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.

Learn more about this program (https://www.uottawa.ca/faculty-medicine/translational-molecular/programs/course-sequence-bachelor-translation-molecular-medicine/)

Program Requirements

The French immersion stream is available with this program.

Requirements for this program have been modified. Please consult the 2025-2026 (http://catalogue.uottawa.ca/en/archives/) 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	Introduction to Immunology	
TMM 3106	Introduction to Neurobiology	
TMM 3107	Introduction to Genomics	
TMM 3108	Introduction to Medical Bioinformatics	
TMM 3111	Phage Hunters: Genome Annotation and Analysis	
TMM 3112	Bioinformatics for Neurodegenerative Disease	
TMM 3300	Selected Topics in Translational and Molecular Medicine	
TMM 3301	Introduction to Inquiry Based Research	
TMM 3302	Current Topics in Precision Medicine	
3 optional course units in advanced methodology courses:		3 Units
TMM 4112	Advanced Methods in Biomedical Research - Special Topics	
TMM 4116	Advanced Methods in Neural Stem Cells	
TMM 4117	Preclinical Imaging	
TMM 4518	Méthodes avancées dans la recherche biomédicale - biochimie et biophysique	
TMM 4527	Méthodes avancées dans la recherche biomédicale – Histopathologie	
TMM 4701	Sujets spéciaux en biochimie	
TMM 4903	Advanced Methods in Biomedical Research: Experimental Models of Human Disease	
TMM 4904	Advanced Methods in Biomedical Research – Genome Editing	
TMM 4905	Advanced Methods in Biomedical Research: Stats 101 for Biomedical Research	
TMM 4906	Life in a Lab I	
TMM 4907	Life in a Lab II	
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 and Immunophenotyping	
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	
TMM 4921	Advanced Methods in Biomedical Research – RNA-seq analysis	
TMM 4922	Special topics in Epidemiology	
TMM 4924	Artificial intelligence (AI) in biology and medicine	
9 optional course units from the list of optional courses		9 Units
Elective Courses		
6 elective course units from another faculty [1]		6 Units
Total:		**120 Units**

Note(s)

[1] PHI 2396 is strongly recommended.

List of Optional Courses

CMM 3350	Principles of Neurobiology	3 Units
CMM 4360	The Dynamical Brain: Experimental and Computational Approaches to Neural Networks	3 Units
PHA 4107	Introductory Pharmacology - Drugs and Living Systems	3 Units

PHS 3300	Pathophysiology	3 Units
TMM 3107	Introduction to Genomics	3 Units
TMM 4101	Introduction to Cancer Biology	3 Units
TMM 4102	Regenerative Medicine	3 Units
TMM 4103	Metabolomics and Lipidomics	3 Units
TMM 4106	Model Systems of Disease	3 Units
TMM 4107	Viral Pathogenesis	3 Units
TMM 4108	Bacterial Diseases	3 Units
TMM 4112	Advanced Methods in Biomedical Research - Special Topics	1.5 Units
TMM 4116	Advanced Methods in Neural Stem Cells	1.5 Units
TMM 4117	Preclinical Imaging	1.5 Units
TMM 4303	Special Topics in Neuroscience	3 Units
TMM 4304	Special Topics in Infectious Diseases	3 Units
TMM 4305	Biology of Aging	3 Units
TMM 4306	Molecular Imaging	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 4518	Méthodes avancées dans la recherche biomédicale - biochimie et biophysique	1.5 Units
TMM 4527	Méthodes avancées dans la recherche biomédicale – Histopathologie	1.5 Units
TMM 4701	Sujets spéciaux en biochimie	1.5 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
TMM 4907	Life in a Lab II	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	Advances Methods in Biomedical Research - Nucleic Acids	1.5 Units
TMM 4914	Advanced Methods in Biomedical Research - Flow Cytometry and Immunophenotyping	1.5 Units
TMM 4915	Specialized Workshops 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 4921	Advanced Methods in Biomedical Research – RNA-seq analysis	1.5 Units
TMM 4922	Special topics in Epidemiology	1.5 Units
TMM 4924	Artificial intelligence (AI) in biology and medicine	1.5 Units