PHYSICS, BACHELOR OF SCIENCE WITH A CONCENTRATION IN BIOMEDICAL PHYSICS

Physics, Bachelor of Science with a Concentration in Biomedical Physics Requirements

Code	Title	Credits
GENERAL EDUCATION REQUIREMENTS - 34 Hours Required		
Minimum of "C-"required		
Fundamental Skills		**15**
Writing – 6 hrs.		
ENGL 1150	ENGLISH COMPOSITION I	
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY	
Oral Communication – 3 hrs.		
CMST 1110	PUBLIC SPEAKING FUNDS	
or CMST 2120	ARGUMENTATION AND DEBATE	
Quantitative Literacy – 3 hrs.		
MATH 1120	INTRODUCTION TO MATHEMATICAL AND COMPUTATIONAL THINKING	
or MATH 1130	QUANTITATIVE LITERACY	
or MATH 1140	QUANTITATIVE REASONING FOR HEALTHCARE PROFESSIONALS	
or MATH 1300	COLLEGE ALGEBRA WITH SUPPORT	
Data Literacy – 3 hrs.		
Select one from the following:		
STAT 1100	DATA LITERACY AND VISUALIZATION	
STAT 1530	ELEMENTARY STATISTICS	
Until Fall 2028, students can satisfy this requirement with an approved data literacy course, or any approved natural or social science general education course.		
Breadth of Knowledge		**13**
Social Science – 3 hrs.		
Humanities – 3 hrs.		
Natural & Physical Science (must complete a lab) – 4 hrs.		
Arts – 3 hrs.		
Individual and Social Responsibility		**6**
Cultural Knowledge – 3 hrs.		
Civic Knowledge and Engagement – 3 hrs.		
MAJOR REQUIREMENTS		
**Course will satisfy UNO's General Education requirement		
^Course requires pre-requisite(s)		
Major Requirements - 55 Hours Required		
Required Coursework		**54**
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 II-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 3300	INTRODUCTION TO BIOMEDICAL PHYSICS	
PHYS 3450	CLASSICAL MECHANICS	
PHYS 3600	THERMODYNAMICS AND STATISTICAL PHYSICS	
PHYS 3750	ELECTRICITY AND MAGNETISM I	
PHYS 3800	OPTICS	
PHYS 3504	EXPERIMENTAL PHYSICS I	
PHYS 4500	BIOLOGICAL PHYSICS	
PHYS 4550	PHYSICS IN MEDICINE	
PHYS 4950	PROBLEMS IN PHYSICS	
or PHYS 4960	PROBLEMS IN PHYSICS	
Select one of the following:		**1**
PHYS 3524	EXPERIMENTAL MATERIALS SCIENCE	
PHYS 3544	EXPERIMENTAL PHYSICS III	
PHYS 3564	EXPERIMENTAL PHYSICS IV	
The following courses from other disciplines are recommended:		
CHEM 1180 & CHEM 1184	GENERAL CHEMISTRY I and GENERAL CHEMISTRY I LABORATORY (**)	
CHEM 1190 & CHEM 1194	GENERAL CHEMISTRY II and GENERAL CHEMISTRY II LABORATORY	
CHEM 2250	ORGANIC CHEMISTRY I	
CHEM 2260 & CHEM 2274	ORGANIC CHEMISTRY II and ORGANIC CHEMISTRY LABORATORY	
And either:		
CHEM 4610	BIOCHEMISTRY OF METABOLISM	
Or:		
BIOL 1450	BIOLOGY I (**)	
BIOL 1750	BIOLOGY II	
CHEM 4650 & CHEM 4654	BIOCHEMISTRY I and BIOCHEMISTRY I LABORATORY	
CHEM 4660 & CHEM 4664	BIOCHEMISTRY II and BIOCHEMISTRY II LABORATORY	
*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 - 18+ hours		
Additional quantitative literacy - 3 hours		
Additional Social Science Gen. Ed. from another Discipline - 3 hours		
Additional Humanities Gen. Ed. from another Discipline - 3 hours		
HIST 1000 and HIST 1010 - 6 hours		
Additional Nat. and Physical Science w/ or without Lab - 3-5 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 with a Concentration in Biomedical Physics Four Year Plan

