

PHYSICS MAJOR

Requirements

For a major in physics, students complete the following:

Code	Title	Credits
CHEM 1171 & CHEM 1172	General Chemistry I and General Chemistry II	6
CHEM 1171L & CHEM 1172L	General Chemistry I Lab and General Chemistry II Lab	2
PHYS 1171 & PHYS 1172	General Physics I and General Physics II	6
PHYS 1171L & PHYS 1172L	General Physics I Lab and General Physics II Lab	2
PHYS 2226	Classical Mechanics	3
PHYS 2285	Modern Physics	3
PHYS 2285L	Modern Experimental Methods Lab	2
PHYS 3215	Computational Physics	3
PHYS 3222L	Modern Optics Lab	1
PHYS 3222	Modern Optics	3
PHYS 3241	Thermal and Statistical Physics	3
PHYS 3271	Electricity and Magnetism	3
PHYS 3386	Quantum Physics	3
PHYS 4998 & PHYS 4999	Theoretical/Experimental Capstone and Theoretical/Experimental Capstone	4
Select three Physics electives at the 2000 level or higher		9
Select five Math classes approved for math, science, or engineering students		18
Total Credits		71

Provision for Physics Advanced Placement Exam C

Students who have passed the AP Physics I exam with a score of 4 or 5 will receive credit for PHYS 1145. Students who pass the AP Physics C: Mechanics exam with a score of 4 or 5 need not take PHYS 1171 and may begin with PHYS 1172 in the spring. Students who have passed both AP Physics C: Mechanics and AP Physics C: Electricity and Magnetism exams with scores of 4 or 5 may advance directly to the sophomore physics course, PHYS 2285 Modern Physics, without taking the PHYS 1171 and PHYS 1172 prerequisites. Note: Per the general Advanced Placement policy of the University, only 4 credits are awarded toward graduation for having passed the two AP Physics C exams. Students who do not take PHYS 1171 and PHYS 1172 under this provision will need to take an additional elective in physics in order to complete the required number of credits for the major in physics.

Physics Major with a Minor in Educational Studies and the 5-Year Teacher Education Program

Physics majors who elect a minor in Educational Studies and who have been admitted to the Five-Year Integrated Bachelor and Master of Arts Degree and Teacher Certification program may count EDUC 5462 Science Methods as their three-credit physics independent study project.

Physics majors with an Education Minor should consult with Dr. Angela Biselli, education advisor, and Dr. Ryan Colwell, director of the Five-Year Integrated Bachelor and Master of Arts Degree and Teacher Certification programs.

Magis Core Curriculum

Beginning with the Class of 2023, all undergraduate students will be required to complete the Magis Core Curriculum. Please refer to the Curricula section of this undergraduate catalog for a detailed explanation of the Magis Core.

Plan of Study

Course	Title	Credits
First Year		
Fall		
MATH 1141	Calculus I for Chemistry, Engineering, and Physics Majors	4
PHYS 1171	General Physics I	3
PHYS 1171L	General Physics I Lab	1
Core Curriculum		6
Free Elective		3
Credits		17
Spring		
MATH 1142	Calculus II for Chemistry, Engineering, and Physics Majors	4
PHYS 1172	General Physics II	3
PHYS 1172L	General Physics II Lab	1
Core Curriculum		6
Free Elective		3
Credits		17
Second Year		
Fall		
MATH 2243	Calculus III for Chemistry, Engineering, and Physics Majors	4
PHYS 2285	Modern Physics	3
Core Curriculum		6
Free Elective		3
Credits		16
Spring		
MATH 2251	Ordinary Differential Equations	3
PHYS 2226	Classical Mechanics	3
PHYS 2285L	Modern Experimental Methods Lab	2
PHYS 3215	Computational Physics	3
Core Curriculum		3
Physics Elective		3
Credits		17
Third Year		
Fall		
CHEM 1171	General Chemistry I	3
CHEM 1171L	General Chemistry I Lab	1
PHYS 3241	Thermal and Statistical Physics	3
PHYS 3271	Electricity and Magnetism	3

Core Curriculum		3
Free Elective		3
	Credits	16
Spring		
CHEM 1172	General Chemistry II	3
CHEM 1172L	General Chemistry II Lab	1
MATH 3332	Partial Differential Equations	3
PHYS 3222	Modern Optics	3
PHYS 3222L	Modern Optics Lab	1
Physics Elective		3
Free Elective		3
	Credits	17
Fourth Year		
Fall		
PHYS 3386	Quantum Physics	3
PHYS 4998	Theoretical/Experimental Capstone	3
Core Curriculum		3
Free Elective		6
	Credits	15
Spring		
PHYS 4999	Theoretical/Experimental Capstone	1
Physics Elective		3
Core Curriculum		6
Free Elective		6
	Credits	16
	Total Credits	131