

MBIM Program Learning Outcomes

On completion of the MBIM majors or honours program, graduates will be able to:

Theme	Program learning outcomes
Disciplinary knowledge	<ul style="list-style-type: none">• Describe current consensus knowledge within microbiology and immunology disciplines by evaluating and summarizing observational, experimental and theoretical evidence.• Critically analyze scientific studies to determine whether experimental design and methods are appropriate, and conclusions are well supported, valid and reliable.• Critique evidence and integrate knowledge from other disciplines.
Applying the scientific method	<ul style="list-style-type: none">• Apply disciplinary knowledge and science process skills to formulate a testable hypothesis to address a gap in knowledge.• Research and articulate the appropriate laboratory or data science protocol to test a hypothesis given realistic time and resource constraints.• Conduct simple experiments using laboratory or data science techniques commonly used in microbiology and immunology disciplines.• Apply statistical techniques to analyze data and make informed conclusions about relationships, significance, and variability in microbiological and immunological datasets.• Apply principles of effective data visualization, tools of graphing, and data science to create and analyze effective representations of biological data.
Academic and research integrity	<ul style="list-style-type: none">• Locate, synthesize and evaluate information gathered from multiple sources, and cite resources appropriately.• Conduct research in an honest, transparent and ethical manner in adherence to relevant principles and guidelines.• Demonstrate proficient computation skills to gather, analyze, and securely store data whilst ensuring transparency and reproducibility.
Interpersonal skills and attitudes	<ul style="list-style-type: none">• Work respectfully and effectively in teams with people who have diverse backgrounds, skill sets and perspectives.• Communicate ideas, data and findings effectively using written, verbal and visual communications for scientific and lay audiences.

	<ul style="list-style-type: none">• Demonstrate self-directed learning by providing and responding to constructive feedback and reflecting on one's own learning, performance and achievements.• Develop an awareness of how microbiology and immunology impact society, including medicine, public health, and environmental sustainability.• Recognize the value of interdisciplinary thinking in addressing and solving real-world problems and articulate this as responsible citizens and scientists.
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