<table>
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<th>Year</th>
<th>FALL</th>
<th>WINTER</th>
<th>SPRING</th>
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| 1    | (5) PHYS 161 Physics w/Calculus I w/lab  
(M124 or M134 or M138 or concurrent) | (5) PHYS 162 Physics w/Calculus II w/lab  
(P161, M124 or M134 and M125 or M135 or concurrent,  
or M138) | (5) PHYS 163 Physics w/Calculus III w/lab  
(P162, M124 and M125, or M134 and M135 or M138) |
|      | (5) MATH 124 Calculus I | (5) MATH 125 Calculus II | (5) MATH 224 Multivariate Calculus and  
Geometry I |
| 2    | (4) PHYS 226 Physics w/Calculus IV w/lab  
(P163, M124 and M125, or M134 and M135, or M138) | (3) PHYS 224 Modern Physics I  
(P163, P226, M204) | (3) PHYS 225 Modern Physics II  
(P224, M331) |
|      | (4) CSCI 140 C++ Programming  
OR  
(4) CSCI 141 Programming I w/Lab | (3) PHYS 326 Tools & Data Analysis  
(P163, M224, M204, CS140 or 141) | (4) PHYS 322 Fundamentals of Electronics  
w/lab  
(P163, P326, CS140 or 141) |
|      | (4) MATH 204 Elementary Lin Algebra  
(M125 or M135, M224 recommended) | (4) MATH 331 Ordinary Differential  
Equations  
(M204, M224 recommended or concurrent) | (4) MATH 304 Linear Algebra  
(M204, M224) |
| 3    | (4) PHYS 363 Classical Mechanics  
(P163, P326, P225 or GEOL 352, M304 and M331,  
Phase II Majors) | (4) PHYS 368 Electromagnetism I  
(P163, M224, M303 or M304 and M331) | (3) PHYS 339 Optics  
(P163, P368) |
|      | (3) ASTR 315 Solar System  
(P114-116 or P161-163) | (3) PHYS 475 Solids & Materials I  
(P225) | (3) PHYS 369 Electromagnetism II  
(P368, M331) |
|      | (3) PHYS 485 Mathematical Physics  
(P363 or concurrent, M224, M304 and M331) | (3) PHYS 391 Junior Lab  
(P225, P322, P326) | (3) **PHYS 476 Solids and Materials II (P475)  
(3) **ASTR 320 Cosmology (A316) |
| 4    | (4) PHYS 335 Statistical & Thermal Physics  
(P225, P226, M224, Phase II Majors) | (3) PHYS 419 Professional Writing for  
Physicists (WP3)  
(P391, PHYS 455 or concurrent, or GEOL 352) | (3) PHYS 486 Computational Physics  
(P326, P363, P369, CSCI140 or 141) |
|      | (3) PHYS 455 Quantum Mechanics I  
(P225, P363, P369, M304 and M331) | (3) **PHYS 456 Quantum Mechanics II  
(P455) | (3) **PHYS 444 Special Topics  
(P363, P368) |

Students may postpone PHYS 161 until winter quarter in order to complete the pre-requisite for Calculus I (MATH 124) before starting the physics plan of study. Note that PHYS 162 will also be delayed such that PHYS 162 and PHYS 163 will need to be taken concurrently in the spring of the freshman year.

**Choose at least one of the following department electives:**

- (3) ASTR 316: Stars & Galaxies
- (3) PHYS 444: Special Topics
- (3) ASTR 320: Cosmology
- (3) PHYS 476: Solids II
- (ASTR 315 required, 316 and 320 complete the Astronomy Minor)
- (3) Second quarter of PHYS 391: Junior Lab
Admission and Declaration Process

Admission to the Physics BS is a two-step process. Students are classified as Phase I majors until they have completed PHYS 161, 162, 163, 224, 225, 226; and MATH 124, 125, 224; and MATH 204, 304 and 331. Admission to Phase II is based on students’ academic performance in the Phase I courses. Students with a cumulative grade point average of 3.0 or higher in the Phase I courses will be given preferential admission to Phase II, while students with a cumulative grade point average below 3.0 in the Phase I courses will be considered for admission on a case by case basis. Note, however, that neither completion of the prerequisites nor attainment of any specific GPA guarantees admission to Phase II.

Students may obtain Phase I major status by contacting the Physics/Astronomy department, Communications Facility 385, and completing the major declaration form. At this time students will be assigned an academic adviser from the physics faculty.

The application to Phase II includes an application form and a transcript, and should be submitted to the department main office by the end of the 5th week of spring quarter during the sophomore year of the major program. Phase II major status will be granted by the beginning of fall quarter of the junior year.

Independent Research

Students may take Independent Research PHYS 291/491, with variable credit from 1-3, with permission of a faculty. This course provides students the opportunity to perform original research under faculty supervision. It is advised that interested students contact potential faculty supervisors during their junior year.

Astronomy Minor - 24-28 credits

PHYS 114, 115 and 116 or PHYS 161, 162, 163 and ASTR 315, 316 and 320.

Math Minor - 35 credits

The math courses required in the physics major meet most of the requirements for the Math Minor. After completion of MATH 204, 304 and 331 you will need an additional 4 credits of approved math electives.

Recommended math courses that are of considerable value to physics majors are MATH 225 Multivariate Calculus and Geometry, MATH 226 Limits and Infinite Series, MATH 430 Fourier Series and Partial Differential Equations, MATH 432 Systems of Differential Equations, and MATH 438 Introduction to Complex Variables.

Materials Science Minor – 39-42 credits

Physics Majors completing the Materials Science Minor may substitute one year of Chemistry for ASTR 315 and the department elective.

For advising and to declare the minor contact: AMSEC - Advanced Materials Science and Engineering Center, ES 131, 650-6522