

PHYSICS - BA

Program Requirements

First Year

| | | Semester Credit Hours |
|---|--|-----------------------------|
| Fall | | |
| ENGL 104 or ENGL 103 | Composition and Rhetoric or Introduction to Rhetoric and Composition | 3 |
| MATH 171 | Calculus I ¹ | 4 |
| PHYS 101 | Freshman Physics Orientation ¹ | 1 |
| PHYS 150 | Introduction for Programming for Physics ¹ | 3 |
| American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) ² | | 3 |

Semester Credit Hours 14

Spring

| | | |
|---|---|---|
| ASTR 102 | Observational Astronomy | 1 |
| MATH 172 | Calculus II ¹ | 4 |
| PHYS 206 & PHYS 226 | Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences ¹ | 4 |
| American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) ² | | 3 |
| Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) ² | | 3 |

Semester Credit Hours 15

Second Year

| | | Semester Credit Hours |
|------------------------|---|-----------------------------|
| Fall | | |
| MATH 221 | Several Variable Calculus ¹ | 4 |
| MATH 308 | Differential Equations ¹ | 3 |
| PHYS 207 & PHYS 227 | Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences ¹ | 4 |
| PHYS 221 | Optics and Thermal Physics ¹ | 3 |

Semester Credit Hours 14

Spring

| | | |
|-------------------------------|---|---|
| PHYS 225 | Electronic Circuits and Applications | 3 |
| PHYS 309 | Modern Physics ¹ | 3 |
| PHYS 331 | Theoretical Methods for Physicists I ¹ | 3 |
| General elective ³ | | 7 |

Semester Credit Hours 16

Third Year

| | | Semester Credit Hours |
|-------------|---------------------------------------|-----------------------------|
| Fall | | |
| PHYS 302 | Advanced Mechanics I | 3 |
| PHYS 304 | Advanced Electricity and Magnetism I | 3 |
| PHYS 332 | Theoretical Methods for Physicists II | 3 |
| POLS 206 | American National Government | 3 |

Social and behavioral science (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences>) ² 3

Semester Credit Hours 15

Spring

| | | |
|--|--------------------------------------|---|
| PHYS 327 | Experimental Physics I ⁴ | 2 |
| PHYS 328 | Experimental Physics II ⁴ | 1 |
| PHYS 412 | Quantum Mechanics I | 3 |
| POLS 207 | State and Local Government | 3 |
| Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication) ⁵ | | 3 |
| General elective ³ | | 3 |

Semester Credit Hours 15

Fourth Year

Fall

| | | |
|--|--|----|
| Science or technical elective ⁶ | | 3 |
| General electives ³ | | 13 |

Semester Credit Hours 16

Spring

| | | |
|--|--|---|
| Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts) ² | | 3 |
| Physics elective ⁷ | | 3 |
| General electives ³ | | 9 |

Semester Credit Hours 15

Total Semester Credit Hours 120

¹ A physics major must complete the foundation courses (PHYS 101, PHYS 150, ASTR 102/PHYS 206/PHYS 226, PHYS 207/PHYS 227, PHYS 221, PHYS 309, PHYS 331, MATH 171, MATH 172, MATH 221, MATH 308) with a grade of C or better and have a 2.0 cumulative GPA before taking non-foundation upper-level physics courses.

² Any course in this category from the approved University Core Curriculum list of courses.

³ A minor is required and, along with other free electives, should be chosen in consultation with the student's advisor. Three hours must be in the area of International and Cultural Diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/>), and three hours must be in the area of Cultural Discourse (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/>). These may be in addition to other University Core Curriculum courses, or if a course in this category satisfies another area of the Core, it can be used to meet both requirements. Electives may be selected from any 100-499 course not used elsewhere, except ENGL 103; MATH 100-148, MATH 165-166, MATH 365, MATH 366 (<http://catalog.tamu.edu/undergraduate/course-descriptions/math/>); PHYS 201, PHYS 202.

⁴ PHYS 327 is an approved W course. PHYS 328 is an approved C course.

⁵ Any approved Communication course, except PERF 407.

⁶ Any upper-division course in geo/life/physical sciences, mathematics/statistics, or engineering (except 485/491).

⁷ Select from ASTR 314, PHYS 401, PHYS 414, PHYS 416, PHYS 489, MATH 460, or any graduate offering in PHYS or ASTR.