

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 100 Principles of Astronomy

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 fundamental nature of the night sky as understood by pre-20th century scientists. Properties of the solar system, stars, black holes, galaxies, and extragalactic objects. Interstellar communication and extraterrestrial life.

SPECIFIC COURSE OBJECTIVES:

1. The students will be able to relate to the universe around them and their place in it by:
 - a. observing in the sky how the movement and position of celestial bodies can be used to predict events, such as, phases of the moon and how these events can be related to physical laws.
 - b. observing the stars in the sky be able to identify the type of star, e.g., a red giant, and compare its evolutionary progression to the sun.
 - c. relating energy production in stars to how we produce energy on the Earth.
 - d. comparing the distances to objects around them and evaluate the accuracy's of the different methods used.
2. The students will analyze how scientists investigate the universe and will apply physical principles to explain how it works.
3. The students will be able to explain how understand how the properties of stars can benefit mankind in many fields, e.g., energy production.
4. The students will be able to deduce that the universe can be much beyond what we can ever imagine or our physical laws can predict.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

1. Scientific method (1 class)
2. Celestial sphere (1 class)
3. Seasons (1 class)
4. Unaided eye phenomena (3 classes)
 - a. Phases of the moon
 - b. Eclipses
5. Understanding the dynamics of the Solar System (3 classes)
 - a. Copernicus, Brahe and Kepler
 - b. Galileo and Newton
6. Gravitation and Tides (1 class)
7. Electromagnetic radiation and spectra (2 classes)
8. Telescopes and instrumentation (1 class)
9. Properties of stars (15 classes)
 - a. Sun - surface and atmosphere
 - b. Internal structure
 - c. Origin - Interstellar material
 - d. Evolution
 - e. Relativity
10. Stellar systems (9 classes)
 - a. Double stars
 - b. Clusters
 - c. The Galaxy
 - d. Galaxies and Quasars
11. Cosmology (4 classes)
12. Extraterrestrial Life (2 classes)

REQUIRED READING:

Fraknoi, Andrew, et al. Voyages To the Stars and Galaxies, 2nd Edition. Saunders College Publishing, 2000.

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 X

 telecourse (Course is taught by televised lessons not under direct supervision of an instructor. usually some on campus lecture/discussion session are required.)

 mediated instruction (Instruction is by audio-visual means in various combinations. Usually conducted in a learning resources center not under immediate supervision of a qualified instructor.)

 computer assisted instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

GRADING POLICY AND STANDARDS (include methods for determining whether the stated objectives have been met by students):
(Attach additional sheets if necessary)

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.

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

YES NO X 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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SIGNATURES ON FILE
