

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: Biology 114L – Ecosystem Biology (Laboratory)

UNIT VALUE: 1.5 or 2.0

MINIMUM NUMBER OF SEMESTER HOURS: 72 or 96

BASIC SKILLS REQUIREMENTS: Appropriate Language and Computational Skills

ENTRANCE REQUIREMENTS

PREREQUISITE: Completion of, or concurrent enrollment in, BIOL 114, or BIOL 101

COREQUISITE:

RECOMMENDED PREPARATION:

SCOPE OF COURSE:

Laboratory and field experiences to illustrate and observe biology as it relates to exemplary ecosystems. Typical field sites include the Greater Yellowstone Ecosystem, Central America, or the Sea of Cortez. *A fee is required, and additional costs may be incurred. Contact the Life Sciences Department or the schedule of classes for specific information about the laboratory field sites, dates, and fees. CSU; UC*

SPECIFIC COURSE OBJECTIVES:

Upon completion of this course the successful student will be able to:

1. Analyze how science is done, and how scientific reasoning differs from non-scientific reasoning;
2. Demonstrate proper safety in the laboratory and field;
3. properly use and maintain laboratory and field equipment;
4. Properly use metric units and readily convert between units;
5. Design simple experiments;
6. Evaluate data using statistical analyses;
7. Analyze and observe the flow of energy in nature through the study of food chains (webs);
8. Analyze and observe the mechanisms of evolution and speciation;
9. Analyze characteristics of, and phylogenetic relationships between and within, the three major Domains of Life;
10. Analyze and observe individual and group animal behavior;
11. Apply a variety of ecological techniques to analyze ecosystems specific to the field locations; and
12. Analyze human impact on nature.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I) Metric measurements and conversions
- II. Scientific process
 - A. Process of investigation
 - B. Data Analysis
- III. Natural selection

- IV. Phylogenetics, characteristics, and systematics of organisms
 - A. Eubacteria
 - B. Archaea
 - C. Eukarya
 - 1. Plants
 - 2. Animals
 - 3. Fungi
 - 4. Lichens
 - 5. Protist clades

- V. Ecological techniques
 - A. Transects
 - B. Quadrat sampling

- VI. Species interactions and animal behaviors (individual and group)
 - A. Foraging strategies and behaviors
 - B. Predator-prey relationships
 - C. Symbiotic relationships
 - D. Territoriality
 - E. Reproductive behaviors, e.g. harem formation, mating displays, mating, etc.

- VII. Analysis of Specific Ecosystems (e.g. Greater Yellowstone)
 - A. Riparian
 - B. Big Sage
 - C. Meadow/Park
 - D. Douglas Fir
 - E. Aspen
 - F. Lodgepole Pine
 - G. Spruce
 - H. Whitebark Pine
 - I. Alpine Tundra

- VIII. Current controversies in ecosystem management, (e.g. Greater Yellowstone)
 - A. Grizzly management
 - B. Lake trout
 - C. Mining interests
 - D. Public access
 - E. Others

REQUIRED READING:

Brower, J.E., J.H. Zar, and C.N. von Ende. Field and Laboratory Methods for General Ecology.
 Dubuque, IA: W.C. Brown, 1990.

Laboratory exercises prepared by the instructor(s).

SUGGESTED READING:

At least two field guides from different kingdoms, e.g., one for plants and another for animals. An example is listed below.

Udvardy, M.D.F. and J. Farrand Jr. National Audubon Society Field Guide to North American Birds, Western Region. New York: Audubon Society, 1995.

Selected articles and handouts prepared by the instructor(s).

REQUIRED WRITING:

Students are required to keep a course journal in which they record all field observations including: species observed, their characteristics, classification, and location where seen; laboratory exercises; and notes related to instructor or peer guided discussions as well as to write a research report on a biological topic related to the field location. Journals are typically twenty or more pages in length.

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 are expected to spend a minimum of 1.5 or 2.0 hours per unit per week in class and on outside assignments. Outside assignments may include readings, preparation for quizzes, preparation of reports, preparing course journal, and other assignments. Students will be required to do a 3-5 page report on a biological topic related to the ecosystem. The topic must be approved by the instructor(s).

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

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

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

Yes No

If yes, check all that apply.

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- 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 of determining whether the stated objectives have been met by students):

Evaluation of students typically includes quizzes, oral and written reports, laboratory exercises, the course journal, and other assignments. A recommended weighting of assignments is listed below.

Quizzes	30%
Reports	20%
Laboratory exercises and other assignments	20%
Journal	30%

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

CONTACT PERSON: DANIEL SOURBEER, x 2775

SIGNATURES:

By signing this form, I certify that this course outline of record meets all the minimum requirements for associate degree credit courses as specified in Title 5 Section 55002.

SIGNATURES ON FILE