HONOURS BACHELOR OF SCIENCE IN TRANSLATIONAL AND MOLECULAR MEDICINE

The Bachelor of Science with Honours in Translational and Molecular Medicine (TMM) is a unique collaborative effort between the Faculty of Medicine’s researchers and its affiliated institutes. The program integrates theoretical and practical courses with e-learning, offering students an enriching educational environment and exposing them to innovative research throughout their studies. TMM offers the largest number of advanced laboratories for an undergraduate program in Canada. Students are taught by both basic scientists and clinicians, providing them with the skillsets required to perform cutting-edge biomedical research.

Program Requirements

Basis of admission: two full years of study in a BSc  60 Units
TMM 3009  Biomedical Research Laboratory  9 Units
TMM 3101  Molecular Biology and Inherited Disorders  3 Units
TMM 3102  Proteins: Structure, Functions and Diseases  3 Units
TMM 3103  Metabolic Pathways of Human Diseases  3 Units
TMM 3104  Cellular Basis of Disease  3 Units
6 course units from:  6 Units

PHS 3341  Physiology of Sensation, Regulation, Movement and Reproduction
PHS 3342  Physiological Regulation of Intake, Distribution, Protection and Elimination
TMM 3105  Immunity and Infectious Diseases
TMM 3106  Introduction to Neurobiology
TMM 3107  Introduction to high-throughput and systems biology methods relevant to diseases
TMM 3300  Selected Topics in Translational and Molecular Medicine
TMM 4012  Honours  12 Units
TMM 4950  Science Communication  3 Units
3 advanced methodology course units from:  3 Units

TMM 4910  Advanced Methods in Biomedical Research - Special Topics
TMM 4911  Advanced Methods in Biomedical Research - Cell Biology and Microscopy
TMM 4912  Advanced Methods in Biomedical Research - Biochemistry and Biophysics
TMM 4913  Advanced Methods in Biomedical Research - Nucleic Acids
TMM 4914  Advanced Methods in Biomedical Research - Flow Cytometry
TMM 4915  Advanced Methods in Biomedical Research - Epigenetics and Genomics
TMM 4916  Advanced Methods in Biomedical Research - Electrophysiology
TMM 4917  Advanced Methods in Biomedical Research - Microbiology
TMM 4918  Advanced Methods in Biomedical Research - Proteomics

9 optional course units from the list of optional courses  9 Units
6 elective course units from another faculty  6 Units
Total:  120 Units

Note(s)

1  PHI 2396 is strongly recommended.

List of Optional Courses

CMM 4350  Principles of Neurobiology  3 Units
PHA 4107  Introductory Pharmacology - Drugs and Living Systems  3 Units
PHS 4300  Pathophysiology  3 Units
TMM 3107  Introduction to high-throughput and systems biology methods relevant to diseases  3 Units
TMM 4101  Introduction to Cancer Biology  3 Units
TMM 4102  Regenerative Medicine  3 Units
TMM 4103  Metabolomics and Integrative Research Methods in Metabolic Diseases  3 Units
TMM 4104  Probability and Statistics for Molecular Medicine and Genomics  3 Units
TMM 4105  Neurological Diseases  3 Units
TMM 4106  Model Systems of Disease  3 Units
TMM 4107  Viral Pathogenesis  3 Units
TMM 4108  Bacterial Diseases  3 Units
TMM 4300  Selected Topics in Biomedical Research  3 Units
TMM 4301  Special Topics in Biochemistry  1.5 Units
TMM 4302  Special Topics in Epidemiology  1.5 Units
TMM 4303  Special Topics in Neuroscience  1.5 Units
TMM 4304  Special Topics in Infectious Diseases  1.5 Units
TMM 4910  Advanced Methods in Biomedical Research - Special Topics  1.5 Units
TMM 4911  Advanced Methods in Biomedical Research - Cell Biology and Microscopy  1.5 Units
TMM 4912  Advanced Methods in Biomedical Research - Biochemistry and Biophysics  1.5 Units
TMM 4913  Advanced Methods in Biomedical Research - Nucleic Acids  1.5 Units
TMM 4914  Advanced Methods in Biomedical Research - Flow Cytometry  1.5 Units
TMM 4915  Advanced Methods in Biomedical Research - Epigenetics and Genomics  1.5 Units
TMM 4916  Advanced Methods in Biomedical Research - Electrophysiology  1.5 Units
TMM 4917  Advanced Methods in Biomedical Research - Microbiology  1.5 Units
TMM 4918  Advanced Methods in Biomedical Research - Proteomics  1.5 Units