Revised 11/2010

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
BIO 120 - GENERAL ZOOLOGY (4 CR.)

Course Description

Presents basic biological principles, emphasizes structure, physiology, and evolutionary relationships of invertebrates and vertebrates. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

General Course Purpose

This is a one-semester course for science majors, interested students, or those who took an AP course in high school. In it, students are introduced to the evolution of vertebrates and invertebrates from the Paleozoic to the present. Emphasis is placed on anatomical and physiological characteristics of major phyla and how they fit into their environment.

Course Prerequisites/Co-requisites

Prerequisite is placement into ENG 111.

Course Objectives

Upon completion of this course, the student should be able to:

- recognize members of the major phyla of animals based on their morphology
- illustrate and give evidence for plausible evolutionary sequences of the invertebrate phyla and each class of vertebrates
- explain the role of the various animal groups in their natural communities and geographical distribution in relation to continental positions (of the past)
- demonstrate comprehension of the concepts of niche, speciation, radiation, pre-adaptation, food web, and trophic levels
- be familiar with environmental forces which "selected for" special characteristics and allowed for the successful dominance, massive extinctions, and adaptive radiation of various animal species
- use various types of keys to identify animal species
- recognize some locally common species
- be familiar with the methods of collecting and recording field data
- collect and preserve (stain and mount when appropriate) and label specimens for scientific study collections
- demonstrate skill in the dissection of the gross anatomy of selected animals

Major Topics to be Included

Lecture

- Aquatic and terrestrial biomes
- Taxonomy
- Protozoa
- Porifera, Cnidaria, Ctenophora
- Platyhelminthes, Rotifera, Nematoda
- Annelida, Mollusca
- Arthropoda
- Echinodermata and invertebrate Chordata
- Vertebrate Chordates

Laboratory

- Use of keys
- Embryonic development patterns and metamorphasis patterns
- Protozoa
- Porifera, Cnidaria, Ctenophora
- Platyhelminthes, Rotifera, Nematoda
- Annelida, Mollusca
- Arthropoda
- Echinodermata and invertebrate Chordata
- Vertebrate Chordates

Extra Topics (Optional)

Field trips to local and foreign ecosystems to gain first hand experience in gathering and recording field data and in collecting, identifying, and preparing specimens for museum collections.