# **Minor in Astronomy**

## Why study physics and astronomy?

Our goal is to understand the physical universe. The questions addressed by our department's research and education missions range from the applied, such as an improved understanding of the materials that can be used for solar cell energy production, to foundational questions about the nature of mass and space, how the universe was formed and subsequently evolved, and how astrophysical phenomena affected the Earth and its evolution. We study the properties of systems ranging in size from smaller than an atom to larger than a galaxy on timescales ranging from billionths of a second to the age of the universe. Our courses and laboratory/research experiences help students hone their problem solving and analytical skills and thereby become broadly trained critical thinkers. While about half of our majors move on to graduate studies in STEM, many find employment in the private sector in diverse situations ranging from financial analysts to physicians. Graduates of all our degree programs can be found in key positions regionally, nationally, and internationally. In this way, our department is at the forefront of telling the academic story of the University of Kansas to people around the state and around the world.

# Undergraduate programs in astronomy

Astronomy degrees are offered through the Department of Physics and Astronomy. The astronomy curriculum offers undergraduates a survey of modern astronomy and an introduction to physical science, gives science and engineering students an introduction to astronomy and astrophysics, and prepares students majoring in astronomy for graduate study in astronomy or related fields.

# **Courses for Nonmajors**

ASTR 191 surveys a wide range of contemporary astronomy topics. ASTR 394 is open to students with previous coursework in astronomy, biology, or geology; ASTR 391 offers an introduction to physical astronomy at a calculus-based level.

# Requirements for the Minor in Astronomy Astronomy Minor Course Requirements

Students selecting this minor must complete courses as specified in each of the following areas:

Code	Title	Hours	
General Physics I			
Satisfied by one of the following:		5	
PHSX 211 & PHSX 216	General Physics I Laboratory		
PHSX 213	General Physics I Honors		
General Physics II			
Satisfied by one of the following:		4	
PHSX 212 & PHSX 236	General Physics II and General Physics II Laboratory		
PHSX 214	General Physics II Honors		
General Physics III and Intermediate Physics Laboratory			
Satisfied by the following:			
PHSX 313	General Physics III	3	

<b>Total Hours</b>		21
combination of	ASTR courses numbered above 300.	
Astronomy Required Electives. Satisfied by at least 5 hours in any		5
ASTR 391	Physical Astronomy, Honors	3
Satisfied by the	e following:	
Physical Astro	onomy, Honors	
PHSX 316	Intermediate Physics Laboratory I	1

### **Minor Hours & Minor GPA**

While completing all required courses (above), minors must also meet each of the following hour and grade-point average minimum standards:

#### **Minor Hours**

Satisfied by 21 hours of minor courses.

#### Minor Hours in Residence

Satisfied by a minimum of 9 junior/senior (300+) hours of KU resident credit in the minor.

#### Minor Junior/Senior Hours

Satisfied by a minimum of 12 hours from junior/senior courses (300+) in the minor.

#### **Minor Graduation GPA**

Satisfied by a minimum of a 2.0 KU GPA in junior/senior courses in the minor. GPA calculations include all junior/senior courses in the field of study including F's and repeated courses. See the Semester/Cumulative GPA Calculator (https://sis.ku.edu/gpa-calculator/).