



Syllabus

BIO 240 - Principles of Genetics

General Information

Date October 12th, 2022

Author Trevor Johnson-Steigelman

Department Science and Technology

Course Prefix BIO

Course Number 240

Course Title Principles of Genetics

Course Information

Catalog Description A course designed to introduce the student to the aspects of modern genetics. Topics will include: gene structure and function, Mendelian genetics, gene expression, recombinant DNA technology, population genetics with attention given to human aspects and applications.

Credit Hours 3

Lecture Contact Hours 3

Lab Contact Hours 0

Other Contact Hours 0

Grading Scheme Letter

Prerequisites

BIO 121 or BIO 171

Co-requisites

BIO 241

First Year Experience/Capstone Designation

This course **DOES NOT** satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed category

None

FLCC Values

Institutional Learning Outcomes Addressed by the Course

Inquiry and Interconnectedness

Course Learning Outcomes

Course Learning Outcomes

1. Examine the fundamental molecular processes in prokaryotic and eukaryotic cells.
2. Develop solutions to genetics problems related to modes of inheritance.
3. Integrate the fundamental molecular genetics concepts with biotechnology applications.
4. Synthesize current genetics research into a written piece of scientific journalism.

Outline of Topics Covered

DNA structure
Chromosome structure and organization
DNA replication in prokaryotes and eukaryotes
Transcription prokaryotes and eukaryotes
Translation and proteins prokaryotes and eukaryotes
Mutations and DNA repair
Mendelian Genetics
Advanced Genetics: Extensions of Mendelian Genetics
Inheritance and Hereditary Diseases
Bacterial genetics
DNA biotechnology
Cancer genetics and the cell cycle
Population genetics
Current topics in the field of genetics