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
- TMM 3101 Molecular Biology and Inherited Disorders
- TMM 3102 Proteins: Structure, Functions and Diseases
- TMM 3103 Metabolic Pathways of Human Diseases
- TMM 3104 Cellular Basis of Disease

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
- TMM 4950 Science Communication

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:  84 Units

Note(s)

1 PHI 2396 is strongly recommended.

List of Optional Courses

- CMM 3350 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