

AST 101: INTRODUCTION TO ASTRONOMY

Syllabus: Fall 2015

Course Description and Prerequisites:

This is a lower division course organized around three questions: Why does the Sun shine? How stars end their life? How did the structures we see in the Universe today (stars, planets, galaxies...) form? How did the Universe begin and what is its fate? We will discuss what astronomers know today about the answers to each of these questions. More broadly, I hope to convince you that, via a combination of careful observation and theory, science allows us to confidently answer at least some questions that lie far outside the realm of what we experience in everyday life.

This course does not require SBU course prerequisites.

Textbook:

The Cosmic Perspective, by Bennett, Donahue, Schneider and Voit (required). It does not necessarily have to be the latest edition.

Course material: The topics are grouped as:

Perspective and Astronomy

Matter and Energy, Light/Atoms, Telescopes

Our Star the Sun

Properties of Stars, H-R Diagram, Binaries

Lives of Stars (Birth, Main Seq, Red Giants)

White Dwarfs, Neutron Stars, Black Holes

Our Milky Way Galaxy

Other Galaxies, Hubble Law

Galaxy Evolution, Quasars, Active Galaxies

Dark Matter, Large-Scale Structure

Cosmology: Creation and Fate of Universe

(Depending on how the course progresses, we may add or subtract from these topics)

Course Requirements and Grading Policy:

Grading:

- 10% clicker questions
- 20% written quizzes
- 40% three in-class midterms
- 30% comprehensive final exam

Clicker Questions:

A few times during each class I will ask questions to get you to think carefully about some of the concepts we have covered. Often I will have you talk to your neighbors before answering, so you can help each other figure out the correct answer.

Use of clickers:

- * Improves your grade. When you discuss and debate with others your knowledge improves.
- * Gives *YOU* immediate feedback regarding what you do and do not understand.
- * Tells *ME* what the class does not understand.
- * Greatly improves class participation.

Points will be assigned as follows:

Answer	Assessment
Correct	2 points
Wrong	1 point
No answer	0 points

Quizzes:

There will be a quiz in the last 10-15 minutes of class on most Fridays of the semester. Each quiz will probe material covered during that week.

Midterms:

Each of the three midterms will cover the previous 1/3 of the course material. They will be administered after roughly 5, 10, 14 weeks of class.

Final Exam: The final exam will cover all the topics of the course.

Throughout the semester, please keep in mind these [University regulations](#).