Syllabus

BIO 241 - Laboratory in Genetics

General Information

Date November 25th, 2019
Author Trevor Johnson-Steigelman
Department Science and Technology
Course Prefix BIO
Course Number 241
Course Title Laboratory in Genetics

Course Information

Catalog Description A laboratory offering to compliment BIO 240. This course provides a variety of laboratory experiences including classical, morphological, and molecular genetics.
Credit Hours 1
Lecture Contact Hours 0
Lab Contact Hours 3
Other Contact Hours 0
Grading Scheme Letter

Prerequisites

None

Co-requisites

BIO 240

First Year Experience/Capstone Designation

This course DOES NOT satisfy the outcomes applicable for status as a FYE or Capstone.
This course is designated as satisfying a requirement in the following SUNY Gen Ed category
None

Institutional Learning Outcomes Addressed by the Course
Vitality, Inquiry, Perseverance, and Interconnectedness

Course Learning Outcomes

1. Utilize lab protocols for extraction, manipulation and analysis of DNA.

2. Construct laboratory experiments to investigate a scientific claim.

3. Communicate findings of scientific in both written and oral formats.

Outline of Topics Covered

- Experimental design and reagent ordering
- Laboratory solution preparation
- Chromosomal DNA preps
- Agarose gel analysis of DNA
- Plasmid preps
- Transformation experiments
- Restriction enzyme digestion and modification
- DNA cloning
- The Lac operon and blue white selection
- Beta-galactosidase assays
- Fruit fly crosses and inheritance
- Mutagenesis
- Polymerase chain reaction
- Microarray analysis