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, chromosomal structure, genetic inheritance, and evolution. 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:
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:
Exam 1 25%
Exam 2 25%
Exam 3 25%
11 recitation assignments 20%
Oral participation in recitation 5%

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 transcription
Translation
Eukaryotic transcription
Signaling, transduction
Gene regulation in development
Modern experimental methods
Heredity and evolution
Principles of genetics
Genes on chromosomes
Population genetics
Mutation and selection
Speciation and the history of life