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.