

# MATHEMATICS-PHYSICS MAJOR – B.A.

This B.A. degree requires 90 liberal arts credits out of the 120 credits required for graduation.

*Policy on prerequisites:* A grade of C- or better is required for a course in mathematics to fulfill a prerequisite for another mathematics course. A student must receive the permission of the mathematics department to take a mathematics course that is a prerequisite for a mathematics course for which he or she has previously received credit.

## Summary

Code	Title	Credits
	Mathematics-Physics B.A. Major Requirements	62-64
	Integrative Core Curriculum Requirements and Electives <sup>1</sup>	56-58
<b>Total Credits</b>		<b>120</b>

<sup>1</sup> *This major is approved to fulfill the Integrative Core Curriculum (<https://catalog.ithaca.edu/undergrad/programsaz/integrative-core-curriculum/>) requirement for the Natural Sciences perspective.*

## Degree Requirements

An overall average of C (2.00) or above is required in mathematics and physics courses being used to fulfill the minimum course requirements for the major.

Code	Title	Credits
<b>REQUIRED MATHEMATICS COURSES</b>		
MATH 10800	Applied Calculus or MATH 1110C Calculus I	4
MATH 11200	Calculus II	4
MATH 19100	World of Mathematics	1
MATH 21100	Calculus III	4
MATH 21400	Differential Equations or MATH 2160C Statistical Analysis	3
MATH 23100	Linear Algebra	3
MATH xxxxx	Course(s) at the 300-level or above (excluding MATH 39100)	6-8
<b>REQUIRED PHYSICS COURSES</b>		
PHYS 11000	Introductory Mathematical and Computational Methods for Physics	2
PHYS 12100	Light and Special Relativity	4
PHYS 12200	Momentum, Energy, and Heat	4
PHYS 12300	Classical Fields: Gravity, Electricity, & Magnetism	4
PHYS 21000	Intermediate Mathematical and Computational Methods for Physics	2
PHYS 22400	Classical and Quantum Waves	4
PHYS 25000	Intermediate Applied Physics Design Laboratory or PHYS 26000 Intermediate Physics Laboratory	2
PHYS 31000	Advanced Mathematical and Computational Methods for Physics	4
Physics Directed Electives:		8

PHYS 32200	Classical Mechanics
PHYS 32300	Electromagnetism
PHYS 32400	Quantum Mechanics
PHYS 32500	Thermal Physics

### CAPSTONE

Select one of the following options: 3

#### OPTION 1

MATH 49800	Capstone in Mathematics I
MATH 49900	Capstone in Mathematics II

#### OPTION 2

PHYS 499xx	Advanced Physics Research
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**Total Credits** 62-64