

# BIO 215 - GENETICS

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## Course Description

A comprehensive treatment of classical genetics will be covered in addition to an in-depth study of molecular genetics, research techniques and applications of recombinant DNA technology. A major emphasis will be on the current results of genetic research as it applies to the molecular mechanisms of inheritance, and other topics such as gene therapy, cloning stem cell research and genetically modified organisms. Population genetics will also be covered. Group 1 course.

## Credit Hours

3

## Contact Hours

3

## Lecture Hours

3

## Required Prerequisites

Completion of any 100-level BIO course.

## Recommended Prerequisites or Skills Competencies

ENG 111, MTH 111

## General Education Outcomes supported by this course

Quantitative Reasoning

## Course Learning Outcomes

### Knowledge:

- Illustrate examples of how the diversity of life has changed over time through genetic mutations and inheritance (evolution).
- Recognize that the basic structures of nucleic acids and proteins define the functions of those molecules (structure and function).
- Recognize the influence of genetics on the control of the growth, development and behavior of organisms (information flow, exchange and storage).
- Predict the ways in which living things are interconnected and interact with genetic material (systems).

### Application:

- Examine experimental techniques (process of science).
- Interpret data from primary and secondary sources (quantitative reasoning).
- Apply models and simulations to complex systems (modeling and simulation).

### Integration:

- Link the impact of various disciplines and subdisciplines to and within the field of biology (interdisciplinary nature of science).

### Human Dimension:

- Take responsibility for applying ethical principles in relation to the nonhuman world.

- See oneself as a positive contributing member of a team (be a good team member).

### Caring - Civic Learning:

- Get excited about a particular field or aspect of biology.
- Recognize the value the study of biology has to society (understand relationships between science and society).

### Learning How to Learn:

- Self monitor their own engagement in relation to performance on assessments.
- Take responsibility for their own learning.