

PHYSICS, BACHELOR OF SCIENCE

Physics, Bachelor of Science Requirements

Code	Title	Credits
GENERAL EDUCATION REQUIREMENTS - 46 Hours Required		
Minimum of "C-" required		
Fundamental Academic Skills		15
ENGL 1150	ENGLISH COMPOSITION I	
ENGL 1160	ENGLISH COMPOSITION II	
Writing in the Discipline Course		
CMST 1110 or CMST 2120	PUBLIC SPEAKING FUNDS ARGUMENTATION AND DEBATE	
MATH 1120 or MATH 1100 or MATH 1130 or MATH 1140 or MATH 1300 or STAT 1100 or STAT 1530	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING DATA LITERACY AND VISUALIZATION QUANTITATIVE LITERACY QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS COLLEGE ALGEBRA WITH SUPPORT DATA LITERACY AND VISUALIZATION ELEMENTARY STATISTICS	
Distribution Requirements		31
Natural Science - From two disciplines and at least one lab - 7 hrs		
Social Science - From two disciplines - 9 hrs		
Humanities and Fine Arts - From two disciplines- 9 hrs		
Global Diversity - 3 hrs		
US Diversity - 3hrs		
MAJOR REQUIREMENTS		
**Course will satisfy UNO's General Education requirement		
^Course requires pre-requisite(s)		
Physics Bachelor of Science - 55 Hours Required		48
Required coursework		
PHYS 1950	PHYSICS GATEWAY COURSE	
PHYS 2110 & PHYS 1154	GENERAL PHYSICS I - CALCULUS LEVEL and GENERAL PHYSICS LABORATORY I	
PHYS 2120 & PHYS 1164	GENERAL PHYSICS-CALCULUS LEVEL and GENERAL PHYSICS LABORATORY II	
PHYS 2130	MODERN PHYSICS	
PHYS 3250	MATHEMATICAL METHODS OF PHYSICS (*)	
MATH 1950	CALCULUS I (*)	
MATH 1960	CALCULUS II	
MATH 1970	CALCULUS III	
PHYS 3450	CLASSICAL MECHANICS	
PHYS 3600	THERMODYNAMICS AND STATISTICAL PHYSICS	
PHYS 3750	ELECTRICITY AND MAGNETISM I	
PHYS 3800	OPTICS	
PHYS 4200	INTRODUCTION TO QUANTUM MECHANICS	
PHYS 3504	EXPERIMENTAL PHYSICS I	

PHYS 4950 or PHYS 4960	PROBLEMS IN PHYSICS PROBLEMS IN PHYSICS	
Select one of the following		1
PHYS 3524	EXPERIMENTAL MATERIALS SCIENCE	
PHYS 3544	EXPERIMENTAL PHYSICS III	
PHYS 3564	EXPERIMENTAL PHYSICS IV	
Select two additional three-hour courses of Physics (PHYS) at the 3000 or 4000 Level		6
*Students taking a number of 2000-level mathematics courses may be permitted to waive PHYS 3250 or PHYS 3260.		
College Breadth (choose one option)		15-30+
Option 1: Complete any UNO minor or undergraduate certificate - 15+ hours		
Option 2: Additional General Education Requirements - 19+ hours		
Additional quantitative literacy - 3 hours		
Additional Social Science Gen. Ed. from 3rd Discipline - 3 hours		
Additional Humanities Gen. Ed. from 3rd Discipline - 3 hours		
HIST 1000 and HIST 1010 - 6 hours		
Additional Nat. and Physical Science w/ Lab - 4-5 hours		
Option 3: CAS comprehensive major (50+ hours) OR any second UNO major (30+ hours)		
Bachelor Science Cognate Requirement		15-16
See Advisor		
ELECTIVES		
Elective hours as required to reach a total of 120 hours		

Physics, Bachelor of Science Four Year Plan

Freshman		Credits
Fall		
CMST 1110 or CMST 2120	PUBLIC SPEAKING FUNDS or ARGUMENTATION AND DEBATE	3
ENGL 1150	ENGLISH COMPOSITION I (*)	3
MATH 1950	CALCULUS I (**)	5
PHYS 1950	PHYSICS GATEWAY COURSE	1
Humanity & Fine Arts Course #1		3
*ENGL 1150: Requires appropriate placement via EPPE or AP.		
**MATH 1950: Requires ALEKS Exam or ACT or SAT scores OR grades of C- or better within the past 2 years in both Math 1320 and 1330 or Math 1340.		
Credits		15
Spring		
ENGL 1160	ENGLISH COMPOSITION II (*)	3
MATH 1960	CALCULUS II	4
PHYS 2110 & PHYS 1154	GENERAL PHYSICS I - CALCULUS LEVEL and GENERAL PHYSICS LABORATORY I (**)	5
Social Science Course #1		3
*ENGL 1160: Requires ENGL 1150 or placement via EPPE or AP.		
**PHYS 2110: Requires MATH 1950.		
Credits		15
Sophomore		
Fall		
MATH 1970	CALCULUS III	4

