ASTRONOMY BACHELOR OF SCIENCE

Program Overview

The Department of Physics and Astronomy offers a major directed toward a career in astronomy. Most professional positions in astronomy and astrophysics generally require study leading to the Ph.D. degree. Opportunities include research positions in observatories, often in conjunction with university teaching, and scientific positions in government agencies and industry.

B.S. Degree Requirements

The Bachelor of Science degree requires a minimum of 76 credit hours in astronomy and physics courses. This degree is suitable for students who want to pursue graduate studies leading to research and academic careers in astronomy, astrophysics or related fields.

Code	Title	Hours
ASTR 001	DESCRIPTIVE ASTRONOMY	3
ASTR 01L	DESCRIPTIVE ASTRONOMY LAB	1
ASTR 041	ASTRONOMICAL TECHNIQUES	3
ASTR 185	INTRODUCTION TO ASTROPHYSICS I	3
ASTR 195	INTRODUCTION TO ASTROPHYSICS II	3
PHY 001	INTRODUCTION TO PHYSICS I (with lab and discussion)	4
PHY 002	INTRODUCTION TO PHYSICS II (with lab and discussion)	4
PHY 003	CONTEMPORARY TOPICS SEMINAR	1
PHY 021	INTRO TO METHODS IN PHYSICS	3
PHY 050	MODERN PHYSICS	4
PHY 059	ADVANCED LAB I & ERROR THEORY	2
PHY 121	THEORETICAL MECHANICS	4
PHY 122	ELECTROMAGNETIC THEORY	4
PHY 133	ELECTRONICS	4
PHY 149	ADVANCED LAB II	2
PHY 181	QUANTUM THEORY	4
PHY 191	PHYSICS SEMINAR I	1
PHY 192	PHYSICS SEMINAR II	1
PHY 197/198	RESEARCH I [1]	1
PHY 199	PHYSICS & ASTRONOMY CAPSTONE	0
Additional requirements outside of the department		
MATH 050	CALCULUS I	3
MATH 070	CALCULUS II	3
MATH 080	LINEAR ALGEBRA	3
MATH 100	CALCULUS III	3
MATH 110	MULTIVARIATE CALCULUS	3
MATH 120	APPLIED DIFFERENTIAL EQUATIONS I	3
CHEM 001	GENERAL CHEMISTRY I [2]	3
CS 065	INTRODUCTION TO COMPUTER SCIENCE I	3
Total Hours		**76**

1. Research Participation: 1 cr (min) of PHY 197 RESEARCH I and/or PHY 198 RESEARCH II at Drake and/or at least one REU (Research Experience for Undergraduates).
2. Students who take General Chemistry I at Drake University must take CHEM 001 GENERAL CHEMISTRY I with the lab (CHEM 003 GENERAL CHEMISTRY I LAB), as they are co-requisites. Students should note that a general chemistry lab is recommended for those pursuing certain pre-professional/career paths.

Students who double major in the B.S. in Physics and Astronomy must take two additional topical courses in Physics.

Grade Requirements for Graduation

2.0 minimum (C) average is required in all physics-credit courses. In addition, a C is required for Modern Physics, Advanced Lab I with Error Theory, Theoretical Mechanics, Electromagnetic Theory and Astronomical Techniques.

In addition to programmatic requirements, students are responsible for satisfying all requirements of the Drake Curriculum (https://catalog.drake.edu/archive/2024-2025/undergraduate/academic-information/drake-curriculum/), including Areas of Inquiry (AOI)

Student must also satisfy university graduation requirements (https://catalog.drake.edu/archive/2024-2025/undergraduate/academic-information/graduation-requirements/) for all undergraduate students..