



MONROE COUNTY
COMMUNITY COLLEGE

Course Outcome Summary

Standard Course

BIOL 264 Fundamentals of Genetics

Course Information

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| Division | Science/Mathematics |
| Contact Hours | 90 |
| Theory | 45 |
| Lab Hours | 45 |
| Total Credits | 4 |

Prerequisites **BIOL 151 Biological Sciences I**

Course Description

This course introduces the principles of the transmission of inherited characteristics and the underlying molecular mechanisms of the regulation of expression of genetic information. Topics include: classical genetics, molecular genetics, biotechnology and genetic engineering, genetics of cancer, and population genetics.

Course Outcomes

In order to evidence success in this course, students will be able to:

1. Explain the contributions of the field of genetics to science and society.
2. Explain how the physical and chemical properties of DNA account for its role as the genetic material in living organisms.
3. Describe specific processes used by prokaryotic and eukaryotic organisms to transmit genetic traits.
4. Explain the genetic basis for human hereditary diseases using various sources of genetic information, such as, karyotypes, chromosome maps, or DNA sequences.
5. Describe modes of regulation of gene expression in prokaryotic and eukaryotic organisms.
6. Analyze data from genetic crosses to determine patterns of inheritance of genetic information in living organisms.
7. Explain the role of mutations in genetic variation and evolution.
8. Implement appropriate classical and molecular genetic tools to analyze genetic processes in the laboratory.

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