

ASTRO 1 Introduction to Astronomy (21316), Spring 2017

Instructor: Andrew Fittingoff (afittingoff@peralta.edu)
Lecture: MW 1:00PM - 2:15PM D 222
Website: <http://eperalta.org/spring2017>
Pre-requisites: Math 201 (Algebra), Math 202 (Geometry)

Contact

The best way to contact me is by email. Make sure you put “**ASTRI**” somewhere in the subject line so I am more likely to read it. If you have a question about the course, read through this syllabus to make sure it isn’t already answered on here.

Textbook

The Essential Cosmic Perspective, 7th Edition (ISBN-10: 0321928083). It can be purchased at the bookstore, or used copies can be found online. There are also copies on reserve in the library. The 6th edition is also acceptable; just avoid going earlier than that. We will cover every chapter, though not the entirety of each one.



Grading

Homework (20%): Homework assignments and their due dates will be posted on Moodle (<http://eperalta.org/fall2016/>). Late homework is accepted, but for reduced credit.

Group Quizzes (5%): There will be 15 minute quizzes every Wednesday at the beginning of class. They will be done in groups of up to 4 people.

Attendance (5%): Each Monday we will start the class with a discussion question. These, along with the quizzes, will add to your attendance percentage. You will be allowed one excused absence during the semester, as long as you notify me in advance via email.

Project (20%): Near the end of the semester you will be split into groups and asked to do a small research project and present it to the class on the final day. More information will be given later.

Exams (50%): The exams will be a mix of multiple choice and short answer. A practice exam can be found on Moodle. There will be three exams, but the lowest score is dropped, so you may miss one exam without penalty (there are no make-up exams).

Expectations

What can you expect from this course? You can expect to feel challenged, confused, and maybe even frustrated; this is normal. Many of the concepts in this class will require some time to really understand. Don’t be afraid of making mistakes or getting a wrong answer; this is a natural part of learning that even the most brilliant of scientists had to suffer through.

What do I expect from you? This is a college course, so I expect you to take responsibility for your performance in this class. You are expected to show up to class regularly, participate, and catch up on anything you miss. If at any time you are worried about how you are doing in the class, please talk to me. Don’t save your freak-out time to the end of the semester, because by then it’s too late.

Student Learning Objectives

1. Differentiate between planets, stars, galaxies, and the universe in terms of scale.
2. Explain and discuss basic astronomical phenomena, including the seasons, the phases of the Moon, eclipses, and planetary motion.
3. Explain and discuss the origin, development, and properties of planetary systems, stars, galaxies, and the universe.
4. Explain how theories in astronomy are based on observations

Curriculum

In this course we'll talk about the history of astronomy, the planets, stars, galaxies, and structure of the universe. Here's a tentative outline of where we're headed, with the relevant chapters in parentheses:

Week 1 – 1/23-1/25	Introduction	Our place in the universe (1)
Week 2 – 1/30-2/1	Celestial motion (2)	The ecliptic and the zodiac (2)
Week 3 – 2/6-2/8	Seasons (2)	Moon phases (2)
Week 4 – 2/13-2/15	Renaissance astronomy (3)	The law of gravity (4)
Week 5 – 2/20-2/22	President's Day	Orbital mechanics (4)
Week 6 – 2/27-3/1	Light and matter (5)	Light and quantum physics (5)
Week 7 – 3/6-3/8	Light and relativity (5)	Exam 1
Week 8 – 3/13-3/15	Our solar system (6)	Extrasolar planets (10)
Week 9 – 3/20-3/22	The terrestrials (7)	The jovians (8)
Week 10 – 3/27-3/29	The asteroid/Kuiper Belts (9)	The Sun (11)
Week 11 – 4/3-4/5	Red, white, and blue stars (12)	The life and death of stars (13)
Week 12 – 4/10-4/12	Spring Break	
Week 13 – 4/17-4/19	Neutron stars/black holes (14)	Exam 2
Week 14 – 4/24-4/26	The Milky Way (15)	Galactic collisions (16)
Week 15 – 5/1-5/3	Hubble's Law (16)	The Big Bang (17)
Week 16 – 5/8-5/10	Dark matter (18)	The end of the universe (18)
Week 17 – 5/15-5/17	Searching for alien life (19)	Exam 3

The final day of class will be Wednesday 5/24, 12:00 pm-2:00 pm

Plagiarism

All work submitted must be your original work. Copying from the textbook, websites, solution manuals, or other students is considered plagiarism. If cheating is suspected, the student(s) in question will be asked to make an appointment with the instructor. Should I determine that plagiarism has occurred, there will be a minimum penalty of a grade of zero for that assignment or exam. A student who does not follow through with the appointment will receive an F for the course.

Disability

Students who may need accommodations for their disabilities are encouraged to notify the instructor early in the semester so that reasonable accommodations may be implemented. Contact Disabled Students Programs and Services at 510-748-2328.