

Biomedical Sciences, BS

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 inquiry;
- 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 the 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.