

Learning Outcomes

LO	Description
LO1	Demonstrate an understanding of basic fundamental biological knowledge, theories and models as a foundation for exploring biomedical sciences
LO1.1	Define and apply basic knowledge from cornerstone sciences such as cell biology, biochemistry, microbiology, genetics and physiology
LO1.2	Discuss and integrate theories from associated/related sciences such as chemistry, physics, and psychology in order to solve problems in biomedical science
LO1.3	Describe the effects of the hierarchical relationships among molecules, cells, tissues and organs and the whole organism
LO2	Demonstrate an understanding of advanced and specialized concepts, theories, models in biomedical sciences and mechanisms underlying life at the molecular, cellular and organismal level
LO2.1	Define and apply advanced knowledge of select concepts, theories and models in the central biomedical sciences such as molecular biology, immunology, genomics and proteomics
LO2.2	Discuss and integrate concepts and theories of select multidisciplinary fields such as cancer biology, biotechnology and systems biology
LO2.3	Articulate how infectious agents work, how the immune system functions to mitigate infectious diseases, and how autoimmune ailments develop
LO2.4	Explain the theory behind current key technologies and their development
LO3	Demonstrate the knowledge and technical competency to follow protocols, perform experiments, and analyze and interpret data
LO3.1	Identify and follow methodology protocols, and perform experiments effectively
LO3.2	Describe and discuss the theoretical underpinnings of methodologies and tools employed in biomedical sciences
LO3.3	Select and employ appropriate methodologies to acquire, analyse and interpret experimental data
LO3.4	Design and prepare experiments to test scientific hypothesis within the field

LO3.5	Interpret and discuss experimental data competently
LO4	Demonstrate an understanding of health and safety risks within laboratory settings, applicable safety standards and environmental and societal considerations
LO4.1	Identify and explain health and safety risks within laboratory settings
LO4.2	Apply good lab practice (GLP) and applicable safety standards to environmental and societal considerations
LO5	Demonstrate the ability to gather, summarize and interpret primary literature and scientific information. Critically evaluate published works to synthesize new questions, generate testable hypotheses and models within a societally conscientious environment
LO5.1	Gather, summarize and paraphrase primary literature and scientific information
LO5.2	Describe the application and development of key diagnostic tools within the biomedical and clinical science environment
LO5.3	Critically evaluate published works to synthesize new questions, and be able to generate testable hypotheses and models within a societally conscientious and ethical environment
LO6	Demonstrate effective communication of concepts, models, theories and methods in biomedical sciences
LO6.1	Organize and prepare written lab reports that communicate background knowledge, experimental procedures, results, interpretation and synthesis
LO6.2	Communicate effectively in written form using formats such as essays, summaries, reviews or critiques of original research literature
LO6.3	Prepare and deliver clear oral presentations that summarize, review or critique a research article or an entire topic
LO6.4	Select and employ a variety of communication tools including but not limited to illustrations, digital presentations, blogs and posters clearly and effectively
LO6.5	Develop and use appropriate communication strategies for a range of audiences
LO7	Demonstrate the ability to articulate the uses and value of their knowledge, including interdisciplinary knowledge through content relevant approaches
LO7.1	Integrate and apply knowledge from within the biomedical sciences to test hypotheses and synthesize knowledge
LO7.2	Integrate and apply knowledge from outside the discipline to test hypotheses and synthesize knowledge (for example: chemistry, computer science, mathematics, physics and engineering applications in biomedical

sciences and health)

LO7.3	Present and debate scientific knowledge taking into consideration societal relevance and ethical concerns
LO8	Demonstrate an understanding of the uses and limitations of research methodologies and tools employed in biomedical sciences and the ability to design and apply new solutions to open ended biological problems in a socially relevant way
LO8.1	Identify and critically reflect on limits to knowledge, areas of speculation and interpretation and such that we are limited in our ability to investigate phenomena that we cannot see
LO8.2	Recognize and debate the limits of scientific applications in light of current conceptions in policies, law, biotechnology, medical applications and ethical decision-making
LO9	Demonstrate the ability to identify, recognize and apply general and professional skills related to the field of biomedical sciences and related industries
LO9.1	Apply theoretical and practical knowledge to problem solving
LO9.2	Select and synthesize relevant information necessary for decision making
LO9.3	Demonstrate academic and professional integrity individually and as a team member
LO9.4	Demonstrate effective self-development skills including time management, organizational proficiencies and the ability to adapt to changing circumstances and environments