Revised 11/2010

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
BIO 226 - VERTEBRATE ZOOLOGY (4 CR.)

Course Description

Focuses on structure, embryology, function, ecology, classification, and evolution of vertebrate animals. Lecture 3 hours. Recitation and laboratory 3 hours. Total 6 hours per week.

General Course Purpose

This is a one semester sophomore level college transfer course designed for Science majors. The student is introduced to the evolution of vertebrates from the Paleozoic to the present. Emphasis is placed on anatomical and physiological characteristics of major taxa of Chordates. In addition, the student obtains field experiences in collection, identification, and preparation of local vertebrates.

Course Prerequisites/Co-requisites

Prerequisites are BIO 101-102 or division approval.

Course Objectives

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

- list the characteristics of each of the major subgroups of the Phylum Chordata
- familiar with the chronological history of each class of vertebrates
- describe the present zoogeographical distribution of vertebrates in relation to past continental positions
- demonstrate skill in the dissection of the gross anatomy of selected Chordates
- use a dichotomous key to identify North American vertebrates
- familiar with the methods of collecting and recording field data
- collect and preserve vertebrate specimens for scientific study collections
- familiar with the natural processes which have produced massive extinctions and adaptive radiation within the Phylum Chordata
- familiar with the environmental forces which "selected for" primate characteristics and allow for the successful dominance of Homo sapiens

Major Topics to be Included

- Prochordate evolution and their phylogenic relationships with invertebrate phyla
- Morphology, physiology, and life histories of extant prochordates
- Evolution of vertebrates: Agnatha past and present
- Significance of development of jaws and paired appendages
- Dominance of Paleozoic jawed vertebrates
- Develolpment of tetrapods
- Paleozoic distribution of terrestrial vertebrates with emphasis on climates and continental drift
- Zoogeographic distribution of extant families of amphibians
- Evolution of reptiles
- Reptilian dominance and endothermy
- Mesozoic climates and continent distribution
- Cretaceous extinction
- Distribution of extant families of reptiles
- Rise of Aves and Mammals

- Development of placential dominance
- Adaptive radiation of early Cenzoic mammals
- Primate evolution
- Evolution of Homo Sapiens

Optional Topics

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.