EART 8: Planetary Discovery

Fall 2017, Monday/Wednesday/Friday 10:40-11:45 a.m.
Thimann Lec 001
http://es.ucsc.edu/~xiz/file/EART8

Instructor: Prof. Xi Zhang, xiz@ucsc.edu, Earth&Marine A261.
Office hours: Monday/Friday, 4:00-5:00 p.m. or by appt.
TA:, Megan Kelly, megankelley@ucsc.edu, Earth&Marine C317.
Discussion Sections (Earth&Marine D258)**:**

(1) Tuesday, 5:00-6:00 p.m.
(2) Tuesday, 6:00-7:00 p.m.
(3) Thursday, 2:00-3:00 p.m.
(4) Thursday, 3:00-4:00 p.m.

Course Description: This course is basically an introductory course. It is intended for non-science majors. I will mainly present a sweeping tour of the sun, planets, satellites and small bodies in our solar system. I will summarize the major scientific results from telescopes and spacecraft missions. I will also present latest exciting highlights in planet hunting outside the solar system, astrobiology, and the enduring question of "are we alone in the universe?"
Prerequisites: No previous college-level math, physics, or astronomy is required.
Textbook: *Cosmic Perspective: The Solar System, 8th edition, by Bennet, Donahue, Schneider, and Voit, with MasteringAstronomy.com, Pearson.*
Access to the website of the textbook: www.masteringastronomy.com. The course ID is MAZHANG2017. It will need your student ID. You have to register on that web site to finish the homework online. *Your cheapest option is to buy the textbook package (including the access to the website) from the **bookstore**. If you get a used book, you still need to purchase access to the website.*
Approximate Grading Scheme:
Course participation: 10%
Discussion section: 10%
Homework: 30% (due on Friday 9 a.m., starting from the second Friday)
Midterm: 25% (Friday, November 3, 10:40-11:45 a.m.)
Final: 25% (Tuesday, December 15, 8-11 a.m.)
Course participation: To get the most out of class and a good grade, it is critical that you attend lectures. We will use some feedback tool in the class (use your smartphone or laptop to access masteringastronmy for interactive tools. But if that fails, we may switch to iclickers) and you will get points by simply answering my questions.
Homework: Homework will be assigned every week via the textbook web site: www.masteringastronomy.com. Once that due time (Fri. 9 a.m. every week) is passed, the assignment will be "closed" and no extension can be made. You can review any homework assignment at any time during the quarter.
Midterm and Final: You must take both midterm and final exams in order to pass the course. The midterm will cover materials from the first half of the course and the final will cover the whole quarter but more emphasis on the second half.
Discussion sections: Discussion section attendance is mandatory but there are no assignments in the sections. The sections give you an opportunity to clarify or review

material from lecture, discuss readings, receive help with writing assignments, or prepare for exams. The discussion sections are led by the course TA

Advice: It is highly recommended to read the chapter and relevant materials before the class. Students who do not attend both discussion sections and lecture are at a huge disadvantage for exams, homework, and the overall grade.

Disability: If you qualify for classroom accommodations because of a disability, please get an Accommodation Authorization from the Disability Resource Center (DRC) and submit it to me in person outside of class (e.g. office hour) within the first two weeks of the quarter. Contact DRC at (831)459-2089.

Preliminary course outline: The following is a rough outline of the topics to be covered this quarter. The schedule only reflects approximate timing.

Date		Due	Topics	Chapters
09/29 (Day 1)	F		Introduction	1, 2, 3
10/02 (Day 2)	M		Planets, phases of moon	
10/04 (Day 3)	W		Nature of science, history of astronomy	
10/06 (Day 4)	F		Motion, orbits, matter and energy	4, 5
10/09 (Day 5)	M		Kepler's laws, Newton's laws	
10/11 (Day 6)	W		Gravity, nature of matter and light	
10/13 (Day 7)	F	HW1	Spectra	
10/16 (Day 8)	M		Telescope	6
10/18 (Day 9)	W		Important Telescopes	
10/20 (Day 10)	F	HW2	Spacecraft, space missions	
10/23	M		Holiday	
10/25 (Day 11)	W		Overview of the solar system	7
10/27 (Day 12)	F	HW3	Star and planetary formation	8
10/30 (Day 13)	M		Planetary geology	9
11/01 (Day 14)	W		Planetary geology	
11/03 (Day 15)	F	HW4	Midterm Exam	
11/06 (Day 16)	M		Mercury, Venus, Mars	9
11/08 (Day 17)	W		Plate motion, Terrestrial atmosphere	10
11/10 (Day 18)	F	HW5	Terrestrial atmosphere	
11/13 (Day 19)	M		Climate on Earth	
11/15 (Day 20)	W		Climate on Venus and Mars	
11/17 (Day 21)	F	HW6	Giant planets	11, 12
11/20 (Day 22)	M		Satellites of giant planets	
11/22 (Day 23)	W		Rings, asteroids, meteorites	
11/24 (Holiday)	F	HW7	Holiday	
11/27 (Day 24)	M		Comets, Dwarf planets	12
11/29 (Day 25)	W		Extra-solar planets	13
12/01 (Day 26)	F	HW8	Extra-solar planets	
12/04 (Day 27)	M		Extra-solar planets	
12/06 (Day 28)	W		Life in the universe	24
12/08 (Day 29)	F	HW9	Life in the universe	