

PHYSICS MAJOR

Degree Requirements

All students are required to complete overall degree requirements in addition to their major. Please see Degree Completion Requirements (<https://catalog.hiram.edu/undergraduate/student-academic-responsibilities-performance/degree-completion-requirements/>) for full details for students entering in the 2022-2023 catalog year.

Those students who started at Hiram prior to the 2022-2023 academic year will follow the Degree Requirements outlined in your catalog of record.

Major Requirements

A typical schedule for a physics major with strong math skills might be shown in "Physics Pathway A". Another possible schedule is shown in "Physics Pathway B" that lets students solidify their math skills before tackling the math-intensive science courses.

Speak with your advisor to determine which pathway is most appropriate for you.

Code	Title	Hours
Required Courses		
PHYS 21300 & PHYS 21400	FUNMNNTLS OF PHYSICS-W/LAB I:SM and FUNMNNTL OF PHYSICS-W/LAB II:SM	8
PHYS 22500	INTRO ELECTRONICS-W/LAB	4
PHYS 32000	FUNMNNTLS OF MRDN PHYSICS-W/LAB	4
PHYS 33000	MECHANICS	3
CHEM 35000	PHYSICAL CHEMISTRY I-W/LAB	4
PHYS 35000	QUANTUM PHYSICS	4
PHYS 36000	ELECTROMAGNETIC THEORY	4
PHYS 44000	PHYSICS ADVANCED LABORATORY	3
Capstone		
PHYS 48000	SENIOR SEMINAR ¹	1
Required Correlative Courses		
MATH 19800	CALCULUS I:MM	4
MATH 19900	CALCULUS II:MM	4
MATH 20000	CALCULUS III:MM	4
MATH 21800	LINEAR ALGEBRA:MM	3
MATH 24300	DIFFERENTIAL EQUATIONS:MM	3
CPSC 17000 or CPSC 17100	JAVA SUPPLEMENT or INTRO TO COMPUTER SCI-W/LAB:MM	1-4
CPSC 17200	INTRO TO PROGRAMMING-W/LAB:MM	4
Total Hours		58-61

¹

Includes a 30-minute public presentation and a written thesis on the student's senior research project.

Pathways

Physics Pathway A

This pathway is for students who have demonstrated strength in math and physics.

Course	Title	Hours	Term
First Year			
Fall 12 Week			
UCS 10101	FIRST-YEAR ENDURING QUESTIONS	4	_____
MATH 19800	CALCULUS I:MM ¹	4	_____
PHYS 21300	FUNMNNTLS OF PHYSICS-W/LAB I:SM	4	_____
Hours		12	
Fall 3 Week			
MATH 21800	LINEAR ALGEBRA:MM ²	3	_____
Hours		3	
Spring 12 Week			
UCS 20201	ADDRESSING URGENT QUESTIONS	4	_____
MATH 19900	CALCULUS II:MM ¹	4	_____
PHYS 21400	FUNMNNTL OF PHYSICS-W/LAB II:SM	4	_____
Hours		12	
Spring 3 Week			
Hiram Core Requirement		3-4	_____
Hours		3-4	
Second Year			
Fall 12 Week			
MATH 20000	CALCULUS III:MM ¹	4	_____
PHYS 32000	FUNMNNTLS OF MRDN PHYSICS-W/LAB	4	_____
Hiram Core Requirement		4	_____
Hours		12	
Fall 3 Week			
PHYS 33000	MECHANICS ³	3	_____
Hours		3	
Spring 12 Week			
CHEM 35000	PHYSICAL CHEMISTRY I-W/LAB	4	_____
Hiram Core Requirement		4	_____
Hiram Core Requirement		4	_____
Hours		12	
Spring 3 Week			
MATH 24300	DIFFERENTIAL EQUATIONS:MM ²	3	_____
Hours		3	
Third Year			
Fall 12 Week			
UCS 30301	URGENT CHALLENGE SEMINAR:TT	4	_____
PHYS 22500	INTRO ELECTRONICS-W/LAB ²	4	_____
Hiram Core Requirement		4	_____
Hours		12	
Fall 3 Week			
Hiram Core Requirement		3-4	_____
Hours		3-4	
Spring 12 Week			
PHYS 35000	QUANTUM PHYSICS ²	4	_____

