DeAnza College
Physical Science, Mathematics & Engineering Division Winter
Quarter 2018

Astronomy 04: "The Solar System"

Class Times Section 5 CRN 00190 4:00-6:15 p.m. Tue & Thu

Location: The Fujitsu Planetarium (PLT)

Instructor: Paul J. Olejniczak (Oles)

Email: olejniczakpaul@deanza.edu

Office Hours: 3:00-4:00 p.m. Tue/Thu in Planetarium

Textbook: Openstax: "Astronomy"
Download for free at openstax.org/details/books/astronomy

Class Website: olespaul.com

Description:

Astronomy 4 is an introductory-level course, which concentrates on the Sun and the family of objects that orbit it including the planets, their satellites, asteroids, comets, meteoroids and Kuiper Belt Objects. The course will focus on what we have learned about them in the past five decades since the advent of humanity's ability to explore space. The course has no astronomy, physics or math prerequisites and is taught in a "non-mathematical" manner.

Objectives:

- To provide the student with as comprehensive an account of the modern field of planetary astronomy as possible.
- To create an increased sense of place and scale in the universe and a sense of how our species reached its current understanding of our world's place in the larger scheme of things.
- To acquaint the student with the appearances and other physical characteristics of the major planets, especially as they have been revealed by space probes over the last generation.
- To generate a familiarity with the various modes of research, which astronomers use to investigate other planets, including (but not limited to) various types of automated spacecraft.

Evaluation:

A student's final grade will be based upon four (4), fifty (50) questions each, objective-type exams including a comprehensive final examination. The lowest of the first three test scores will be dropped and the final grade will be a simple average of the remaining two (2) exams and the final exam. Sample exams from previous quarters are posted online.

Make-up examinations will not be administered.

- **A missed test – for any reason - will be counted as the student's one allowed dropped test. There will be no exceptions.**

- **Students missing two tests must withdraw before the final withdrawal date or receive an "F" grade for the class.**

  - **Last day to drop a class with no record of grade is Sun Sunday Jan 21**
  - **Last day to drop with a "W" is Fri Mar 02**

Notes regarding examinations:

- **Scantron test forms (brown or green) and #2 pencils are required for all examinations. It is the responsibility of the student to mark answers clearly and to fully erase mismarked answers. Scantron forms will not be rescored.**
- **Graded Scantron forms should be retained by students until their grades are formally posted by the College.**

Letter Grades:

A	= 89% +
B	= 79-88%
C	= 69-78%%
D	= 59-68%
F	= 0-58%

Extra Credit:

- **Extra credit questions will be provided on each examination and will be drawn from material in instructional videos presented during class.**
- **Optional extra credit assignments and projects will be also be offered during the quarter.**

Important

Dates:			
	Jan 09	**Tue**	**Class begins**
	Feb 06	**Tue**	**Test 1 on Chapters 1, 2, 3 & 4**
	Feb 22	**Thu**	**Test 2 on Chapters 6, 7 & 8**
	Mar 20	**Tue**	**Test 3 on Chapters 9 thru 14**
	Mar 29	**Thu**	**Final Exam 4:00p.m.**

Class and Lecture Schedule (Date indicates "The Week of Tuesday….")

Jan 09/11	**Tue/Thu**	**Orientation & Review of Class Roster** **Chapters 1: "Science and the Universe: A Brief Tour"** **Digital System: "Passport to the Universe"**
Jan 16/18	**Tue/Thu**	**Chapter 2: "Observing the Sky: The Birth of Astronomy"**

		Planetarium Demo: "The Constellations" **Coast Tele-course Video: "The Sky"**
Jan 23/25	**Tue/Thu**	**Chapter 3: "Orbits and Gravity"** **Coast Tele-course Video: "Newton and Einstein"** **Digital System: "Black Holes: The Other Side of Infinity"** **Chapter 4: "Earth, Moon and Sky – Part 1"** **Coast Tele-course Video: "The Origin of Astronomy"**
Jan 30/Feb 01	**Tue/Thu**	**Chapter 4: "Earth, Moon and Sky – Part 2"** **Cosmos Video: "Harmony of the Worlds"** **Review for Test 1 (Chapters 1, 2, 3 & 4)**
Feb 06/08	**Tue/Thu**	**Test 1 on Chapters 1,2,3 &4** **Return and Review Test 1** **Chapter 6: "Astronomical Instruments"** **Coast Tele-course Video: "The Tools of Astronomy"** **Digital System: "Two Small Pieces of Glass"**
Feb 13/15	**Tue/Thu**	**Chapter 7: "Other Worlds: An Intro to the Solar System"** **Coast Tele-course Video: "The Origin of the Solar System"**
Feb 20/22	**Tue/Thu**	**Chapter 8: "Earth as a Planet"** **Coast Tele-course Video: "Planet Earth"** **Review for Test 2 (Chapters 6, 7, 8 & 9 Test** **2 on Chapters 6, 7, 8 & 9**
Feb 27/Mar 1	**Tue/Thu**	**Return and Review Test 2** **Chapter 9: "Cratered Worlds"** **BBC Video: "The Moon"**
Mar 06/08	**Tue/Thu**	**Chapter 10: "Earthlike Planets: Venus & Mars"** **Video: Nat Geographic "The Planets" or "Venus Unveiled"** **Chapter 11: "The Giant Planets"** **Digital System: "Saturn: Jewel of the Heavens"**
Mar 13/15	**Tue/Thu**	**Chapter 12: "Rings, Moons and Pluto"** **Chapter 13: "Comets and Asteroids: "Debris of the Solar System"** **Chapter 14.1 & 2: "Cosmic Samples & the Origin of the Solar System"** **Review for Test 3 on Chapters 10, 11 & 12**
Digital System: "Firefall"		

Mar 20/22	**Tue/Thu**	**Test 3 on Chapters 10, 11 & 12** **Return and Review Test 3** **Chapter 15: The Sun: A Garden Variety Star"** **Digital System: "Heart of the Sun"**
Mar 29	**Thu**	**Final Exam at 4:00 p.m.**

Rules & Regulations:

Regular class attendance is required. Class attendance will be recorded each class period. Students missing three (3) consecutive classes will be dropped from the class.

The use of cell phones or pagers is strictly forbidden during class unless prior arrangements have been 0made with the instructor.

No food or drinks of any kind are permitted in Planetarium.

Student Learning Outcome(s):

*Appraise the benefits to society of planetary research and exploration.
*Compare and contrast the development of planetary systems and of the major panet types, including those factors that have led to Earth's unique characteristics.
*Evaluate astronomical news items or theories concerning solar system astronomy based upon the scientific method.