Biomedical Sciences, B.S.

Learning Outcomes

Graduates of the biomedical sciences program will achieve the following.

• Foundational Knowledge: Comprehension of Fundamental Principles and Concepts in the Natural and Social Sciences

  Graduates will be able to:
  - integrate across the natural and social sciences;
  - apply foundational knowledge and conceptual frameworks to biomedicine;
  - recognize the consequences of evolutionary history in the understanding of human biology and disease; and
  - evaluate new information reported in the news and/or in scientific publications against prior knowledge.

• New Discovery: Scientific Reasoning and Experimental Process in Biomedicine

  Graduates will be able to:
  - perform basic laboratory procedures, including correct operation of devices;
  - formulate questions about natural processes based on current knowledge;
  - construct a hypothesis to guide experimental enquiry;
  - design experiments, identifying variables of analysis and controls for error;
  - consider appropriate strategies or technologies applicable to investigate a novel problem;
  - collect, organize, summarize, and interpret data;
  - analyze and evaluate experimental results to inform a hypothesis; and
  - distinguish between necessary and sufficient causes.

• Quantitative Skills: Mathematical Reasoning and Basic Numeracy Applied to Biomedicine

  Graduates will be able to:
  - perform essential mathematical operations such as unit conversions, dilutions, and molarity calculations;
  - apply mathematical concepts and rules of probability to make predictions;
  - select and apply appropriate statistical tests to determine significance of experimental results; and
  - use mathematical and/or statistical expressions to evaluate hypotheses with experimental data.

• Information Literacy: Acquisition, Analysis, and Summary of Published Biomedical Information

  Graduates will be able to:
  - locate and evaluate the relevance and credibility of information from electronic and print sources;
  - navigate and obtain relevant information from public databases;
  - recognize and appropriately cite sources of information;
  - identify questions addressed and methodologies used; and
  - assess findings reported and conclusions drawn in published scientific articles.

• Communication Proficiency: Written and Oral Presentation of Biomedical Information

  Graduates will be able to:
  - write concise scientific reports based on findings or literature searches;
  - construct visual presentations of results or findings from the scientific literature; and
  - present findings or results from the literature orally with appropriate media.