Astronomy 135 Syllabus summary

(Enrolled students should check the course Canvas page for the full syllabus)

135 [PSCI] Astronomy (4 semester hours; 3 lecture - 2 lab) Overview of the solar system, stars, galaxies, cosmology, and the history of astronomy. Includes a lab component with occasional evening meetings. Credit not granted for both ASTRONOM 135 and 150.

Prerequisites: none

Course format: 3 lectures per week, 1 lab per week

Course materials

- Annotation application: Perusall
- Lab book: OPIS! *Our place in space*, by Reichart
- Exercise book: *Lecture Tutorials for Introductory Astronomy* by Prather *et al*
- *Stellarium* desktop planetarium software
- Textbook: *Astronomy*, by Fraknoi, Morrison, and Wolfe (OpenStax)

Grade Weighting

In-class activities	40%
Online quizzes	10%
Annotations	20%
Lab**	20%
Lab milestones	10%
Total	100%

Labs

Lab exercises are entirely online: instructions, submission, and grading. We will follow the *OPIS: Our place in space* curriculum. You will be given an account on the Skynet robotic telescope network. You will be making your own observations and using supported software to analyze the data. Read the lab before watching the orientation and summary videos. Labs are submitted via WebAssign, a third party tool external to but linked to WSU Canvas. On each lab day you must complete a certain portion of the lab exercise. When that portion is completed then you earn full attendance credit; partial completion earns only partial credit.

Learning outcomes

This course satisfies the [PSCI] requirement for WSU's University Common Requirements (UCORE). It will develop your ability to ask and answer questions about the natural world in ways that value empirical observation as a key foundation for developing evidence-based theories. You will learn about science's current best models for the solar system, stars, and the universe, and, more importantly, the observations and chains of reasoning that lead to them.

List of topics

• The night sky — apparent motions of stars, the sun, moon, and planets

• Learning from light and other electromagnetic waves

• inferring stellar properties: parallax, stellar spectra, the H-R diagram

• stellar structure: equilibrium, nuclear reactions, energy transport

• cosmology: light travel time, the expansion of the universe, the big bang