BI 212 General Biology II: Organisms

A class covering plant and animal physiology and development with an evolutionary perspective and a focus on the experimental data we use to build a scientific worldview.

Summer 2016 Syllabus

Instructor: Hannah Wilson email: hwilson1@uoregon.edu

GTF: Lisa May email: lmay@uoregon.edu

GTF: Graham Bailes email: gbailes@uoregon.edu

TA: Kyle Haggerty email: khaggert@uoregon.edu

TA: Meagan Barnes email: mbarnes7@uoregon.edu

Course Overview

The purpose of this class is to invite students to join the scientific community in our quest to use experimental data to increase our understanding of how life works. This course is about plant and animal physiology and development. We study the constraints set by geometry, the environment, and natural laws that dictate what organisms must accomplish in order to survive and reproduce. We study the forces and machinery that allow movement across membranes, enzyme regulation and kinetics, differential gene expression, and mechanisms of cellular computation and perception. We generate models of systems that organisms use to create homeostasis, which is an internal environment in which their individual cells can participate optimally in the process of meeting the challenges of life on earth. We also study how cells manage to take on specific and unique roles in the organism, which is the study of developmental biology.

Students taking the course will learn how to carry out epistatic analyses of various biological pathways and to interpret and generate complex graphical representations of data. Students propose, design, and conduct experiments on the physiology of long-range transport in plants or animals. They analyze the data they generate and write a scientific paper describing their work. This course is part of the introductory biology sequence, and has as a prerequisite Bi211. This course is itself a prerequisite for Biology 214 (but not 213) and for the introductory human physiology sequence.

Course Prerequisite

The prerequisites for Bi 212 are C-, P, or better in Bi 211 and one term of Chemistry (111 or higher).