

Bemidji State University

BIOL 3074: Molecular Techniques

A. COURSE DESCRIPTION

Credits: 2

Lecture Hours/Week: *.*

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This is a hybrid lecture and lab-based course and is an introduction to several common molecular-based techniques. Students will learn basic pipetting, protein assays, electrophoresis, PCR, and other molecular genetic techniques. Prerequisite(s): BIOL 1400, BIOL 2360, CHEM 2211, CHEM 2212; or consent of instructor.

B. COURSE EFFECTIVE DATES: 08/27/2018 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. The course is an exploration into basic lab techniques that are requisite to more advanced study and research in the BCMB program. As a foundational course, the basic lab techniques represent an essential skill set that will familiarize students with concepts related to analytical measurements, basic spectroscopy, macromolecular electrophoresis techniques, and specialized techniques in nucleic acid manipulation.

D. LEARNING OUTCOMES (General)

1. become proficient in basic lab equipment handling and manipulation.
2. demonstrate an understanding of basic lab techniques, including protein and nucleic acid measurements, electrophoresis techniques and principles, polymerase chain reactions, etc.
3. gain a practical understanding on how the Central Dogma of Molecular Biology is embedded into molecular biology experiments.
4. implement effective lab notebook practices.
5. recognize common sources of error related to specific assays.
6. solve basic lab math related to concentrations and solution preparation.
7. understand the strengths and weaknesses of standard curves.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted