

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:**    BIOL 140 - Natural History Photography

**UNIT VALUE:**                3 Units

**MINIMUM NUMBER OF SEMESTER HOURS:**    48 hours

**BASIC SKILLS REQUIREMENTS:**        Appropriate Language Skills

**ENTRANCE REQUIREMENTS:**        None

**PREREQUISITE:**

**COREQUISITE:**

**RECOMMENDED PREPARATION:**

**SCOPE OF COURSE:**

An introduction to natural history using photography as a means of documentation and personal expression. The physical and biological aspects of a variety of ecosystems will be studied. The diversity and biology of major groups of wildlife and plants will also be emphasized. The 35mm camera and color slides will serve as scientific and creative tools to document personal observations of natural history in the field. Beginning methods of photography as well as special techniques will be learned and applied to photographing nature. Field trips, critiques, and discussions will be held on assigned topics.

**SPECIFIC COURSE OBJECTIVES:**

Student will:

1. list and explain the basic principles of natural history;
2. compare and contrast the major ecological biomes;
3. compare and contrast the characteristics of major groups of wildlife and plants;
4. operate a 35mm camera and create properly exposed and focused color slides;



- G. Tidepools
  - 1. Physical parameters
  - 2. Flora & fauna
  - 3. Photographic opportunities
- H. Rain Forest
  - 1. Physical parameters
  - 2. Flora & fauna
  - 3. Photographic opportunities
- V. Taxonomy (Naming Organisms)
  - A. Common Names
  - B. Taxonomic groupings show relationships
    - 1. Species = single kind of organism
    - 2. Genus = closely related species
    - 3. Family = closely related genera
    - 4. Order = related families
    - 5. Class = related orders
    - 6. Phylum = related classes
  - C. Photographic Applications
- VI. Plants
  - A. Introduction to Plants
    - 1. Photosynthesis
    - 2. Carbon cycle
  - B. Taxonomy of Plants
  - C. Life Cycles of Plants
  - D. Flower Structure
  - E. Techniques for Photographing
    - 1. Trees & shrubs
    - 2. Flowers
- VII. Invertebrates
  - A. Introduction to Invertebrates
    - 1. = all animals without vertebrae (backbones)
    - 2. Tremendously diverse & abundant group made up of many phyla
  - B. Overview of Invertebrate Phyla
    - 1. Sponges
    - 2. Cnidarians
    - 3. Platyhelminths
    - 4. Nematodes
    - 5. Annelids
    - 6. Molluscs
    - 7. Arthropods
    - 8. Echinoderms
  - C. Photographic Techniques: Close-up Photography
  - D. Example Species
- VIII. Fish
  - A. Introduction to Fish
  - B. Adaptations for Aquatic Environment
  - C. Senses
  - D. Photographic Techniques
- IX. Amphibians
  - A. Introduction to Amphibians
  - B. Adaptations to Land/Water Niche
  - C. Amphibian Metamorphosis
  - D. Senses

- E. Habitats
- F. Photographic Techniques
- X. Reptiles
  - A. Introduction to Reptiles
  - B. Adaptations for Land
  - C. Senses
  - D. Photographic Techniques
  - E. Example Species
- XI. Birds
  - A. Introduction to Birds
  - B. Adaptations for Flight
  - C. Nesting
  - D. Senses
  - E. Example Species
- XII. Mammals
  - A. Introduction to Mammals
  - B. Mammalian Adaptations
  - C. Senses
  - D. Photographic Techniques
  - E. Example Species
- XIII. Photomicrography
  - A. Introduction to Microscopy
  - B. Basic Techniques and Setup
  - C. Special Creative Effects
- XIV. Darkroom Techniques
  - A. Printing from Slides
    - 1. Inter-negative
    - 2. Cibachrome Process
  - B. Picking a Good "Print" Slide
    - 1. Bright colors
    - 2. Contrast will be increased
  - C. Steps of Cibachrome Printing

**REQUIRED READING:** None

**SUGGESTED READING:**

Behler, J.L. & F.W. King. The Audubon Society Field Guide to North American Reptiles and Amphibians. Any edition. New York: Alfred Knopf, 1979.

Caulfield, Pat. Photographing Wildlife: Techniques for Portraying Animals in Natural Habitats. New York: AMPHOTO, 1988.

Delly, J.G. Photography through the Microscope. Rochester: Eastman Kodak Company, 1980.

Freeman, Michael. The Complete Book of Wildlife & Nature Photography. New York: Simon & Schuster, 1981.

- Jaeger, E.C. and A.C. Smith. Natural History of Southern California. Berkeley: University of California Press, 1966.
- National Wildlife Federation. Colors in the Wild. Washington, D.C.: National Wildlife Federation, 1988.
- Patterson, Freeman. Photography of Natural Things. San Francisco: Sierra Club Books, 1989.
- Peterson, Roger Tory. A Field Guide to Western Birds. Any edition. Boston: Houghton Mifflin Co., 1961.
- Rayfield, Susan. Wildlife Photography: The Art and Techniques of Ten Masters. New York: AMPHOTO, 1982.
- Ricketts, E.F., J. Calvin, & J.W. Hedgpeth. Between Pacific Tides. 4th edition. Stanford: Stanford University Press, 1968.
- Rue, Leonard L. How I Photograph Wildlife and Nature. New York: World Almanac Publications, 1985.
- Ville, C.A., W.F. Walker, and R.D. Barnes. Introduction to Animal Biology. Any edition. Philadelphia: W.B. Saunders, 1979.
- Willson, Mary. Vertebrate Natural History. Any edition. Philadelphia: W.B. Saunders, 1984.

\*Note to curriculum committee: For many of the above references any edition will be appropriate.

Journals:

Natural History  
Outdoor Photographer  
Scientific American  
Science News  
Zoonoos

**REQUIRED WRITING:**

Exams will include several short essays of approximately one half page each. To demonstrate photographic skills students will produce sets of 35mm slides. In addition students will write one page critiques of their work applying principles covered in class. A special topic project involving a photo-essay with written text (approximately 3 pages long) will also be required. A minimum of 15 pages will be written.

**OUTSIDE ASSIGNMENTS:**

Students will study text and lecture notes for exams and for application toward specific assignments. Additional time will be required to produce 35mm slides as way of demonstrating photographic skills. Specific assignments will illustrate various concepts discussed in lecture. Students will also spend time outside class critiquing their slides and producing photo-essays.

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.

**INSTRUCTIONAL METHODOLOGY:**

Check all that apply:

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

Lecture. Methodology will include lecture, slide presentation, demonstration, field trips, critique of students' slides.

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**

40% course grade = 2 exams, 40% course grade = 4 photo/critique assignments, 20% course grade = photo-essay.

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE? Yes  No  Number of times course may be taken for credit: 1.