

INSTITUTE FOR SCIENCE AND MATHEMATICS
Biology, Structure and Function, 2022/2023
Instructor: Dr. M.E. Donaldson

Syllabus

**Fall 2022: Cell Biology, Human
Anatomy and Physiology**

1. Hierarchical organization of living systems
2. Macromolecules: the chemistry of living Systems
2. DNA: The Regulation of Life
3. Heredity: The Continuity of Life
4. Design and Function of Cells
4. Bones and Muscles
5. The Nervous System
6. Nutrition and Digestion
7. Circulation and Respiration
8. Integumentary, Excretory and Endocrine Systems
9. Disease and the body's Immune System

Spring 2023: Botany and Zoology

1. Flowering Seed Plants
2. Structure and Function of Leaves
3. Flowers, Fruits and Seeds
4. Stems and Roots
5. Variety in the World of Plants
6. Mammals
7. Birds
8. Reptiles and Amphibians
9. Fish
10. Arthropods
11. Variety in the World of Invertebrates
12. Populations, communities and ecosystems

Grading*

Homework 50%

- Typed lecture notes (due at the beginning of each class period)
- Worksheets and study questions
- Lab write-ups

Participation 10%

- Class discussions
- Lab exercises

Tests/quizzes 40%

Text: Biology. S. Robinson (Ed). CK-12 Foundation, 2011. Electronic Text available at:
www.scimathinstitute.org/texts/biology.pdf

Optional: Modern Biology Student Edition (Hardcover), by A. Towle

Cost \$395/semester

* Policies regarding work.

- 1) Work is to be handed in at the beginning of the class period. Work turned in after this is considered late. Late-work will be accepted up to the beginning of the next class period for half credit. After that the work is considered a zero.
- 2) Extra credit will only be considered for those who hand in their regular work.
- 3) Make-up work must be completed within one week upon return from an absence.