

PHYSICS, BACHELOR OF SCIENCE WITH A CONCENTRATION IN PHYSICS EDUCATION

To obtain a B.S. with a major in Physics, a student must fulfill university, college, and departmental requirements.

Physics, Bachelor of Science with a Concentration in Physics Education 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	PUBLIC SPEAKING FUNDS
or CMST 2120	ARGUMENTATION AND DEBATE
MATH 1120	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING
or MATH 1100	DATA LITERACY AND VISUALIZATION
or MATH 1130	QUANTITATIVE LITERACY
or MATH 1140	QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS
or MATH 1300	COLLEGE ALGEBRA WITH SUPPORT
or STAT 1100	DATA LITERACY AND VISUALIZATION
or STAT 1530	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 - 3 hrs

MAJOR REQUIREMENTS

**Course will satisfy UNO's General Education requirement

^Course requires pre-requisite(s)

Physics Major with a Concentration in Physics Education - 95 Hours Required

A Bachelor of Science in physics with a concentration in education leads to a physics teaching certificate at the secondary-school level. In some cases, it is possible to earn both a B.S. in physics and a B.S. in secondary education.

Required Coursework 56

PHYS 1350 & PHYS 1354	PRINCIPLES OF ASTRONOMY and INTRODUCTORY ASTRONOMY LAB (**)
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
PHYS 3300	INTRODUCTION TO BIOMEDICAL PHYSICS
PHYS 3450	CLASSICAL MECHANICS
PHYS 3504	EXPERIMENTAL PHYSICS I
PHYS 3600	THERMODYNAMICS AND STATISTICAL PHYSICS
PHYS 3750	ELECTRICITY AND MAGNETISM I
GEOL 1170	INTRODUCTION TO PHYSICAL GEOLOGY (**)
MATH 1950	CALCULUS I (Requires MATH 1330 or MATH 1340)
MATH 1960	CALCULUS II
MATH 1970	CALCULUS III
CHEM 1180 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY (**)

Additional Requirements for Educator Preparation include a Major Field Test and Local Test

Select all of the following Educator Preparation Program Requirements 27

TED 2100	EDUCATIONAL FOUNDATIONS (** ^)
TED 2200	HUMAN RELATIONS FOR BIAS-FREE CLASSROOMS (** ^)
TED 2380	DEVELOPMENT AND LEARNING IN ADOLESCENCE
TED 2400	PLANNING FOR EFFECTIVE TEACHING
TED 3550	SECONDARY CLASSROOM MANAGEMENT (^)
TED 3690	LITERACY AND LEARNING (^)
TED 4000	SPECIAL METHODS IN THE CONTENT AREA (^)
SPED 3800	DIFFERENTIATION AND INCLUSIVE PRACTICES (^)

In addition, earning the grades 6-12 Nebraska Teaching Certificate requires a semester of Clinical Practice 12

TED 4600	CLINICAL PRACTICE AND SEMINAR: ELEMENTARY OR SECONDARY LEVEL (^)
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College Breadth

College of Arts and Sciences' college breadth requirement satisfied by this major

Bachelor Science Cognate Requirement 15

See Advisor

ELECTIVES

Elective hours as required to reach a total of 120 hours

Physics, Bachelor of Science with a Concentration in Physics Education Four Year Plan

Freshman

Fall	Credits	
CMST 1110	PUBLIC SPEAKING FUNDS 3	
ENGL 1150	ENGLISH COMPOSITION I (*) 3	
MATH 1950	CALCULUS I (**)	5
PHYS 1950	PHYSICS GATEWAY COURSE	1

