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 (https://catalogue.uottawa.ca/archive/2020-2021/en/undergrad/honours-bachelor-science-translational-molecular-medicine/#programrequirements) calendars for the previous requirements.

Basis of admission

Two full years of study in a BSc program

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:

- PHS 3341 Physiology of Sensation, Regulation Mechanisms, Movement and Reproduction: 3 Units
- 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:

- 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 Advances Methods in Biomedical Research: Nucleic Acids
- TMM 4914 Advanced Methods in Biomedical Research: Flow Cytometry
- TMM 4915 Specialized Workshops in Biomedical Research: Epigenetics and Genomics
- TMM 4916 Advanced Methods in Biomedical Research: Electrophysiology
- TMM 4917 Advanced Methods in Biomedical Research: Microbiology

9 optional course units from the list of optional courses: 9 Units

Elective Courses

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 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

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<tr>
<th>Code</th>
<th>Course Title</th>
<th>Units</th>
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<tr>
<td>TMM 4907</td>
<td>Life in a Lab II</td>
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<td>TMM 4911</td>
<td>Advanced Methods in Biomedical Research - Cell Biology and Microscopy</td>
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