

BIOL-UA 11 Principles of Biology I

Instructors:

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Course Description:

Primarily for science majors and pre-health students. This 4 credit course acquaints students with the molecules of life, cell metabolism, and division. It also covers the molecular basis of gene action, organismal development and physiology. This course includes lecture and recitation components; there is no laboratory component. A separate 1 credit laboratory course (BIOL-UA 123) is offered during Spring semester and Summer session II.

Co-requisite:

General Chemistry I and Laboratory (CHEM-UA 125) or
Advanced General Chemistry I and Laboratory (CHEM-UA 127)

Textbook and Required Materials:

Campbell Biology 12th Edition, by Urrey et al. hard copy or e-book
iClicker or iClicker *REEF*. (The use of an iClicker is required for participation in the lecture part of the course. iClickers purchased for use in General Chemistry can be used in Principles of Biology)

Grading:

Midterm exam 1	17%
Midterm exam 2	17%
Midterm exam 3	17%
Optional final exam	Replaces lowest midterm exam score
Quizzes	11%
Homework assignments	24%
Participation in recitation and lecture	14%

Topics:

Molecules and metabolism
Water and the molecules of life
Cells
Cellular metabolism
Respiration and fermentation
Photosynthesis
DNA replication
Mitosis and the cell cycle
Cellular information flow
Chromosome structure
Meiosis and Mendel
Prokaryotic and eukaryotic transcription
Translation
Signaling, transduction
Gene regulation in development



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Cellular and organismal homeostasis
Stem cells and tissue homeostasis
Nutrition and the digestive system
Osmoregulation and excretion
Circulation and gas exchange
The immune system
Neurons and the nervous system
Behavior
Animal and plant reproduction