

Syllabus  
**Astronomy 181: Introduction to Observational Astronomy**  
Department of Physics and Astronomy

Instructor \_\_\_\_\_

Phone/Voice Mail \_\_\_\_\_

e-mail \_\_\_\_\_

Office \_\_\_\_\_

Office Hours \_\_\_\_\_

Meeting Time 7:30 to 10:00 p.m. on \_\_\_\_\_

### Meeting Place

This class will meet either in Physical Science (Building 19, room 218 or 228) or at the Campus Observatory. Check your instructor's voice mail 30 minutes before the class meeting time to find out the location for the evening.

### Pre-requisites

This course has Astronomy 180 as a co-requisite. This means that you must have already taken AST 180, or be taking it concurrently with this class.

### Required Materials

A copy of the AST 181 lab manual, pencil, calculator, and flashlight.

### Course Description

This one-hour course serves as an introduction to observational astronomy. We will be concentrating on the night sky and the use of small telescopes when the sky is clear, and on exploring the motions of astronomical objects and other key concepts when the sky is cloudy. When paired with the three-hour lecture course, Astronomy 180, the pair of courses meets the four-hour laboratory science component for liberal studies. The thematic focus of this course is Technology and its Impact, since we will be examining how the use of telescopes changes the way we see the sky. The skills we will be concentrating on are the use of technology, specifically that of the telescopes and/or computers; the logic of scientific inquiry, which is at the heart of each laboratory exercise; quantitative reasoning as developed during your analysis of your observations; and spatial reasoning as developed during studies of the celestial sphere and the motions of the sun and planets.

## Course Objectives

After successful completion of this course, you will be able to:

- (a) Point out the basic stars and constellations in the night sky.
- (b) Use a small telescope to examine planets and other bright objects.
- (c) Sketch the daily and annual motions of the sun and other astronomical objects.
- (d) Use a variety of computer programs to illustrate basic astronomical concepts.
- (e) Use the method of scientific inquiry to explain observational phenomena.

## Course Structure

We will meet outside at the Campus Observatory almost every time that it is clear. Please DRESS WARMLY; standing still in the cold is very different than walking around in the cold. Observatories are never heated because the rising of warm air blurs astronomical images.

## Lab Reports

Virtually all lab projects will involve lab reports. The lab reports should be turned in at the end of the lab period; however, if you need extra time, you may turn them in as late as 5:00 p.m. on the Friday following that lab project. There will be some lab assignments given as take-home projects; these are to be completed outside of class and turned in as directed.

## Quizzes

Typically there will be a weekly quiz on the material covered in the previous week's lab. Each quiz will consist of one or two short essay questions on the most important concepts.

## Final Exam

The final exam will have questions very similar to those on the quizzes. The final will be given during finals week at 8:00 p.m. on the same day of the week as your class, in room 218 of the Physical Science Building.

## Grading System

Your grade will be weighted as follows:

Lab Reports	60%
Weekly Quizzes	20%
Final Exam	20%

The instructor will drop your single lowest lab grade, and your two lowest quiz grades.

The approximate grading scale will be:

- A  $\geq$  90%
- B  $\geq$  80%
- C  $\geq$  70%
- D  $\geq$  60%

The instructor can lower the curve but not raise it.

## Make-ups

There will be no make-up outdoor laboratories. Some indoor labs can be made up, but *only with prior permission* of the instructor. If you have an institutional excuse and the missed lab cannot be made up, the instructor will substitute the average of all your other lab grades for that lab. Make-up quizzes will be given only with an institutional excuse, or at the discretion of the instructor. (Please note that being ill does not constitute an institutional excuse. An institutional excuse is one that has been signed by the Dean of a college for academic reasons, or by the Dean of students for a non-academic reason.)

## Plagiarism and cheating

There will be zero tolerance for cheating in this class. Anyone caught cheating may receive a failing grade in the course. Working with other people during the lab is not considered cheating, but the work that you turn in **must** be your own words and not a copy of someone else's words.

## Tips for Succeeding in this Course

The key to succeeding in this class is making a real effort to understand the material, rather than mechanically filling out lab reports. Don't stand by and watch your lab partner figuring out the answers. If you receive less than a perfect score on the weekly quiz, you should discuss the quiz material with the instructor to make sure you understand it. In addition, attendance is crucial. Missing lab reports will make a huge difference in your grade.