

# Honors Mathematical Physics Requirements (90)

## Foundation Courses

- PHYS 144 - Newtonian Mechanics
- PHYS 181 - Relativity, Electricity and Magnetism

### 3 units from:

MATH 117 - Honors Calculus I  
MATH 144 - Calculus for the Mathematical and Physical Sciences I \_\_\_\_\_

### 3 units from:

MATH 118 - Honors Calculus II  
MATH 146 - Calculus for the Mathematical and Physical Sciences II \_\_\_\_\_

### 3 units from:

MATH 125 - Linear Algebra I  
MATH 127 - Honors Linear Algebra I \_\_\_\_\_

## Senior Courses

- MA PH 343 - Classical Mechanics II
- MA PH 364 - Group Theory in Physics (See Note 3)
- MA PH 451 - Mathematical Methods for Physics II
- MA PH 499 - Undergraduate Research Project
- MATH 216 - Introduction to Analysis (See Note 1)
- MATH 217 - Honors Calculus III
- MATH 337 - Introduction to Partial Differential Equations
- PHYS 234 - Introductory Computational Physics
- PHYS 244 - Classical Mechanics I
- PHYS 271 - Introduction to Modern Physics
- PHYS 295 - Experimental Physics I
- PHYS 310 - Thermodynamics and Kinetic Theory
- PHYS 311 - Statistical Physics
- PHYS 362 - Optical Physics
- PHYS 372 - Quantum Mechanics A
- PHYS 381 - Electromagnetic Theory I
- PHYS 458 - Special and General Relativity
- PHYS 472 - Quantum Mechanics B
- PHYS 481 - Electromagnetic Theory II

### 3 units from:

MATH 225 - Linear Algebra II  
MATH 227 - Honors Linear Algebra II \_\_\_\_\_

### 3 units from:

MATH 311 - Theory of Functions of a Complex Variable  
MATH 411 - Honors Complex Variables \_\_\_\_\_

### 3 units from: (See Note 2)

ASTRO or PHYS at the 400-level \_\_\_\_\_

### 3 units from:

MATH or PHYS at the 400-level \_\_\_\_\_

### Notes:

1. Students who successfully complete MATH 117 must replace MATH 216 with 3 units selected from MATH at the 200-level or higher.
2. Students who take 3 units in a 400-level ASTRO course for this program requirement will also be satisfying the Breadth from Within the Faculty of Science requirement.
3. MA PH 364 may be offered every second year and must be taken in either Year 3 or Year 4.

### 3 units from:

MA PH 251 - Differential Equations for Physics  
MATH 334 - Ordinary Differential Equations  
MATH 336 - Honors Ordinary Differential Equations \_\_\_\_\_

### 3 units from:

MA PH 351 - Mathematical Methods for Physics I  
MATH 317 - Honors Calculus IV \_\_\_\_\_

- COMM
- COMM
- IND
- BO\_\_
- BO\_\_
- BSBS
- BSFS
- BSSS
- LAB