PHYSICS, B.A.

Requirements

Requires at least 25 hours in physics and must include the following courses:

Code	Title	Hours
Required Major Courses		
PHY 123	General Physics I - Studio Format	4
or PHY 113	General Physics I	
or PHY 111	Mechanics Waves and Heat	
PHY 124	General Physics II - Studio Format	4
or PHY 114	General Physics II	
PHY 215	Elementary Modern Physics	3
PHY 230	Electronics ***	3-4
or EGR 311	Control Systems and Instrumentation	
PHY 262	Mechanics ***	3
PHY 265	Intermediate Laboratory I	1
PHY 266	Intermediate Laboratory II ***	1
Select 6 hours of any other 300-level courses in the department *		6
Co-Requirement		
MTH 113	Multivariable Calculus	4
MTH 205	Introduction to Linear Algebra and Differential Equations	4
or MTH 251	Ordinary Differential Equations	

* *Except PHY 381. Students may substitute CHM 341 for PHY 341.*

** *Students must earn a minimum C grade in MTH 113, MTH 205 or MTH 251.*

*** *Students may substitute* EGR 211 *for the combination of* PHY 262 *and* PHY 266*. Substitutions for PHY 230, PHY 266 and PHY 262 will count toward the required hours in physics. Students who make this substitution do not need to take PHY 262 or PHY 266 to fulfill requirements for the major.*

MTH 251 can substitute for MTH 205 for the MTH requirement for the BA degree, but not for specific course pre- or co-requirements, unless already specified in the course description. Students are strongly encouraged to take either CSC 102 or CSC 111; early in their curriculum if possible. CSC 111 would be appropriate for majors who are interested in further study in computer science, such as through a double major or minor in Computer Science. Otherwise, we encourage our majors to take CSC 102.

No student may be a candidate for a degree with a major in physics with a grade less than C in General Physics without special permission of the department. Students must achieve a minimum GPA of 2.0 in physics courses for graduation. In addition, all major students must complete a senior survey and participate in a senior focus group held during their senior year

Concentrations

Physics Concentrations

Students who wish to focus their coursework in a specific subarea of physics may pursue a Physics Concentration. Pursuit of a Physics Concentration does not change the degree, which may be a Bachelor of Arts in Physics, a Bachelor of Science in Physics, or a Bachelor of Science in Biophysics. A concentration requires 3 courses, although some of the courses selected may have additional prerequisite courses. These courses may also count towards the requirements for their BA or BS degree. A course, however, can only be counted toward one concentration. A minimum overall GPA of 2.0 must be earned on all Wake Forest courses taken to complete the concentration. The requirements for the concentration are those that are in effect at the time of the declaration of the concentration.

Quantum Information Sciences Concentration

Code	Title	Hours
PHY 343	Quantum Physics	3
Select two of the following options:		
PHY 345	Introduction to Quantum Computing	
PHY 352	Physical Optics and Optical Design	
PHY 354	Introduction to Solid State Physics	

Computational Physics

Code	Title	Hours
CSC 102	Problem Solving with Python *	3
Select two of the following options:		
PHY 320	Physics of Biological Macromolecules	
PHY 335	Computational Physics	
PHY 345	Introduction to Quantum Computing	

* CSC 111 or CSC 112 may substitute for CSC 102 with departmental permission.

Honors

Highly qualified majors are invited by the department to apply for admission to the honors program in physics through the major advisor. To be graduated with the designation “Honors in Physics,” students must:

- pass PHY 381
- write a paper on the results of the research in that course
- pass an oral exam on the research and related topics given by a committee of three physics faculty members
- obtain a GPA of at least 3.3 in physics and 3.0 overall