Freshman

Fall		**Credits**
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
General Education Course or Elective		3
Attend Durango Days; other campus events. Set up a Handshake account and take the Pathway U career assessment. Attend the Student Involvement & Volunteer Fair to explore student organizations. Make advising appointment for spring: Sept-Oct. Work with your advisor to develop your Pathway in Stellic.		
	Credits	**15**
Spring		
ENGL 1160	COLLEGE RESEARCH AND INFORMATION LITERACY	3
MATH 1960	CALCULUS II	4
PHYS 2110 & PHYS 1154	GENERAL PHYSICS I - CALCULUS LEVEL and GENERAL PHYSICS LABORATORY I	5
General Education Course or Elective		3
Attend campus events such as major exploration week to get an idea of interests and career paths. Schedule a resume review with UNO Career Services. Visit faculty office hours and ask about undergraduate research opportunities. Make advising appointment for summer and fall: February – March.		
	Credits	**15**

Sophomore

Fall		
MATH 1970	CALCULUS III	4
PHYS 2120 & PHYS 1164	GENERAL PHYSICS II-CALCULUS LEVEL and GENERAL PHYSICS LABORATORY II	5
General Education Course or Elective		3
General Education Course or Elective		3
Attend the Career & Internship Fair to start networking with employers. Look for volunteer, research, or part-time work to gain experience. Join a student organization or club related to your field or interests. Make advising appointment for spring: Sept. - Oct.		
	Credits	**15**
Spring		
PHYS 2130	MODERN PHYSICS	4
PHYS 3250	MATHEMATICAL METHODS OF PHYSICS	3
PHYS 3300	INTRODUCTION TO BIOMEDICAL PHYSICS	3
General Education Course or Elective		3
General Education Course or Elective		2
Attend a career fair for informational and networking purposes. Update your resume and LinkedIn profile with new experiences. Investigate and apply for summer internships, research, or study abroad programs. Make advising appointment for summer and fall: February – March.		
	Credits	**15**

Junior

Fall		
PHYS 3504	EXPERIMENTAL PHYSICS I	1
PHYS 3600	THERMODYNAMICS AND STATISTICAL PHYSICS	3
PHYS 3504	EXPERIMENTAL PHYSICS I	1
PHYS 4500 or PHYS 4550	BIOLOGICAL PHYSICS or PHYSICS IN MEDICINE	3
Elective or Cognate Course		3
Elective or Cognate Course		3
Elective		2
Apply for a paid internship or research assistantship. Attend a mock interview workshop or use online interview tools with Career Services. Start researching and visiting graduate programs or professional schools. Visit Career Center, continue updating resume. Make advising appointment for spring: Sept-Oct.		
	Credits	**16**
Spring		
PHYS 3450	CLASSICAL MECHANICS	3
PHYS 3524	EXPERIMENTAL MATERIALS SCIENCE	1
PHYS 3800	OPTICS	3
Elective/Cognate Course		3
Elective		3
Elective		2
Request letters of recommendation from faculty for jobs or grad school. Attend the All-Majors Career Fair with a plan to network. Meet with your advisor or submit for a graduation check-in to review remaining degree requirements. Make advising appointment for summer and fall: February – March.		
	Credits	**15**

Senior

Fall		
PHYS 3750	ELECTRICITY AND MAGNETISM I	3
PHYS 4550 or PHYS 4500	PHYSICS IN MEDICINE or BIOLOGICAL PHYSICS	3
Elective or Cognate Course		3
Elective or Cognate Course		3
Elective		2
Check in with Career Center for networking tips. Finalize graduate school applications or job search strategy. Attend a career fair and start applying for full-time jobs. Prepare for interviews and salary negotiations with Career Services. Make advising appointment for spring: Sept. - Oct.		
	Credits	**14**
Spring		
PHYS 4950 or PHYS 4960	PROBLEMS IN PHYSICS (*) or PROBLEMS IN PHYSICS	1
Elective or Cognate Course		3
Elective		3
Elective		3
Elective		3
Elective		2

Complete your final advising check before graduation. Polish your resume, cover letters, and LinkedIn profile. Stay connected by joining alumni networks and professional organizations. Apply for graduation via MavLink.	
Credits	**15**
Total Credits	**120**

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).

College Breadth: Students should plan on using at least 15 hours of "Electives" to fulfill Option 1, 2, or 3, of the College of Arts and Sciences' breadth requirement.

Upper Level Credits: Students need 27 upper level credits throughout the degree with at least 18 upper level credits within the major. Electives may need to be selected at the 3000-4000 level to reach these minimums.

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, World 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

Note: This plan provides a general guide, but your specific courses, experiences, and career goals may differ. Work with your academic advisor to ensure you're meeting degree requirements and consult with career advisors to explore internships, research opportunities, and post-graduation plans. Regular check-ins will help you stay on track and make the most of your time at UNO!