

Required courses for physics majors

Emory University Physics Department

		BS Physics	BS Applied Physics	BS Physics & Astronomy	BA Physics	BA Physics & Astronomy
<i>PHYSICS COURSES</i> (semester)						
Phys 116: Introductory Astronomy				optional		yes
Phys 141/142: Introductory Physics		<i>see note below table if you have taken or are taking Phys 141 / 142</i>				
Phys 151: General Physics I with laboratory	F	yes	yes	yes	yes	yes
Phys 152: General Physics II with laboratory	S	yes	yes	yes	yes	yes
Phys 253: Modern Physics, with laboratory	F	yes	yes	yes	yes	yes
Phys 234: Digital Electronics, with laboratory	F		yes			
Phys 311: Astrophysics I, with laboratory	S			yes		(either Phys 311 or 312)
Phys 312: Astrophysics II, with laboratory	S			yes		
Phys 320: Math Methods for Scientists	F	yes	yes	yes		
Phys 361: Analytical Mechanics I	F	yes	yes	yes	yes	yes
Phys 365: Electromagnetic Fields I	S	yes	yes	yes	yes	yes
Phys 421: Thermal Physics	F	yes	yes	yes		
Phys 432: Optics, with laboratory	S	yes	yes	yes		
Phys 436: Computational Physics	S		yes			
Phys 444W: Advanced Undergraduate Lab	F	yes	yes			
Phys 461: Introduction to Quantum Mechanics I	S	yes	yes	yes		
<i>REQUIRED PHYSICS ELECTIVES:</i>						
must be at 200 level or higher		1	none	1	3	1
must be at 300 level or higher		1	none	none	none	none
<i>MATH COURSES:</i>						
Math 111: Calculus I		yes	yes	yes	yes	yes
Math 112: Calculus II		yes	yes	yes	yes	yes
Math 211: Multivariable Calculus		yes	yes	yes	yes	yes
Math 212: Differential Equations		yes	yes	yes		

NOTES:

- Students who have taken (or are taking) PHYS 141 or 142 can also major in physics, but they should meet with the Director of Undergraduate Studies to discuss the possibilities.
- For all majors, we recommend taking CS 170: Introduction to Computer Science. PHYS 499R (Undergraduate Research) is also recommended; see the Director of Undergraduate Studies for advice on how to get involved with research.
- All physics courses are offered only once a year – either in the Fall or Spring semester – with these exceptions: PHYS 115 and 116 are offered both Fall and Spring semesters. PHYS 311 and 312 are offered in the Spring in alternate years and can be taken in any order.
- Math 212 and Math 211 can be taken in any order.
- Only one required elective may be fulfilled by 397R, 495R, or 499R, and only if at least three credits are earned for a work on a single project.

Interested in physics graduate school?

- Consider taking PHYS 506A to get a 2nd semester of quantum mechanics.
- Consider getting involved in departmental research as early as possible.

BS in Physics and Astronomy:

- Phys 116 is a descriptive course intended for non-science majors. Although it does not count toward the major, it is recommended for BS Physics & Astronomy students who have no previous background in astronomical observations.

Suggested math electives

- Several math classes are potentially useful to physics majors: Math 221 (Linear Algebra), Math 315 (Numerical Analysis), and Math 361 (Probability & Statistics I). Math 315 and Phys 436 are similar; you should talk to the course instructors to see what topics they cover in a given semester. For more elective suggestions, talk with the Director of Undergraduate Studies.