

# BI 213 : PRINCIPLES OF BIOLOGY

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## Transcript title

Principles of Biology

## Credits

5

## Grade mode

Standard letter grades

## Contact hours total

70

## Lecture hours

40

## Lab hours

30

## Prerequisites

BI 211.

## Description

Examines evolutionary biology as well as animal diversity and systematics, morphology and physiology. Designed for majors in life sciences. This course includes animal dissection.

## Learning outcomes

1. Construct phylogenies using various traits and employ them to explore the evolutionary relationships among taxonomic groups.
2. Explain how mutation and genetic recombination contribute to phenotypic variation in a population and predict how abiotic and biotic selective pressures can alter those populations over space and time.
3. Explain how evolutionary, developmental, and environmental processes influence the evolution of structures, functions, and behaviors that impact fitness.
4. Compare and contrast solutions to shared homeostatic challenges across various forms of life.
5. Explain how structure relates to physiology and transfer these concepts to a new situation.
6. Apply quantitative skills to biological problems.

## Content outline

1. Evolutionary Mechanisms
2. Evolutionary Development
3. Speciation
4. Phylogeny construction and use
5. Animal Origins
6. Protostome Animals
7. Deuterostome Animals
8. Chordates and Vertebrates
9. Animal Reproduction and Development
10. Animal Water and Electrolyte Balance
11. Animal Nutrition
12. Animal Gas Exchange and Circulation

13. Animal Movement
14. Behavioral Ecology

## Required materials

Textbook (same for all three Principles of Biology courses), access to a computer with internet. Most assignments and quizzes are Blackboard based.

## Grading methods

Grades are determined through unit and final exams, lecture-based assignments, laboratory assignments (including research reports) and quizzes.

## General education/Related instruction lists

- Science Lab