

PHYSICS, BACHELOR OF ARTS

Offered by Department of Physics and Astronom (<http://catalog.unk.edu/undergraduate/departments-programs/physics-astronomy/>)y

Code	Title	Credit Hours
General Education		
<i>Foundational Requirements (LOPERs 1-4)</i>		14
Including:		
LOPER 4: Mathematics, Statistics, and Quantitative Reasoning		
MATH 115	Calculus I with Analytic Geometry ¹	
<i>Broad Knowledge Requirements (LOPERs 5-8)</i>		11
Take any one course in LOPER 5, LOPER 6, or LOPER 7 that satisfies a Dispositional Requirement (LOPER 9 or LOPER 10) and a Broad Knowledge Requirement. The courses that meet these criteria are listed at https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional (https://catalog.unk.edu/undergraduate/general-studies/courses-satisfy-broad-knowledge-dispositional/). See advisor for assistance.		
Including		
PHYS 275	General Physics I (Calculus)	
PHYS 275L	General Physics I (Calculus) Laboratory	
<i>Dispositional Requirements (LOPERs 9-10) ²</i>		6
<i>Wellness (LOPER 11) Optional</i>		0
BA Language requirement		
Complete all required courses ³		6
Program Specified Requirements		
PHYS 276 General Physics II (Calculus)		5
PHYS 276L General Physics II (Calculus) Laboratory		
Major Option		
Complete all required courses		30-36
Minor or 2nd Major		
Complete all required courses ⁴		24
Unrestricted electives		
Needed to reach 120 credit hour minimum		18-24
Total Credit Hours		120

Major Option

Code	Title	Credit Hours
Physics Core Requirements		
PHYS 123	Freshman Physics Seminar	3
PHYS 346	Modern Physics I	4
Physics Emphasis Requirements		
Select one of the following:		23-29
General Physics Emphasis		
Physical Science Emphasis		
Total Credit Hours		30-36

General Physics Emphasis

Code	Title	Credit Hours
General Physics Emphasis Requirements		
<i>Physics Math Requirements</i>		
MATH 202	Calculus II with Analytic Geometry	5
MATH 260	Calculus III	5
MATH 305	Differential Equations	3
<i>Required Physics Skill Courses</i>		
PHYS 410	Mathematical Techniques in Physics I	3
PHYS 420	Advanced Physics Laboratory	3
<i>Physics Electives</i>		
Select 10 credit hours of the following:		10
PHYS 350	Astrophysics I	
PHYS 351	Astrophysics II	
PHYS 360	Computational Methods in Physics and Astronomy	
PHYS 361	Astronomy Methods II	
PHYS 402	Analytic Mechanics	
PHYS 407	Electricity & Magnetism	
PHYS 419	Quantum Mechanics	
PHYS 430	Optics	
PHYS 435	Solid State Physics	
PHYS 440	Thermodynamics and Statistical Mechanics	
PHYS 495	Research in Physics	
Total Credit Hours		29

Physical Science Emphasis

Code	Title	Credit Hours
Physical Science Emphasis Requirements		
<i>Chemistry Requirement</i>		
CHEM 160	General Chemistry	3
CHEM 160L	General Chemistry Laboratory	1
CHEM 161	General Chemistry	3
CHEM 161L	General Chemistry Laboratory	1
<i>Physical Science Electives</i>		
Select 15 credit hours of the following: ⁵		15
CHEM 200-CHEM 499L		
PHYS 200-PHYS 499		
Total Credit Hours		23

1

Students without sufficient preparation will also need to take the following courses, increasing the total credit hours needed:

- MATH 102
- MATH 103

2

Designated courses with the appropriate content may be approved to satisfy one of the Broad Knowledge requirements plus LOPER 9 or Broad Knowledge plus LOPER 10. Courses may be approved to satisfy LOPER 9 or LOPER 10 alone. (Courses satisfying LOPER 9 or LOPER 10 alone must be 3 credit hours.) Students applying this option will need to take additional hours in other categories to meet the required General Education hours.

3

For specific language requirements see #2 of Bachelor of Arts Degree requirements (<http://catalog.unk.edu/undergraduate/academics/degrees/ba/>).

4

A minor or second major is required for a complete degree program. The number of required electives needed to reach 120 total credit hours overall will depend upon the specific program chosen.

5

Electives must include one advanced course (300-400 level) in BOTH Chemistry AND Physics.

