# **BI 222Z : PRINCIPLES OF BIOLOGY: ORGANISMS**

### 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 221Z.

#### **Course Description**

Explores fundamental biological concepts and theories about the structure and function of diverse organisms (including plants and animals), evolution and development, transformation of energy and matter, and body systems at a multicellular organismal level. Intended for science majors.

## **Course learning outcomes**

 Apply the iterative process of science to generate and answer biological questions by analyzing data and drawing conclusions that are based on empirical evidence and current scientific understanding.
Use evidence to develop informed opinions on contemporary biological issues and explain the implications of those issues on society.
Explain how morphology relates to physiology across diverse organisms.

4. Describe how biological systems detect and respond to different internal/external environmental conditions through feedback.

 Compare and contrast strategies for achieving homeostasis.
Explain how developmental and environmental processes influence the evolution of structures, functions, and life cycles across diverse organisms.

# **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