Social Science Course #1		3
*ENGL 1150: Requires placement exam		
**MATH 1950: Requires placement exam		
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
Humanities/Fine Arts Course #1 + Global Diversity Course		3
*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
TED 2100	EDUCATIONAL FOUNDATIONS (**)	3
TED 2200	HUMAN RELATIONS FOR BIAS-FREE CLASSROOMS (***)	3
*PHYS 2120: Requires PHYS 2110 and MATH 1960		
**TED 2100: Requires 2.50 GPA. Fulfills Advanced Writing Requirement.		
***TED 2200: Requires 2.50 GPA.		
Required: Apply for Educator Preparation Program at this time.		
Recommended but not required: Pass the Praxis CORE Academic Skills.		
Credits		15
Spring		
PHYS 1350 & PHYS 1354	PRINCIPLES OF ASTRONOMY and INTRODUCTORY ASTRONOMY LAB	4
TED 2380	DEVELOPMENT AND LEARNING IN ADOLESCENCE	3
TED 2400	PLANNING FOR EFFECTIVE TEACHING (*)	6
HUMANITIES/FINE ARTS COURSE #2		3
*TED 2400 and 2380 must be taken back-to-back, in either a Morning or Afternoon block.		
Required: Pass Praxis CORE Academic Skills by the end of this semester.		
Required: Acceptance into Educator Preparation Program. Must have 2.75 GPA.		
Credits		16
Junior		
Fall		
CHEM 1180 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY (*)	4
PHYS 3250 or MATH 2350	MATHEMATICAL METHODS OF PHYSICS (**) or DIFFERENTIAL EQUATIONS	3
PHYS 3300	INTRODUCTION TO BIOMEDICAL PHYSICS (***)	3
PHYS 3600	THERMODYNAMICS AND STATISTICAL PHYSICS (#)	3
HUMANITIES/FINE ARTS COURSE #3^		3

*CHEM 1180: Requires MATH 1320 or higher with grade of C- or better in last 2 years or placement via ACT/SAT/Math Placement Exam.		
**PHYS 3250: Requires PHYS 2120 and MATH 1970. MATH 2350 requires MATH 1960		
***PHYS 3300: Requires PHYS 1110. PHYS 2110 and PHYS 2120 are recommended.		
#PHYS 3600: Requires MATH 1970 and PHYS 2120.		
^HUMANITIES/FINE ARTS COURSE MUST BE IN A 2ND DISCIPLINE		
Credits		16
Spring		
PHYS 2130	MODERN PHYSICS (*)	4
PHYS 3450	CLASSICAL MECHANICS (**)	3
TED 3550	SECONDARY CLASSROOM MANAGEMENT (***)	3
TED 3690	LITERACY AND LEARNING (***)	3
Social Science Course #2		3
*PHYS 2130: Requires PHYS 2110, PHYS 2120, MATH 1950 and MATH 1960		
**PHYS 3450: Requires MATH 1970 and PHYS 3250		
***TED 3550 and TED 3690 must be taken back-to-back, in either a Morning or Afternoon block.		
Credits		16
Senior		
Fall		
GEOL 1170	INTRODUCTION TO PHYSICAL GEOLOGY	4
PHYS 3504	EXPERIMENTAL PHYSICS I (*)	1
PHYS 3750	ELECTRICITY AND MAGNETISM I (**)	3
SPED 3800	DIFFERENTIATION AND INCLUSIVE PRACTICES (***)	3
TED 4000	SPECIAL METHODS IN THE CONTENT AREA	3
Social Science Course #3^		3
*PHYS 3504: Requires PHYS 2120. Complements PHYS 3750 and PHYS 4200		
**PHYS 3750: Requires MATH 1970 and PHYS 3250		
***SPED 3800: Must be taken concurrently with TED 4000 or TED 3550		
^Social Science Course: Must be in a 2nd discipline.		
Credits		17
Spring		
TED 4600	CLINICAL PRACTICE AND SEMINAR: ELEMENTARY OR SECONDARY LEVEL	12
Credits		12
Total Credits		122

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: 2.75

Graduation Requirements: Major Field Test, Local Test. For Teaching Certificate: Completion of Praxis CORE