Metropolitan State University

BIOL 304 : Molecular Biology

A. Course Description

Credits: 5

Prerequisites: BIOL 111 General Biology I AND BIOL 112 General Biology II AND CHEM 111 General Chemistry I AND CHEM 112 General Chemistry II AND MATH 115 College Algebra OR BIOL 111 General Biology I AND BIOL 112 General Biology II AND CHEM 111 General Chemistry I AND CHEM 112 General Chemistry II AND MATH 120 Precalculus

Lab Hours/ Weeks: Corequisites: None

MnTC Goals: None

This course covers molecular biology, the study of genetic expression at the molecular level-including transcription, translation, and DNA replication emphasizing structure and function, and focusing on how molecular lab techniques elucidate the genetic mechanisms of the cell. Lab includes recombinant DNA, gel electrophoresis, PCR and sterile technique. Intended for biology majors.

B. Course Effective Dates: 12/17/2006 - 05/04/2011 05/05/2011 - Present

C. Outline of Major Content Areas:

See Course Description for major content areas.

D. Learning Outcomes (General)

1. Design, propose, conduct, interpret, and present the results of an independent laboratory or field experiment in this subject area.
2. Explain and apply scientific knowledge in molecular biology, both theoretical and experimental, at the upper division level.
3. Read and interpret primary scientific literature in molecular biology.
4. Apply this experience with research methods in molecular biology at the level necessary for success in senior undergraduate research.
5. Demonstrate quantitative reasoning skills and competency with arithmetic, algebra, and statistics at a level appropriate for graduates of a bachelor's degree program in biology.
6. Recall, explain and apply the concepts, knowledge and vocabulary of molecular biology at the level necessary for success in graduate study in this field.

E. Learning Outcomes (MN Transfer Curriculum)

This contains no goal areas.

G. Special Information
Note: Enrollment limited to Biology, Biochemistry and Life Science Teaching majors only, except by instructor permission. First day attendance required except by instructor permission.