

PALOMAR COLLEGE  
COURSE OUTLINE OF RECORD FOR  
DEGREE CREDIT COURSE

  x   Transfer course        X   A.A. degree applicable course  
(check all that apply)

**COURSE NUMBER AND TITLE:** Astronomy 120/Geology 120:  
Planets, Moons and Comets

**UNIT VALUE:** 3

**MINIMUM NUMBER OF SEMESTER HOURS:** 48

**BASIC SKILLS REQUIREMENTS:**

Appropriate language skills.

**ENTRANCE REQUIREMENTS:**

**PREREQUISITE:** None

**COREQUISITE:** None

**RECOMMENDED PREPARATION:** None

**SCOPE OF COURSE:**

The astronomy and geology of the Solar System, observations, dynamics, relativistic ideas, including theories of formation and evolution. Comparative survey of the atmospheres, surface features and interiors of planets and satellites. Minor objects, such as comets and asteroids, will be included.

**SPECIFIC COURSE OBJECTIVES:**

1. The students will be able to relate to the universe around them and their place in it by:
  - a. identifying the controlling factors for seasonal changes on the Earth.
  - b. analyzing the contributions of past scientists in the understanding of our Solar System.
  - c. comparing and contrasting the planets in our Solar System.
2. The students will be able to deduce how the study of other planets can help us handle our own delicate world.
3. The students will compare and contrast the original ideas about the sky with our modern concepts and analyze how these ideas continue to change our view of the sky.
4. The students will be able to use the scientific method as an epistemological tool as it applies to astronomy, geology and life in general.
5. The student will be able to identify the origin of terrestrial processes that shape the physical environment.

**CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:**

1. The Scientific Method (1 class)
2. Celestial sphere (1 class)
3. Seasons (1 class)

4. Early understanding of the Solar System (5 classes)
  - a. Astrology
  - b. Greeks and other civilizations
  - c. Eclipses and Moon's phases
5. Copernican Revolution (3 classes)
  - a. Copernicus
  - b. Brahe
  - c. Kepler
  - d. Galileo
6. Laws governing the dynamics of the Solar System (3 classes)
  - a. Newton's laws of Motion and Gravity
  - b. Einstein's laws of Relativity
7. Earth as a comparison (5 classes)
  - a. interior
  - b. Surface features
  - c. Atmosphere
  - d. General environment
  - e. Environment needed for Life
8. Methods and instruments to gather information (5 classes)
  - a. Electromagnetic radiation and Spectra
  - b. Earth bound instruments
  - c. Deep space probes - Exploration of Space
9. Formation and Evolution of the Solar System (3 classes)
10. Physical properties of the Planets (20 classes)
  - a. Interior
  - b. Surface features
  - c. Atmosphere
  - d. General environment
  - e. Possible life
  - f. Satellites of the Planets
11. Comets (1 class)
12. Asteroids
13. Meteoroids

**REQUIRED READING:**

Franknoi, Andrew, et al. Voyages Through the Universe. Vol. 1. Saunders College Publishing, 1997.

**SUGGESTED READING:** None

**REQUIRED WRITING:**

Take-home essays as part of the three given exams. These essays are from one to two pages each and cover a discussion of some aspect of astronomy that affects the Earth or humans.

**OUTSIDE ASSIGNMENTS:**

**Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short term classes.**

Outside assignments include reading the text, studying course notes, preparing for exams and writing take-home essays.

**INSTRUCTIONAL METHODOLOGY:**

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

Lectures, demonstrations, slides, films and planetarium.

This course may be offered as a distance education course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes  No

If yes, check all that apply. (See guidelines for preparation for definitions.)

- telecourse
- mediated instruction
- computer assisted instruction

**GRADING POLICY AND STANDARDS** (include methods for determining whether the stated objectives have been met by students):

100 points	Quizzes, attendance and tardiness
100 points	1st exam (part take-home)
100 points	2nd exam (part take-home)
<u>200 points</u>	final exam (part take-home)
500 points	total

Less than 50% is failing. Letter grades are assigned using a statistical curve.

Take home essays have students, for example, relate energy production in stars to how we produce energy on the Earth.

**IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?**

YES  NO  Number of times course may be taken for credit 1 .

If yes, identify specific provision of Division 2 section(s) 55761-55763 and 58161 which qualifies course as repeatable.

**CONTACT PERSON:**

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