Department: Chemistry

Program Name: Biotechnology

Program Level: Undergraduate

College: Arts and Sciences

Program: Major

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Title: Professor and Department Chair

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Program Outcomes

Outcome 1: Will be able to identify and understand the core concepts of biotechnology in cell biology, biochemistry, genetics, molecular biology, and microbiology.

   a. Cell biology
   b. Biochemistry
   c. Genetics
   d. Molecular Biology
   e. Microbiology

Outcome 2: Will be able to perform laboratory skills essential to a variety of laboratory environments.

   a. Gel electrophoresis
   b. Protein purification
   c. High performance liquid chromatography
   d. Polymerase chain reaction amplification of DNA
   e. Sterile technique

Outcome 3: Will be able to articulate ethical principles regarding the use of biotechnology.

Outcome 4: Will be able to locate, understand, analyze, and communicate published primary research literature.

   a. Will be able to use relevant databases such as PubMed and Reaxys to locate the literature
b. Be able to identify the author’s hypothesis
c. Be able to critically evaluate to published data
d. Will be able to communicate information in a clear and organized manner using appropriate technology

**Outcome 5:** Will be prepared to work safely in a biotechnology related laboratory.

a. Recognize chemical and laboratory hazards
b. Assess the risk of the involved hazards
c. Minimize the risk of laboratory procedures
d. Prepare for possible emergency situations

**Outcome 6:** Will be able to design and perform an original research experiment.

a. Define the question or problem
b. Develop a hypothesis
c. Design an experiment to test the hypothesis
d. Collect data
e. Analyze the experimental results to objectively determine if they support the hypothesis
f. Communicate the results of their research