

BIOL-UA 123 Principles of Biology Lab

Instructor:

Barbara Akum

Course Description:

In this introductory lab, you will be exposed to different approaches in modern biology. Each may introduce a model system or a field of study. This lab can help frame your interests and your further study within the Biology Department at NYU. You'll be pushed to study living organisms at all levels, from their genes and molecules, to their organismal phenotypes, to how organisms interact in communities and with abiotic factors. Because of the scope of the lab, two framing principles are the levels of organization – from the molecular to the ecological – and the techniques used to study each level, and model organisms that are widely used in research labs to understand particular systems.

Pre-requisite:

Principles of Biology I (BIOL-UA 11)

Co-requisite:

Principles of Biology II (BIOL-UA 12)

Textbook and Required Materials:

Campbell Biology 11th Edition

Grading:

Quizzes (and final exam)	36%
Data figures	21%
Homework	29%
Class participation	14%

Topics:

PTC SNP and human genetics

DNA extraction, PCR, restriction digest, gel electrophoresis

Animal phylogeny building by sequencing

DNA extraction, PCR, gel electrophoresis, sanger sequencing, sequence analysis and phylogeny building

C.elegans gene expression and development

RNAi and C. elegans manipulation

Plant genetics and development

Protocol development, data collection and analysis

Urban ecology

Data collection, hypothesis generation, statistical analysis