

11/11/99

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

Transfer course A.A. degree applicable course

(check all that apply)

COURSE NUMBER AND TITLE: Astronomy 210
 Life in the Universe

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 48

BASIC SKILLS REQUIREMENTS:
 Appropriate language skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: Astronomy 100 or Astronomy 120

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

A scientific exploration of life in the universe using the findings of astronomy, biology, and chemistry. Topics include the development of life and its environments on Earth, the search for life in the cosmos, interstellar communications and travel, and the effects of contact.

SPECIFIC COURSE OBJECTIVES:

Successful students will:

1. Relate to the universe we live in and identify their place in it by:
 - a. applying the methods that astronomers use to measure distances to celestial objects.
 - b. applying the methods that astronomers use to map our location in the universe.
2. explain the definition of life as it is currently understood.
3. explain current theories of the origin of life on Earth.
4. explain how environment plays a specific role in the evolution of life.
5. identify the methods scientists plan to use to find different forms of life in our solar system.
6. identify the limitations of life and how interactions with the cosmos may dictate the future of life on Earth.
7. explain how we communicate on earth and in space.
8. identify the methods astronomers use to search for life in the universe.
9. compare and contrast the religious, cultural, and political ramifications if we are successful in detecting life elsewhere in the universe.

10. identify ways in which we might travel to distant places in our galaxy and universe.
11. analyze the scientific evidence either for or against aliens currently visiting the Earth.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

1. The definition of life.
2. The sizes and numbers of objects in the universe.
3. A brief tour of the solar system.
4. Stars: the energy source of life.
5. Stars: the matter source of life.
6. The evolution of stars.
7. Interstellar Matter: The building blocks of stars, planets and life.
8. The Chemical basis of life.
9. Reproduction of information.
10. The origin of life in our solar system.
11. Theories on the origin of life on Earth.
12. The Chronology of life on Earth.
13. Where should we search for life? Extrasolar planets and suitable stars.
14. What do we look for? The electromagnetic spectrum.
15. Interstellar communication.
16. Search strategies.
17. What if we make contact? Religious, social, and political ramifications.
18. Is interstellar travel possible?
19. Close encounters? Flying saucers? The scientific investigation of visitation.
20. The Drake Equation: How many of us are there?
21. Limitations on Life: Mass extinctions.

REQUIRED READING:

Goldsmith, Donald and Owen, Tobias. The Search for Life in the Universe, 2nd Edition. New York: Addison-Wesley 1992.

Lane, Mark. (Packet of written articles on Life in the Universe). San Marcos, CA: Palomar College 2000.

SUGGESTED READING:

Various articles from Astronomical Publications such as:

Astronomy, Kalmbach Publishing Corp., Waukesha, WI, various dates
Sky and Telescope, Sky Publishing Corp., Belmont, MA, various dates

REQUIRED WRITING:

Two to three essay questions will be part of each exam. Each essay question will be a minimum of one-half page in length and will require students to describe concepts discussed in class or to synthesize concepts to answer specific questions about the subject matter.

Each student will be required to write one written report (3 - 5 pages in length) that requires research and discussion of topics that are explored in class.

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.

Students will be required to:

1. Read the textbook.
2. Read related articles given out as supplementary materials.
3. Study Lecture notes.
4. Prepare for exams.
5. Complete a written report on topics discussed in class.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
 laboratory
 lecture-laboratory combination
 directed study

Lectures, demonstrations, slides, videos and planetarium visits.

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 of determining whether the stated objectives have been met by students):

In class exam (midterm)	30%
In class exam (final)	30%
In class quizzes	30%
Written report	10%

100%

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 Title 5 Division 2 section(s) 55761-55763 and 58161 which qualifies course as repeatable:

CONTACT PERSON:

Mark Lane
760 744-1150 Ext. 2951

SIGNATURES ON FILE
