

DEPARTMENT OF PHYSICS

Fall 2007

Physics 9

The Solar System

Web site: <http://physics.ucsd.edu/students/courses/fall2007/managed/physics9/>

INSTRUCTOR: Professor Michael Norman
Office: Science and Engineering Research Facility (SERF) 424
Email: <mlnorman@ucsd.edu>
Office Hours: Thursday, 11-12
Phone Extension: (858) 822-4194

TA COORDINATOR: Wing Kit Lee, wklee@ucsd.edu
Office Hours: TBA

COURSE COORDINATOR: Patti Hey, 118 Urey Hall Addition, Phone 858-822-1468 <plhey@physics.ucsd.edu>

CLASS SCHEDULE

Lectures:	TuTh	9:30-10:50	PCH 109
Discussion Session	W	3:00-3:50	CENTR 212
Night Observations		TBA	

TEXT: Bennett et al., The Solar System: The Cosmic Perspective, 4th edition (2007).

Important Note: This course will require students to use tutorials and online quizzes available on the publisher's website at www.masteringastronomy.com. Those students who purchase new copies of the 4th edition will find their access code inside the front cover. Simply go to the website, click on the icon of your textbook (left hand side), and click on the button "Register" in the First-Time User box. You will be asked for the class ID. Enter **MLNORMAN0001**, and then supply the personal information requested. Those students who purchase used copies of the 3rd edition or earlier editions without a key code must purchase access to the publisher's website for \$27. Simply click on the "Buy Now" button in First-Time User box and follow their instructions. Students are strongly encouraged to register at www.masteringastronomy.com within the first week of classes and familiarize yourself with the contents of the textbook's accompanying materials.

LECTURE NOTES: PDFs of lectures will be posted on the class web site.

COURSE DESCRIPTION: Physics 9 is our basic introduction to the solar system for non-science majors who have no experience with astronomy, physics or math. Your goal will be to become familiar with the scientific way of thinking and solving problems. The solar system provides exciting and visually dramatic examples. We discuss: (1) The objects in the solar system: the Sun, planets, their moons, the asteroids, comets, and meteors. (2) The scale of the solar system in relation to the rest of the universe. (3) The formation of these objects and their geological evolution. (4) Some of the basic physics needed to understand these topics, including gravity, orbits, atoms, light, spectra, heat and energy. (5) The scientific method, including research tools such as telescopes and some history. (6) The recent discovery of water on other planets in the solar system, and the implications for life elsewhere. (7) The discovery of solar systems other than our own and the nature of extra-solar planets. Some familiarity with algebra and geometry would help, but none is needed. We occasionally use graphs (both histograms and x - y plots), equations with powers (exponents), proportion, angles, triangles and logs.

GRADING: The course grade will be determined by quizzes based on reading, homework, a midterm, and a final exam. Homework: Each week a homework assignment will be posted on the class website. This homework assignment will consist of working through one of the online tutorials at the publisher's website www.masteringastronomy.com, and then completing and turning in the corresponding pages in the Astronomy Media Workbook that came with your textbook (If you bought a used textbook, find a friend with a workbook and photocopy their pages). These pages are to be turned in at the beginning of class each Tuesday following the week it was assigned. While you can attempt the questions in the workbook without recourse to the online tutorials, they are highly recommended. These tutorials are self-paced and do not have to be done at one sitting. Students can repeat sections to improve comprehension. Your grade will be based on the percentage of the tutorial completed, not on the basis of the number of correct answers. The grades are automatically tabulated by the website's grade book and will count 20% toward final grade. Students thus have the possibility of getting a

perfect score on homework for the quarter.

Quizzes: Another part of your grade will be based on weekly quizzes. Quizzes are not done in class. Rather, we will use the online quizzes on the publisher's website at www.masteringastronomy.com for this purpose. Which quiz is assigned in a given week will be announced on both the class website and the publisher's website. Students can submit these quizzes online for automatic grading and instantly learn which questions they got right or wrong. Students can take the quiz as many times as they like until they get a perfect score. The grades are automatically tabulated by the website's grade book and will count 20% toward final grade. Students thus have the possibility of getting a perfect score on quizzes for the quarter.

Exams: will be mostly multiple choice or short answer, but there may be one or more questions requiring significant discussion. All exams will be closed book.

FINAL EXAMINATION: The final examination will be closed book and cover all of the material of the course, with major emphasis on the second half of the quarter. The date and time will be announced early in the quarter.

GRADING POLICY:	Homework	20%
	Quizzes	20%
	Midterm	25%
	<u>Final Exam</u>	<u>35%</u>
	Total	100%

Appeals of grading of quizzes should be made first to the TA during office hours, then to the instructor, if necessary. Appeals of grading of the final should be addressed to the instructor.

ADD/DROP: Use StudentLink to add/change/drop, drop from wait lists. See Jocille Flores in the Physics Department, Student Affairs Office, Urey Hall Addition, Room 115 if you have problems with StudentLink. If you need advice, see the TA or the instructor, **but they do not sign any cards.**

ADD/DROP DEADLINES:

Last day to add a class: Friday, October 12

Last day to drop a class w/o a W and change grade option: Friday, October 26

Last day to drop a class w/o an F: Friday, November 30

LECTURE SCHEDULE

Dates	Topics	Reading
Sep 27	Course Intro, Solar System in Perspective	1
Oct 2, 4	Night Sky, Science of Astronomy	2, 3
Oct 9, 11	Matter and Energy, Newton's Laws and Gravity	4, 5
Oct 16, 18	Light, Telescopes	6, 7
Oct 23, 25	Solar System Formation, Planetary Geology	8, 9, 10
Oct 30	Planetary Atmospheres	11
Nov 1	Midterm exam	
Nov 6, 8	Jovian Planets, Rings and Moons	12
Nov 13, 15	Asteroids, Comets, and Pluto	13
Nov 20*	TBA	See website
Nov 27, 29	Unique Planet Earth, Life Beyond Earth	14, 24
Dec 4, 6	<i>In depth</i> : Water in SS, Extrasolar Planets	See Website
Dec 13	Final exam, 8-11am	

*Thanksgiving week.

