

# BI 222 : PRINCIPLES OF BIOLOGY: ORGANISMS

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## Transcript title

Principles of Bio: Organisms

## Credits

5

## Grading mode

Standard letter grades

## Total contact hours

70

## Lecture hours

40

## Lab hours

30

## Prerequisites

BI 221.

## Course Description

Introduces fundamental biological concepts and theories about plant and animal physiology, evolution, structure and function, transformation of energy, and matter and systems at an organismal level.

## Course learning outcomes

1. Explain how cells detect and respond to environmental changes (internal and external) and how cell-cell communication and response varies for single-celled, colonial and multicellular organisms.
2. Predict the relationship between structure and function in novel situations.
3. Describe how biological systems detect and respond to different internal/external environmental conditions through feedback.
4. Compare and contrast solutions to shared homeostatic challenges across various forms of life.

## Content outline

1. Cell Metabolism
2. Cell Signaling
3. Transitions to Multicellularity
4. Plant Form and Function
5. Plant Nutrition
6. Transport in Plants
7. Plant Signaling
8. Plant Immunity
9. Animal Form and Function
10. Animal Nutrition and Digestion
11. Animal Circulation
12. Animal Gas Exchange
13. Animal Osmoregulation and Excretion

14. Animal Immune System
15. Animal Nervous System
16. Animal Support and Muscular Systems

## Required materials

Textbook (same for all three Principles of Biology courses), access to a computer with internet.

## General education/Related instruction lists

- Science Lab