

**BIOL 371 Principles of Genetics**

**Credit Hours:** 4

**Scheduled hours per week**

Lecture: 3

Lab: 3

Field

Experience:

**Catalog Course Description:** Introduction to genetic principles including common terms used in genetics, basic concepts (DNA structure and function, Mendelian genetics, genetics of eukaryotes and prokaryotes, recombinant DNA technology), and practical experience in techniques used in genetic research.

**Pre-requisites:** BIOL 101/103 and 102/104; CHEM 115

**Co-requisites:** None

**Course Learning Outcomes (CLO):**

1. Describe Mendel's rules on inheritance, and the notable exceptions to Mendelian inheritance.
2. Define and use terminology used in genetics.
3. Solve problems of inheritance.
4. Describe the structure, function and replication of DNA, and the enzymes involved.
5. Describe the processes of transcription and translation and their regulation.
6. Describe the nature of mutations and their role in cancer development.
7. Perform lab techniques used in modern genetics research.

**CLO Assessment Methods:**

- Direct methods - Lab Activities, Tests, Quizzes, Written papers
- Indirect methods – course evaluations

**Topics to be studied:**

- Mendelian inheritance
- Exceptions to Mendelian inheritance.
- Prokaryotic and eukaryotic gene mapping
- DNA structure, function and replication
- Sex determination in animal model systems
- Gene expression
- Gene expression regulation
- Biotechnology
- DNA sequencing
- Genomics
- Population genetics

**Relationship of Course to Program Learning Outcomes (PLO) or Institutional Learning Outcomes:**

Check if approved as:  Foundational Learning Course     Reinforcement Learning Course

**Special requirements of the course:**

None

**Additional information:**

None

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