



## CONCEPTS IN BIOLOGY CURRICULUM NOLS/UNIVERSITY OF UTAH

It is difficult to calculate the separate number of hours devoted to biological or natural history studies, both in and out of formal classes. However, the basic material described below will be covered, including the approximate student time. Many additional classes and skills are taught in the biology curriculum which are not related to biology. They are part of the standard NOLS semester course curriculum.

One of the primary objectives of our curriculum is to train individuals to be safe, competent outdoor persons who can live and study comfortably in the wilderness while leaving a minimal amount of impact. With an emphasis on practical field studies and learning ecological principles, students develop an awareness and understanding of the natural sciences from both a theoretical and practical standpoint.

Specific classes are offered in the following biological areas (please note that the total number of hours of both formal and informal classes is the minimum. There is considerably more time devoted to individual subjects and topics, but this varies among courses):

### **HUMAN PHYSIOLOGY:**

- Nutrition and Rations (1 hr.).
- First Aid (8 hrs; practical 4 hrs.). Includes coverage of human physiology necessary to ensure that patient needs are met during longer-term backcountry care.
- Personal Hygiene (1 hr.). Causes, effects and prevention of illness related to poor hygiene and sanitation practices are covered.
- High altitude physiology (1 1/2 hrs.).

### **NATURAL SCIENCES:**

- Trees and Shrubs (2 hrs.). Identification and taxonomy.
- Wildflowers (1 hr; practical 2 hrs.). Identification, structure and function.
- Edible Plants (1 hr.).
- Plant Adaptation (1 1/2 hrs.).
- Animal Signs (1 hr; practical 2 hrs.). Tracks, scat and other signs are covered.
- Mammology (2 hrs.). Includes identification and regional variation.
- Animal Adaptations (2 hrs.). Emphasis is on the regional and seasonal adaptations.
- Game Fish (1 hr.). Review of species, family relationship and identification.
- Ornithology (1 1/2 hrs. practical 2 hrs.). Identification, special adaptations, migration and territoriality are topics covered.



College of Health

- Environmental Principles and Concepts (2 1/2 hrs.). Includes but not limited to zonation, both spatial and temporal, niches, communities and ecosystems.
- Ecology (2 hrs.). Successional patterns, nutrient cycling and fire ecology are covered.
- Geology (3 hrs.). Topics include rocks and minerals, rock types, geomorphology, plate tectonics and formations.
- Glaciology (1 1/2 hrs.).
- Astronomy (2 hrs.). Solar system, planets, stars, constellations.
- Weather (2 hrs.).
- Land Use History (2 hrs.). Exploration, settlement and legislation. Includes a review of current land management agencies and their historical roots, current resources, conflicts and resolution attempts.

A reminder that the total hours listed above are merely minimums. Considerably more time is spent on the topics with formal and informal classes. At NOLS we believe in supporting what we teach as much as possible with direct field experience. Organized group activities such as vegetation transects, plant sampling, plant and animal identification and animal behavior studies may occupy twice as much time as listed above.

We hope that this information is helpful. If you have further question regarding the program, please contact our Admission Office at (307)332-5300 between 8:00 and 5:00 Mountain Time.

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