

BIOL 4350K: Comparative Vertebrate Anatomy

4 Credit Hours

Prerequisite: (BIOL 1108 and BIOL 1108L) and (CHEM 1211 and CHEM 1211L)

Students will explore a survey of representative vertebrates and related chordates emphasizing phylogeny and anatomical adaptations. Students will investigate evolutionary trends in the context of large-scale environmental changes that have occurred over geologic time. Using a comparative, systems-based approach, students will explore the relationships between structure and function. In the lab, students will learn to dissect selected vertebrate organisms and study anatomical adaptations among these representative models to recognize the relationships between form and function.

BIOL 4390K: Developmental Biology

4 Credit Hours

Prerequisite: (BIOL 3300 and BIOL 3300L) and BIOL 3410

Students will explore the fundamental questions of developmental biology, focusing on both classical experiments and modern molecular and genetic techniques. Students will investigate how differential gene expression and cell-cell communication generate new tissue types, specify the body axes, form the nervous system, and determine sex. Students will explore the role of development in human health and disease. In the laboratory, students will conduct experiments to test hypotheses about the mechanisms of cellular differentiation and morphogenesis.

BIOL 4399: Seminar

1 Credit Hours

Prerequisite: BIOL 3410 and 90 credit hours or permission of the instructor.

Students will learn selected topics of current interest announced during registration.

BIOL 4400: Directed Study

1-4 Credit Hours

Prerequisite: Approval of instructor, major area committee and Biology/Physics Department Chair prior to registration.

Students will learn selected topics of an advanced nature and may include original research projects.

Notes: Up to eight hours may be applied to the major area.