

University of Arkansas - Fort Smith
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General Syllabus

BIOL 4801 Cell and Molecular Biology Laboratory

Credit Hours: 1

Lecture Hours: 0

Laboratory Hours: 3

Prerequisite or corequisite: BIOL 4803 Cell and Molecular Biology

Effective Catalog: 2018~2019

I. Course Information

A. Catalog Description

Exploration of processes used in experimental cell and molecular biology including cell transformation, gene cloning and organelle isolation.

II. Student Learning Outcomes

A. Subject Matter

The student who completes this course will be able to:

1. Conduct cellular and molecular assays including
 - a. Polymerase chain reaction.
 - b. Biochemical assays.
 - c. Electrophoresis.
 - d. Nucleic acid isolation.
 - e. Cellular transformations.
 - f. Plasmid isolations.
 - g. Serological assays.
2. Design and conduct scientific experiments regarding cellular and molecular biology.
3. Evaluate cellular and molecular procedures and protocols.

B. University Learning Outcomes

Analytical Skills

Critical Thinking Skills: Students will use critical thinking skills to identify problems/issues and develop solutions/analysis. Students will calculate percentages and perform statistical analyses of data collected.

Communication Skills (written and oral)

Students will present oral presentations to the class and answer questions pertaining to their research by their audience.

Ethical Decision Making

Students will conduct themselves in an ethical manner and evaluate ethical considerations during discussions of molecular research activities common to the discipline of cell biology.

Global and Cultural Perspective

Students will consider and evaluate procedures and ideas common to cell biology in terms of cultural beliefs.

III. Major Course Topics-

- A. Chemistry Of The Cell
- B. Macromolecules
- C. Cellular Organization And Organelles
- D. Membranes And Membrane Transport
- E. The Cell Cycle
- F. Gene Expression And Regulation