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

The French immersion stream is available with this program.

Requirements for this program have been modified. Please consult the 2021-2022 calendars for the previous requirements.

Basis of admission

Two full years of study in a BSc program 60 Units

Compulsory courses at the 3000 level

TMM 3009 Biomedical Research Laboratory 9 Units
TMM 3101 Molecular Biology and Inherited Disorders 3 Units
TMM 3102 Proteins: Structure, Function and Disease 3 Units
TMM 3103 Metabolic Pathways of Human Diseases 3 Units
TMM 3104 Cellular Basis of Disease 3 Units

Compulsory courses at the 4000 level

TMM 4012 Honours Research Project 12 Units
TMM 4950 Science Communication 3 Units

Optional Courses

6 optional course units from: 6 Units

PHS 3341 Physiology of Sensation, Regulation Mechanisms, 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 3301 Introduction to Inquiry Based Research
TMM 3302 Current Topics in Precision Medicine
TMM 3902 Current Topics in Precision Medicine

3 optional course units in advanced methodology courses: 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

List of Optional Courses

CMM 3350 Principles of Neurobiology 3 Units

PHA 4107 Introductory Pharmacology - Drugs and Living Systems 3 Units

TMM 3107 Introduction to high-throughput and systems biology methods relevant to diseases 3 Units

PHS 3300 Pathophysiology 3 Units

TMM 4107 Viral Pathogenesis 3 Units

TMM 4108 Bacterial Diseases 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 4305 Biology of Aging 3 Units

TMM 4306 Molecular Imaging and Radiochemistry 3 Units

TMM 4307 Biomaterials and Tissue Engineering 3 Units

TMM 4308 Hormonal Regulation of Metabolism 3 Units

TMM 4309 Nanomedicine 3 Units

TMM 4310 Genome Instability and Chromosome Dynamics 3 Units

TMM 4311 Seminars in Translational Molecular Medicine 3 Units

TMM 4903 Advanced Methods in Biomedical Research: Experimental Models of Human Disease 1.5 Units

TMM 4904 Advanced Methods in Biomedical Research – Genome Editing 1.5 Units

TMM 4905 Advanced Methods in Biomedical Research: Stats 101 for Biomedical Research 1.5 Units

TMM 4906 Life in a Lab I 1.5 Units

Elective Courses

6 elective course units from another faculty 6 Units

Total: 120 Units

Note(s)

1 PHI 2396 is strongly recommended.
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<td>TMM 4907</td>
<td>Life in a Lab II</td>
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<tr>
<td>TMM 4911</td>
<td>Advanced Methods in Biomedical Research - Cell Biology and Microscopy</td>
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<tr>
<td>TMM 4912</td>
<td>Advanced Methods in Biomedical Research - Biochemistry and Biophysics</td>
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<td>TMM 4913</td>
<td>Advances Methods in Biomedical Research - Nucleic Acids</td>
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<td>TMM 4914</td>
<td>Advanced Methods in Biomedical Research - Flow Cytometry</td>
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<td>TMM 4915</td>
<td>Specialized Workshops in Biomedical Research - Epigenetics and Genomics</td>
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<td>TMM 4916</td>
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<td>TMM 4917</td>
<td>Advanced Methods in Biomedical Research - Microbiology</td>
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