

COURSE OUTLINE**Biology 131
Regional Natural History****I. Catalog Statement**

Biology 131 offers individual and group investigations of the biological environment and the impact of human activities upon it. Students examine the inter-relationship between living organisms and their habitats by special projects. Library research, a scientific paper, and/or an oral presentation may be a part of the course. Field studies will investigate a variety of world localities. When taught in Baja California, Mexico, the field portion of the course is based at the Glendale College Field Station in Bahia de los Angeles.

Total Lecture Units: 2.0

Total Laboratory Units: 1.0

Total Course Units: 3.0

Total Lecture hours: 32.0

Total Laboratory hours: 48.0

Total Faculty Contact Hours: 80.0

Recommended Preparation: A Biology or Ecology course in high school or college.

II. Course Entry Expectations

Skill Level Ranges: Reading 5; Writing 5; Listening/Speaking 5; Math 2.

III. Course Exit Standards

Upon successful completion of the required course work, the students will be able to:

1. Discuss the major environmental parameters of the unique area being studied;
2. Identify the dominant organisms of the area being studied;
3. Evaluate the human impact on the area being studied.

IV. Course Content

Total Contact Hours = 80 Hours

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| A. Major Geology and Geography of the Area | 10 hours |
| 1. Plate tectonics: general and for the specific area | |
| 2. Meteorology | |
| 3. Biogeography and mechanisms of speciation | |
| B. Systemic Review of Local Organisms | 20 hours |
| 1. Specific prokaryotic, algal, and plant communities as regulated by environmental conditions | |

2. Vertebrates and invertebrates associated with nearby habitats
 3. Evolutionary adaptations of the major animal phyla
 4. Behavioral ecology of animals
- C. Principles of Ecology 20 hours
1. Biomass and energy pyramids
 2. Trophic levels, biomagnification
 3. Primary producers, decomposers, and nutrient cycling
- D. Major Interactions Among Organisms 10 hours
1. Competition, predation, herbivory, and symbiosis
 2. Population dynamics
 3. Human impact
- E. The Human Niche in the Environment 10 hours
1. Social and cultural aspects
 2. Industrial/commercial aspects
 3. Biological aspects (e.g., agriculture, fishing)
 4. The future of humans in the area (e.g., population growth, disease)
 5. Conservation biology and resource management
- F. Individual Field Studies 10 hours
1. Web/Library-based research
 2. Data collection
 3. Field notebook with lab write-ups, species lists, biological drawings

V. Methods of Instruction

The following instructional methodologies may be used in the course:

1. lecture;
2. multi-media;
3. online;
4. field activities.

VI. Out of Class Assignments

The following out of class assignments may be used in the course:

1. research on a particular aspect of local ecology and/or human impact on local ecosystem;
2. completion of field notebook with daily observations, notes and illustrations.

VII. Methods of Evaluation

The following methods of evaluation may be used in the course:

1. examinations and quizzes;
2. research project report;
3. field notebook with observations, notes, and drawings;
4. oral presentation (e.g., threatened local habitats or species).

VIII. Textbooks

Schoenherr, A.A., A Natural History of California. Current Edition.

Berkeley and Los Angeles: University of California Press, 1995.

13th Grade Textbook Reading Level. ISBN: 978-0520069220.

IX. Student Learning Outcomes

1. Students will be able to recognize and/or explain the main ecological characteristics of the particular location/ecosystems in which the class is taking place.
2. Students will be able to recognize and/or explain the patterns of biodiversity of the particular location/ecosystems in which the class is taking place.
3. Students will be able to recognize and/or explain the impact that humans have had on the location/ecosystems in which the class is taking place.