

PHYSICS: APPLIED PHYSICS, BS

Degree Requirements

Requirements for Students Matriculating in or before Academic Year 2026-2027. Learn more about University Academic Regulation 3.1 (<https://catalog.okstate.edu/university-academic-regulations/#matriculation>).

Minimum Overall Grade Point Average: 2.00

Total Hours: 120

Code	Title	Hours
General Education Requirements		
<i>English Composition</i>		
See Academic Regulation 3.5 (https://catalog.okstate.edu/university-academic-regulations/#english-composition)		
ENGL 1113	Composition I	3
or ENGL 1313	Critical Analysis and Writing I	
Select one of the following:		3
ENGL 1213	Composition II	
ENGL 1413	Critical Analysis and Writing II	
ENGL 3323	Technical Writing	
<i>American History & Government</i>		
HIST 1103	Survey of American History	3
or HIST 1483	American History to 1865 (H)	
or HIST 1493	American History Since 1865 (DH)	
POLS 1113	American Government	3
<i>Quantitative Thought & Logical Reasoning (Q)</i>		
MATH 2144	Calculus I (Q) ¹	4
MATH 2153	Calculus II (Q) ¹	3
<i>Understanding Humanities-Human Heritage & Cultures (H)</i>		
Courses designated (H)		6
<i>Reasoning in the Natural Sciences (N)</i>		
Must include one Laboratory-Based Inquiry (L) course		
CHEM 1314	Chemistry I (LN) ¹	4
or CHEM 1414	General Chemistry for Engineers (LN)	
Course designated (N)		2
<i>Exploring Society & Human Behavior (S)</i>		
Courses designated (S)		3
<i>Diversity (D)</i>		
Courses designated (D)		3
<i>Global Cultural Competency (G)</i>		
Courses designated (G)		3
<i>Additional General Education</i>		
Additional general education credit hours may be required to meet the total 40-hour minimum of general education credit if courses carry more than one general education designation and can be used to meet multiple general education designation hour requirements above.		
Courses designated (Q), (H), (N), (S), (D), (G), or (F).		0
Hours Subtotal		40
College/Departmental Requirements		

UNIV 1111	First Year Seminar (or other approved first year seminar course)	1
<i>Arts & Humanities</i>		
See note 2.a.		3
<i>Natural & Mathematical Sciences</i>		
PHYS 2014	University Physics I (LN)	4
5 hours of Math and/or Science		5
<i>Foreign Language</i>		
0-6 hours. See note 3.		
<i>Upper-Division General Education</i>		
Select 6 hours outside major department. See note 2.c.		
Hours Subtotal		13
Major Requirements		
Minimum GPA 2.00 with a minimum grade of "C" in each course		
<i>Core Requirements</i>		
PHYS 2114	University Physics II (LN)	4
PHYS 2203	University Physics III ²	3
or ENSC 2213	Thermodynamics	
PHYS 3013	Mechanics I	3
or ENSC 2123	Elementary Dynamics	
PHYS 3323	Modern Laboratory Methods I	3
or MAE 3113	Measurements and Instrumentation	
or ECEN 2714	Fundamentals of Electric Circuits	
or BAE 3023	Instruments and Controls	
PHYS 3513	Mathematical Physics	3
or MAE 3013	Engineering Analysis and Methods I	
PHYS 3623	Modern Laboratory Methods II	3
or MAE 3724	Dynamic Systems Analysis and Introduction to Control	
or ECEN 3314	Electronic Devices and Applications	
or ECEN 4013	Design of Engineering Systems	
or BAE 3033	Engineering Properties of Biological Materials	
PHYS 3713	Fundamentals of Modern Physics	3
or CHEM 3433	Physical Chemistry I	
PHYS 4113	Electricity and Magnetism	3
or ECEN 3623	Applied Fields and Waves II	
MATH 2163	Calculus III	3
MATH 2233	Differential Equations	3
or MATH 3263	Linear Algebra and Differential Equations	
<i>Additional Requirements</i>		
Select 9 upper-division hours in in any one academic department ³		9
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ASTR 3023	Astrophysics	
ASTR 4010	Observatory Research	
PHYS 3113	Thermal Physics	
or MAE 3223	Thermodynamics II	
or CHE 3473	Chemical Engineering Thermodynamics	
PHYS 4003	Computer Simulation Methods in Physics	
or MAE 3403	Computer Methods in Analysis and Design	
or CHE 4493	Introduction to Molecular Modeling and Simulation	
or CHE 4753	Introduction to Applied Numerical Computing for Scientists and Engineers	

or CHE 4773	Introduction to Computational Fluid-Particle Dynamics
or MATH 3583	Introduction to Mathematical Modeling
PHYS 3313	Introduction to Semiconductor Device Physics
or ECEN 3903	Introduction to Semiconductor Devices
PHYS 3213	Optics
ENSC 3313	Materials Science
PHYS 4263	Introduction to Solid State Physics
PHYS 4503	Quantum Information
PHYS 4513	Introductory Quantum Mechanics
PHYS 3553	Foundations of Cancer
CHE 3333	Introduction to Transport Phenomena
CHEM 3553	Physical Chemistry II
CHEM 4123	Biomolecular Chemistry and Function
CHE 4783	Nanomaterial Synthesis and Characterization
Hours Subtotal	49
Electives	
Select 18 hours ³	18
May need to include 6 hours of a foreign language (see note 3)	
May need to include 6 hours upper-division general education outside major department (see note 2.c.).	
MATH 1513 and MATH 1813 required for students who do not place directly into MATH 2144.	
Suggested electives: ASTR, CS, and MATH	
Hours Subtotal	18
Total Hours	120

- Degrees that follow this plan must be completed by the end of Summer 2032.

¹ College and Departmental Requirements that may be used to meet General Education Requirements.

² If taking ENSC 2213 instead of PHYS 2203, must also take ECEN 3613 Applied Fields and Waves I.

³ With approval from the advisor and department head, a maximum of 30 hours from an accredited doctoral health program may be used for these 18 hours and up to 12 hours of electives.

Other Requirements

- See the College of Arts and Sciences Requirements.
- **Upper-Division Credit:** Total hours must include at least 40 hours in courses numbered 3000 or above.

Additional State/OSU Requirements

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.