

BS in Physics with Emphasis in Astronomy

Degree Program Description

Physics is the science that studies the structure and properties of matter and transformations of energy. With math as the language and experimental verification as a guide, physical study has established the fundamental laws of nature that are the foundation of all natural science and technology. The study of physics includes learning the general principles and the phenomena that have been discovered and developing the skills that enable such knowledge to be advanced through research. An emphasis area in astronomy is excellent preparation also for science teachers, laboratory technicians, computer programmers, and science journalists. It can also serve as the basis for graduate degrees in other fields, such as law or medical school. People with a degree (or background) in Physics with an emphasis in astronomy find jobs in planetariums, science museums, national observatories, national laboratories, federal agencies, universities, business or private industry.

Major Program Requirements

In addition to University (<https://catalog.missouri.edu/academicdegreerequirements/universityrequirements/>), general education (<https://catalog.missouri.edu/academicdegreerequirements/generaleducationrequirements/>), and College of Arts and Science (<https://catalog.missouri.edu/collegeofartsandscience/#undergraduatetext>) requirements, students must also meet the following major program requirements. All major requirements in the College of Arts and Science must be completed with grades of C- or higher unless otherwise indicated.

Students interested in astronomy may choose to pursue a BS in Physics with an Emphasis in Astronomy (the emphasis will show up on the transcript). For this option, students must take the required physics courses (<https://catalog.missouri.edu/collegeofartsandscience/physics/bs-physics/>), and five additional astronomy/physics elective courses. Four of the astronomy/physics electives must be chosen from the list below:

ASTRON 3010	Introduction to Modern Astrophysics	3
ASTRON 4020	Astrophysical Techniques	3
PHYSCS 4110	Light and Modern Optics	4
ASTRON 4250	Stellar Astrophysics	3
ASTRON 4350	Galactic Astronomy	3
ASTRON 4360	Extragalactic Astronomy	3
ASTRON 4450	Introduction to Cosmology	3
ASTRON 4460	Interstellar Medium	3
ASTRON 4950	Undergraduate Research in Astronomy	1-3
ASTRON 4960	Senior Thesis in Astronomy	3

Semester Plan

Below is a sample plan of study, semester by semester. A student's actual plan may vary based on course choices where options are available.

First Year		CR	Spring	CR
Fall				
PHYSCS 2010			1 PHYSCS 2750	5
MATH 1500 (Math and Quantitative Reasoning)			5 MATH 1700	5
ENGLSH 1000			3 Missouri State Law Requirement: Social Science from Arts and Science	3
CHEM 1400			3 Second major, minor, certificate, or elective	3
CHEM 1401			1	
Behavioral Science			3	
		16		16
Second Year		CR	Spring	CR
Fall				
PHYSCS 2760			5 PHYSCS 3150W	3
MATH 2300			3 PHYSCS 4100	3
Humanities, First Writing Intensive			3 MATH 4100	3
Second Language or Second Language Alternative			4 Second Language or Second Language Alternative	4
			Second major, minor, certificate, or elective	3
		15		16
Third Year		CR	Spring	CR
Fall				
PHYSCS 4140			3 PHYSCS 4120	3
PHYSCS 4060			4 Physics; 3000+ Level	3
Math Elective			3 Math Elective	3
Second Language or Second Language Alternative			4 Humanities, Depth of Study	3
			Second major, minor, certificate, or elective	3
		14		15
Fourth Year		CR	Spring	CR
Fall				
PHYSCS 4800			3 PHYSCS; 3000+ Level	3
PHYSCS; 3000+ Level			3 Physcs; 3000+ Level	3
Physcs; 3000+ Level			3 Humanities	3
Social Science			3 Second major, minor, certificate, or elective	4
Second major, minor, certificate, or elective			3	
		15		13

Total Credits: 120