Ocean Environment	
MSCI 102	The Living Ocean	
Other Requirements:		
Select one of the following:		
BIOL 301	Ecology and Evolution	
BIOL 303	Fundamental Genetics	
MSCI 314	Physical Oceanography	
Total Credit Hours		22

¹ Fulfills Carolina Core ARP Requirement

² Fulfills Carolina Core SCI requirement.

Biology majors must take BIOL 101, BIOL 101L, BIOL 102 and BIOL 102L. Marine Science majors must take MSCI 101 and MSCI 102.

Courses for the Minor (19 Hours)

Minor courses cannot be counted toward student's major

Linear Algebra (4 Hours)

Course	Title	Credits
Select one of the following:		
MATH 344	Applied Linear Algebra	
MATH 344L	Applied Linear Algebra Lab	
or		
MATH 544	Linear Algebra	
MATH 344L	Applied Linear Algebra Lab	
Total Credit Hours		4

Differential Equations (6 Hours)

Course	Title	Credits
Select two of the following:		
MATH 242	Elementary Differential Equations	
MATH 520	Ordinary Differential Equations	
MATH 521	Boundary Value Problems and Partial Differential Equations	
Total Credit Hours		6

Additional Courses (9 Hours)

Course	Title	Credits
Select three of the following:		
MATH 520	Ordinary Differential Equations ((if not selected above))	
MATH 521	Boundary Value Problems and Partial Differential Equations ((if not selected above))	
BIOL 552	Population Genetics	
	or MSCI 552 Population Genetics	
BIOL 652	Evolutionary Biology	
BMEN 212	Fundamentals of Biomedical Systems	
BMEN 240	Cellular and Molecular Biology with Engineering Applications	
BMEN 263	Introduction to Biomechanics	
BMEN 290	Thermodynamics of Biomolecular Systems	
BMEN 391	Kinetics in Biomolecular Systems	
MATH 523	Mathematical Modeling of Population Biology	
MSCI 582	Marine Hydrodynamics	
Total Credit Hours		9