

BIOLOGY

Bachelor of Arts and Bachelor of Science Biology Learning Outcomes

Upon successful completion of the B.A. and B.S. Programs in Biology, a degree recipient will be able to:

1. describe the detail the major unifying themes of biology, such as evolution, energy flow and transformation, homeostasis, genetic information storage and utilization, structure-function relationships, and hierarchies of organization;
2. apply scientific reasoning to generate and test hypotheses by designing and executing experiments using appropriate methods in the laboratory or in the field;
3. analyze and interpret quantitative biological data;
4. communicate scientific information in a variety of written and oral formats;
5. discuss the relevance of scientific research to society from a historic and a modern perspective, including the ethical implications of scientific research and of new technology; and
6. find, read, understand, critically evaluate, summarize, and use scientific information.

Master of Science Biology Learning Outcomes

1. Critically read, comprehend, and summarize original research papers in biology
2. Write in a variety of scientific formats, including manuscript describing experimental results, thesis, grant proposals, conference abstract, and literature review.
3. Apply appropriate statistical analyses to experimental design and experimental results
4. Make oral presentations in acceptable formats describing information in the scientific literature and describing personal research results.
5. Apply the scientific method to answer questions in biology through the design and conduct of hypothesis-driven experimental research projects.
6. Demonstrate a thorough and sophisticated knowledge base in biology and describe in detail the current knowledge in at least one specialized field of the biological sciences.
7. Defend the thesis in a seminar setting.
8. Demonstrate responsible ethical and professional conduct related to biology in all facets of their education.
9. Communicate scientific concepts and issues to a general audience.