# Physics - BA

## Program Requirements

### First Year

#### Fall

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

### Spring

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

### Second Year

#### Fall

- **MATH 221**  
  Several Variable Calculus 1 4
- **MATH 308**  
  Differential Equations 1 3
- **PHYS 207**  
  Electricity and Magnetism for Engineering and Science and Electricity and Magnetism Laboratory for the Sciences 1
- **PHYS 221**  
  Optics and Thermal Physics 1 3

### 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

### Third Year

#### 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

### Fourth Year

#### 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) 3
- **General elective** 3 3

### Total Semester Credit Hours

120

1. A physics major must complete the foundation courses (PHYS 101, PHYS 150, ASTR 102/PHYS 206, 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.