

BIOCHEMISTRY AND MOLECULAR BIOLOGY, B.S. (BERKS)

Begin Campus: Any Penn State Campus

End Campus: Berks

Program Learning Objectives

- **Collaboration and Communication:**
 - Students will be able to:
 - demonstrate the ability to work in teams to solve biochemical problems
 - communicate in a variety of formal and informal ways to discuss biochemical data
 - **Core Concepts:**
 - Students will be able to:
 - trace energy/matter transformation, storage, and mobilization in biological systems
 - explain how genetic information is exchanged and stored
 - recognize how changes in biological structures can have varying effects on function
 - describe how evolutionary processes are an integral part of the molecular life sciences
 - explain examples of how organisms maintain cellular and molecular homeostasis
 - **Process of Science:**
 - Students will be able to:
 - develop a hypothesis, design and conduct appropriate experiments
 - analyze and interpret data using appropriate quantitative modeling and simulation tools
 - keep an accurate laboratory notebook
 - participate in the peer review/revision process
 - **Quantitative Reasoning and Data Science:**
 - Students will be able to:
 - apply basic quantitative competencies such as algebra, probability, statistics, unit conversions, and fundamental biological equations
 - organize, summarize, and interpret quantitative data
 - find and analyze data from large databases
 - **Science and Society:**
 - Students will be able to:
 - explore the impacts of scientific research on society and how society influences/relies on research to inform decision-making
 - evaluate the ethical implications of biochemical research
 - recognize ethical issues in a variety of settings
 - **Scientific Evidence Evaluation:**
 - Students will be able to:
 - discriminate among scientific claims presented in a variety of sources based on the strength of evidence
 - find appropriate published scientific literature
- analyze and critically evaluate data/conclusions from the scientific peer-reviewed literature