PHYS 2120 & PHYS 1164	GENERAL PHYSICS-CALCULUS LEVEL and GENERAL PHYSICS LABORATORY II (*)	5
Social Science #2		3
Humanities/Fine Arts Course #2 - Add U.S. Diversity		3
*PHYS 2120: Requires PHYS 2110-1154 and MATH 1960. Also counts as A&S Additional Gen Ed Natural Science with Lab.		
Credits		15
Spring		
PHYS 2130	MODERN PHYSICS (*)	4
PHYS 3250	MATHEMATICAL METHODS OF PHYSICS (**)	3
Social Science #3 & US Diversity Course***		3
Humanities/Fine Arts Course #3 - Add Global Diversity^		3
Natural/Physical Science no Lab#		3
*PHYS 2130: Requires PHYS 2110, PHYS 2120, MATH 1950, and MATH 1960.		
**PHYS 3250: Requires MATH 1950, 1960, 1970, and PHYS 2120.		
***SS must be in a 2nd discipline.		
^HFA must be in a 2nd discipline.		
#NPS Must be in a field other than PHYS.		
Credits		16
Junior		
Fall		
HIST 1010 or Course towards Minor/2nd Major*		3
PHYS 3504	EXPERIMENTAL PHYSICS I (**)	1
PHYS 3750	ELECTRICITY AND MAGNETISM I (***)	3
Upper Level PHYS Elective		3
Social Science Gen Ed for A&S or Course towards Minor/2nd Major^		3
Elective/Cognate Course		3
*A&S College Requirement Options.		
**PHYS 3504: Requires PHYS 2120.		
***PHYS 3750: Requires MATH 1950, 1960, 1970, and PHYS 3250.		
^A&S College Requirement Options. SS Must be in a 3rd discipline.		
Credits		16
Spring		
HIST 1000 or Course towards Minor/2nd Major*		3
PHYS 3450	CLASSICAL MECHANICS (**)	3
PHYS 3800	OPTICS (***)	3
HFA Gen Ed for A&S or Course towards Minor/2nd Major^		3
Elective/Cognate Course		3
*A&S College Requirement Options		
**PHYS 3450: Requires MATH 1970 and PHYS 3250.		
***PHYS 3800: Requires PHYS 2120 and MATH 1970.		
^A&S College Requirement Options. HFA Must be in a 3rd discipline.		
Credits		15
Senior		
Fall		
PHYS 3544 or PHYS 3524 or PHYS 3564	EXPERIMENTAL PHYSICS III (*) or EXPERIMENTAL MATERIALS SCIENCE or EXPERIMENTAL PHYSICS IV	1

PHYS 3600	THERMODYNAMICS AND STATISTICAL PHYSICS (**)	3
PHYS 4200	INTRODUCTION TO QUANTUM MECHANICS (***)	3
Elective or Course towards Minor/2nd Major/Cognate Course		3
Elective or Course towards Minor/2nd Major/Cognate Course		3
Elective		2
*PHYS 3544: Requires PHYS 2120.		
**PHYS 3600: Requires PHYS 2120 and MATH 1970.		
***PHYS 4200: Requires PHYS 3250.		
Credits		15
Spring		
ENGL 3980	TECHNICAL WRITING ACROSS THE DISCIPLINES (*)	3
PHYS 4950 or PHYS 4960	PROBLEMS IN PHYSICS (**)	1
Upper Level PHYS Elective		3
Elective or Course towards Minor/2nd Major/Cognate Course***		3
Elective or Course towards Minor/2nd Major/Cognate Course***		3
*ENGL 3980: Requires ENGL 1160		
**PHYS 4950 and 4960: Requires PHYS 2120 and permission of instructor. See "Graduation Requirements" below for more information.		
***120 total credits required for degree. Electives are used to reach that minimum amount. 27 upper level credits throughout the entire degree are required. Electives may need to be taken at the 3000-4000 level to reach this minimum.		
Credits		13
Total Credits		120

This roadmap is a suggested plan of study and does not replace meeting with an advisor. Please note that students may need to adjust the actual sequence of courses based on course availability. Please consult an advisor in your major program for further guidance.

This plan is not a contract and curriculum is subject to change

Additional Information About this Plan:

University Degree Requirements:

The minimum number of hours for a UNO undergraduate degree is 120 credit hours. Please review the requirements for your specific program to determine all requirements for the program. In order to graduate on-time (four years for an undergraduate degree), you need to take 30 hours each year.

Placement Exams:

For Math, English, Foreign Language, a placement exam may be required. More information on these exams can be found at <https://www.unomaha.edu/enrollment-management/testing-center/placement-exams/information.php>

**Transfer credit or placement exam scores may change suggested plan of study

GPA Requirements: 2.0

Graduation Requirements: Physics majors must also take the two assessment tests (Major Field Test and Local test) and complete the exit interview.

The senior project must be approved and the department chair notified at least eight months prior to graduation as a Physics major and the student must register for either PHYS 4950 (<https://catalog.unomaha.edu/search/?P=PHYS%204950>) or PHYS 4960 (<https://catalog.unomaha.edu/search/?P=PHYS%204960>).