

ZOOLOGY – ZOOLOGY

ZOOL 224

Vertebrate Adaptations and Evolution

3 Credits

This course provides a comprehensive introduction to the diversity of vertebrates using an evolutionary approach. Morphological, physiological, and behavioural adaptations related to the life of vertebrates in aquatic and terrestrial habitats are emphasized. Students employ the principles of systematics and taxonomy in the classification of vertebrates.

Prerequisites: A minimum grade of C- in BIOL 108.

ZOOL 241

Animal Physiology I: Homeostasis

3 Credits

This course examines physiological systems that regulate the internal conditions of animals. Emphasis is placed on mechanisms that regulate water and ions, respiratory gases, and temperature in relation to the external environment. Physiological systems from both invertebrates and vertebrates are studied.

Prerequisites: A minimum grade of C- in BIOL 107.

ZOOL 242

Animal Physiology II: Intercellular Communication

3 Credits

This course examines the physiological systems of animals that involve intercellular communication. Focus is on the endocrine, neural, sensory, motor, and immune systems of invertebrate and vertebrate animals.

Prerequisites: A minimum grade of C- in BIOL 107.

ZOOL 250

Invertebrate Zoology

3 Credits

This course explores the evolution and ecological roles of invertebrate animals. The diversity of ecological niches, behaviours, and life histories of invertebrates are related to functional anatomy. In the laboratory, students explore the diversity and functional anatomy of invertebrates using live and preserved specimens. The course includes an optional field trip to a coastal area.

Prerequisites: A minimum grade of C- in BIOL 108.

ZOOL 324

Comparative Anatomy of the Vertebrates

3 Credits

This course provides a comparative survey of the anatomy of vertebrates emphasizing evolutionary trends and anatomical adaptations for life in aquatic and terrestrial habitats. Special emphasis is placed on fish and mammals. The laboratory develops advanced dissection skills.

ZOOL 325

Entomology

3 Credits

Insects are the most successful animals on Earth. This course examines their evolutionary history and adaptations that have led to their success. Insect behaviour is examined as it relates to morphology, lifecycle, and ecology to explain how insects can be dominant in diverse ecological situations. The economic, medical, scientific and cultural impact of insects is surveyed. The laboratory emphasizes methods of collecting, preserving, and identifying insect groups.

Prerequisites: A minimum grade of C- in ZOOL 250.

ZOOL 400

Aquatic Vertebrates

3 Credits

This course examines the evolution and natural history of fish, amphibians, birds, reptiles, and mammals in aquatic environments. Topics include behavioural, morphological, and physiological adaptations. Students summarize, interpret, and present scientific literature. The laboratory focuses on biodiversity, fecundity, locomotion, and molecular systematics with emphasis on native species of Alberta.

Prerequisites: Minimum grades of C- in ZOOL 224 and one of BIOL 310, BIOL 361, BIOL 367, or ZOOL 324.

ZOOL 401

Terrestrial Vertebrates

3 Credits

This course examines the evolution and natural history of amphibians, birds, reptiles, and mammals in terrestrial environments. Topics include behavioural, morphological, and physiological adaptations. Students summarize, interpret, and present scientific literature on ecological and environmental issues of terrestrial vertebrates. The laboratory focuses on native species of Alberta.

Prerequisites: Minimum grades of C- in ZOOL 224 and one of BIOL 312, BIOL 367, or ZOOL 324.

ZOOL 452

Principles of Parasitism

3 Credits

Using an ecological approach, this course examines the relationships between parasites and their animal hosts. The structural and physiological adaptations used by parasites to successfully complete their life cycles are discussed, as well as host defensive strategies. Examples of human parasitic infections are explored. The laboratory emphasizes parasite morphology, life cycles, behaviour, systematics, and evolution.

Prerequisites: A minimum grade of C- in ZOOL 250.