Student Learning Outcomes - B.S. degree programs in Life Science Department

Biology

Upon completing the Biology degree, graduates will be able to:

- Design and/or conduct investigations to test hypotheses by applying the scientific method.
- Critically review and communicate scientific data in a quantitative and qualitative manner via oral and written formats.
- Prepare, identify and analyze biological specimens by anatomical and dissection analyses, histology, microscopy, biochemical and molecular techniques.
- Analyze cell structure and function, molecular and biochemical processes and interactions.
- Analyze structure-function relationships and distribution of organisms by applying the theory and principles of evolution.
- Analyze and explain the flow of genetic information, basic principles on inheritance, recombination and genetic regulation.
- Evaluate both anatomical and physiological factors and their contribution to overall health and pathology.

Chemistry

Upon completing the Chemistry degree, graduates will be able to:

- Design and/or conduct investigations to test hypotheses by applying the scientific method.
- Critically review and communicate scientific data in a quantitative and qualitative manner via oral and written formats.
- Synthesize, isolate, separate, identify, quantify and characterize molecules.
- Apply the principles and techniques of analytical, inorganic, organic, biochemistry, and physical chemistry.
- Interpret data by applying principles of instrumental and statistical analysis.
- Apply molecular modeling to stereochemistry, thermodynamics, kinetics and spectroscopy.

Biotechnology

Upon completing the Biotechnology degree, graduates will be able to:

- Design and/or conduct investigations to test hypotheses by applying the scientific method.
- Critically review and communicate scientific data in a quantitative and qualitative manner via oral and written formats.
- Analyze DNA and protein function via instrumentation and recombinant DNA technology.
- Analyze and explain the principles of bioprocessing for the production of recombinant DNA-based pharmaceuticals and therapeutics.
- Evaluate the principles of genetic engineering for the production and application of transgenic plants and animals.
- Evaluate the ethical, legal, regulatory and societal impact of biotechnology.