Hiram Core Requirement	4	_____
Elective, Second Major, Minor Course	4	_____
Hours	12	
Spring 3 Week		
PHYS 44000 PHYSICS ADVANCED LABORATORY ³	3	_____
Hours	3	
Fourth Year		
Fall 12 Week		
CPSC 17100 INTRO TO COMPUTER SCI-W/LAB:MM (or Elective, Second Major, Minor Course) ⁴	4	_____
Hiram Core Requirement	4	_____
Elective, Second Major, Minor Course	4	_____
Hours	12	
Fall 3 Week		
Elective, Second Major, Minor Course	3-4	_____
Hours	3-4	
Spring 12 Week		
CPSC 17000 JAVA SUPPLEMENT ⁵	1	_____
CPSC 17200 INTRO TO PROGRAMMING-W/LAB:MM	4	_____
PHYS 36000 ELECTROMAGNETIC THEORY ³	4	_____
Hiram Core Requirement	4	_____
Hours	13	
Spring 3 Week		
Elective, Second Major, Minor Course	3-4	_____
Hours	3-4	
Total Hours	121-125	

1

"Critical" to timely degree progression.

2

Every other odd year

3

Every other even year

4

Or can take 1 credit CPSC 17000 JAVA SUPPLEMENT in spring

5

Take if CPSC 17100 INTRO TO COMPUTER SCI-W/LAB:MM not taken in fall

Physics Pathway B

This pathway starts physics courses in year two, allowing students to solidify math skills in year one.

Course	Title	Hours	Term
First Year			
Fall 12 Week			
UCS 10101	FIRST-YEAR ENDURING QUESTIONS	4	_____
MATH 19800	CALCULUS I:MM ¹	4	_____

Hiram Core Requirement	4	_____
Hours	12	
Fall 3 Week		
Hiram Core Requirement	3-4	_____
Hours	3-4	
Spring 12 Week		
UCS 20201 ADDRESSING URGENT QUESTIONS	4	_____
MATH 19900 CALCULUS II:MM ¹	4	_____
Hiram Core Requirement	3-4	_____
Hours	11-12	
Spring 3 Week		
Hiram Core Requirement	3-4	_____
Hours	3-4	
Second Year		
Fall 12 Week		
MATH 20000 CALCULUS III:MM ¹	4	_____
PHYS 21300 FUNMNTLS OF PHYSICS-W/LAB I:SM	4	_____
Hiram Core Requirement	4	_____
Hours	12	
Fall 3 Week		
Hiram Core Requirement or Elective	3-4	_____
Hours	3-4	
Spring 12 Week		
PHYS 21400 FUNMNTL OF PHYSICS-W/LAB II:SM	4	_____
Elective, Second Major, Minor Course	4	_____
Hiram Core Requirement	4	_____
Hours	12	
Spring 3 Week		
Hiram Core Requirement or Elective	3-4	_____
Hours	3-4	
Third Year		
Fall 12 Week		
UCS 30301 URGENT CHALLENGE SEMINAR:TT	4	_____
PHYS 22500 INTRO ELECTRONICS-W/LAB ²	4	_____
PHYS 32000 FUNMNTLS OF MRDN PHYSICS-W/LAB	4	_____
Hours	12	
Fall 3 Week		
MATH 21800 LINEAR ALGEBRA:MM ²	3	_____
Hours	3	
Spring 12 Week		
PHYS 35000 QUANTUM PHYSICS ²	4	_____
Hiram Core Requirement	4	_____
Elective, Second Major, Minor Course	4	_____
Hours	12	
Spring 3 Week		
PHYS 44000 PHYSICS ADVANCED LABORATORY ³	3	_____
Hours	3	

Fourth Year

Fall 12 Week

CPSC 17100	INTRO TO COMPUTER SCI-W/ LAB:MM (or Elective, Second Major, Minor Course) ⁴	4	_____
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Elective, Second Major, Minor Course		4	_____
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Elective		4	_____
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Hours	12
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Fall 3 Week

PHYS 33000	MECHANICS ³	3	_____
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Hours	3
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Spring 12 Week

CPSC 17000	JAVA SUPPLEMENT ⁵	1	_____
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CPSC 17200	INTRO TO PROGRAMMING-W/ LAB:MM	4	_____
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CHEM 35000	PHYSICAL CHEMISTRY I-W/LAB	4	_____
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PHYS 36000	ELECTROMAGNETIC THEORY ³	4	_____
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Hours	13
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Spring 3 Week

MATH 24300	DIFFERENTIAL EQUATIONS:MM ²	3	_____
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Hours	3
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Total Hours	120-125
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1

"Critical" to timely degree progression.

2

Every other odd year

3

Every other even year

4

Or can take 1 credit CPSC 17000 JAVA SUPPLEMENT in spring

5

Take if CPSC 17100 INTRO TO COMPUTER SCI-W/LAB:MM not taken in fall