

Course Philosophy and Pedagogy – Most importantly: I am here to help you!

Biological Sciences 102 – Animal Biology

Biological Sciences 102 - Animal Biology has the following primary goals as an introductory biology course focused on zoology for Biological Sciences Majors:

- Discuss and learn fundamental topics critical to a comprehensive understanding of the biological sciences. These topics include ecology, basic biochemistry, cell biology, genetics, physiology and evolution.
- Discuss and learn key events and major changes that have occurred during the history of life on Earth.
- Discuss and learn about the evolution and adaptations of the diverse array of animals on Earth.
- Understand how very small detailed concepts of zoology relate to the bigger integrated picture of the study of life.

These main goals and the required information and data covered in the course are determined by the campus approved Student Learning Outcomes (SLOs) and Course of Study Outline (COSO) curriculum which has been approved by the faculty of the Department of Biological Sciences and SBCC and has been articulated for transfer with other colleges and universities.

To meet these goals the course is organized as follows:

LECTURES

The lecture sequence is essentially comprised of three major parts in sequence (about 1/3 of the lectures are dedicated to each of these three major areas of study):

1. **Fundamental concepts** critical to an understanding of all of the biological sciences including: atoms, biomolecules, basic biochemistry, cell structure and function, cell respiration and metabolism, basic molecular biology, genetics, principles of evolution, speciation and principles of ecology. While the course is Animal Biology it is also an introductory biology course and you must understand these foundational concepts in order to learn and comprehend later course topics.
2. **Phylogenetic review** of the evolution, adaptations, anatomy, physiology, ecology and behavior of **invertebrate animals**.
3. **Comparative review** of the evolution, adaptations, anatomy, physiology, ecology and behavior of **vertebrate animals** with an emphasis on the similarities and differences in the various organ systems.

LABORATORIES

Labs involve much “hands-on” learning. Labs will occur in the following logical sequence:

1. **Introductory zoological principles** including microscopy, evolution, cell biology, taxonomy, systematics, development and ecology (the first 5 labs).
2. A **standard zoological survey** of the evolution and adaptations of animals in phylogenetic order. This will provide a framework for understanding many of the similarities and differences between the various animal phyla (most of the labs).
3. A **dissectional review** of vertebrate anatomy and physiology (vertebrate labs near end).

The oral lab presentation and two lab practica will allow you to showcase your knowledge of principles learned in lab and lecture.

You are not expected to (nor will you) immediately understand all of the course information and how the various concepts are integrated. Your success is primarily determined by the amount of time you spend with the material and your study habits. For most students, a more comprehensive understanding of the topics presented occurs as the course progresses such that most students have a greater appreciation for the above pedagogy employed as well as a detailed bigger picture view of the animal world.