This document represents a sample 4-year plan for degree completion with this major. Actual course selection and sequence may vary and should be discussed individually with your academic advisor. Advisors can also help you plan other experiences to enrich your undergraduate education such as internships, education abroad, undergraduate research, learning communities, and service learning and community-based learning.

Code	Title	Credit Hours
Semester 1		
LOPER 1: First-year Seminar		3
PHYS 123	Freshman Physics Seminar	3
MATH 115	Calculus I with Analytic Geometry	5
LOPER 2: Writing Skills		3
Total Credit Hours		14

Code	Title	Credit Hours
Semester 2		
PHYS 275 & 275L	General Physics I (Calculus) and General Physics I (Calculus) Laboratory	5
MATH 202	Calculus II with Analytic Geometry	5
LOPER 3: Oral Communication Skills		3
LOPER 5: Visual or Performing Arts		3
Total Credit Hours		16

Code	Title	Credit Hours
Semester 3		
PHYS 276 & 276L	General Physics II (Calculus) and General Physics II (Calculus) Laboratory	5
MATH 260	Calculus III	5
Minor or 2nd Major Course		3

Minor or 2nd Major Course	3
Total Credit Hours	16

Code	Title	Credit Hours
Semester 4		
PHYS 346	Modern Physics I	4
PHYS 410	Mathematical Techniques in Physics I	3
MATH 305	Differential Equations	3
LOPER 6: Humanities		3
LOPER 7: Social Science		3
Total Credit Hours		16

Code	Title	Credit Hours
Semester 5		
Major Elective		4
BA Requirement		3
LOPER 9: Civic Competency and Engagement		3
LOPER 10: Respect for Human Diversity		3
Total Credit Hours		13

Code	Title	Credit Hours
Semester 6		
PHYS 420	Advanced Physics Laboratory	3
BA Requirement		3
Minor or 2nd Major Course		3
Minor or 2nd Major Course		3
Unrestricted Elective		3
Total Credit Hours		15

Code	Title	Credit Hours
Semester 7		
Major Elective		3
Minor or 2nd Major Course		3
Minor or 2nd Major Course		3
Unrestricted Elective		3
Unrestricted Elective		3
Total Credit Hours		15

Code	Title	Credit Hours
Semester 8		
Major Elective		3
Minor or 2nd Major Course		3
Minor or 2nd Major Course		3
Unrestricted Elective		3
Unrestricted Elective		3
Total Credit Hours		15

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Code	Title	Credit Hours
Semester 1		
LOPER 1: First-year Seminar		3
PHYS 123	Freshman Physics Seminar	3
MATH 115	Calculus I with Analytic Geometry	5
LOPER 2: Writing Skills		3
Minor or 2nd Major Course		3
Total Credit Hours		17

Code	Title	Credit Hours
Semester 2		
PHYS 275 & 275L	General Physics I (Calculus) and General Physics I (Calculus) Laboratory	5
LOPER 3: Oral Communication Skills		3
Minor or 2nd Major Course		3
LOPER 5: Visual or Performing Arts		3
Total Credit Hours		14

Code	Title	Credit Hours
Semester 3		
PHYS 276 & 276L	General Physics II (Calculus) and General Physics II (Calculus) Laboratory	5
CHEM 160 & 160L	General Chemistry and General Chemistry Laboratory	4
Physical Science Elective		3
Unrestricted Elective		3
Total Credit Hours		15

Code	Title	Credit Hours
Semester 4		
BA Requirement		3
PHYS 346	Modern Physics I	4
CHEM 161 & 161L	General Chemistry and General Chemistry Laboratory	4
Physical Science Elective		3
Total Credit Hours		14

Code	Title	Credit Hours
Semester 5		
Physical Science Elective		3
Physical Science Elective		3
BA Requirement		3
LOPER 6: Humanities		3

LOPER 7: Social Science	3	
Total Credit Hours		15

Code	Title	Credit Hours
Semester 6		
LOPER 10: Respect for Human Diversity		3
Minor or 2nd Major Course		3
Unrestricted Elective		3
Unrestricted Elective		3
Unrestricted Elective		3
Total Credit Hours		15

Code	Title	Credit Hours
Semester 7		
Minor or 2nd Major Course		3
Minor or 2nd Major Course		3
Minor or 2nd Major Course		3
Minor or 2nd Major Course		3
Minor or 2nd Major Course		3
Total Credit Hours		15

Code	Title	Credit Hours
Semester 8		
Physical Science Elective		3
Unrestricted Elective		3
Unrestricted Elective		3
Unrestricted Elective		3
Unrestricted Elective		3
Total Credit Hours		15