Biology Undergraduate Program Student Learning Outcomes

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

1. demonstrate a solid knowledge base in the following central areas of biology,
   - biodiversity
   - cell biology
   - ecology
   - evolution
   - genetics
   - physiology
   - one or more elective areas
   - related areas of inorganic and organic chemistry, physics, and mathematics;

2. describe in 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;

3. apply the scientific method, including the roles of inductive and deductive logic, and the applications and limitations of the scientific method, to design and evaluate experiments;

4. generate hypotheses on the basis of observation and design experiments using appropriate technology to test these hypotheses in the laboratory and in the field;

5. analyze and interpret quantitative biological data using statistical methods;

6. communicate scientific information through written work in a variety of formats, and through oral presentation

7. discuss the relevance of scientific research to society from a historic and a modem perspective, including the ethical implications of scientific research and of new technology; and

8. find, read, understand, critically evaluate, summarize, and use information in the scientific literature.

Graduates of the B.S. program should also be able to:

9. demonstrate extensive depth of knowledge in at least one area of specialization in modern biology through coursework; and

10. demonstrate advanced and sophisticated laboratory skills in at least one area of specialization in modern biology through completion of laboratory coursework or through completion of a research project.