NEUROSCIENCE HONOURS (B.SC.) (74 CREDITS)

Offered by: Science (Faculty of Science)
Degree: Bachelor of Science
Program credit weight: 74

Program Description

The Honours program is intended for students who are interested in laboratory-based research and in acquiring a foundation in each of the 3 streams of the Neuroscience Major Program (cell and molecular; neurophysiology and computational; and cognition and behaviour). Students are admitted to the program after one year in a major.

Applicants must have taken a minimum of 27 graded credits in their U1 year, must have a CGPA of at least 3.5, and must have obtained minimum grades of B+ in both NSCI 200 Introduction to Neuroscience 1. and NSCI 201 Introduction to Neuroscience 2., as well as a minimum grade of C in BIOL 200 Molecular Biology., BIOC 212 Molecular Mechanisms of Cell Function. or BIOL 201 Cell Biology and Metabolism., and CHEM 212 Introductory Organic Chemistry 1.. Additional requirements for applying are provided on the Neuroscience website: (www.mcgill.ca/neuroscience). Meeting the minimum requirements does not guarantee admission to the Honours Neuroscience program.

To graduate from the program, students must have a CGPA of 3.30 and a minimum grade of B+ in NSCI 300 Neuroethics., NSCI 400 , and NSCI 430D1 Honours Research Project./NSCI 430D2 Honours Research Project..

"First Class Honours" is awarded to students who obtain a minimum cumulative grade point average of 3.70, a minimum program GPA of 3.30, and a minimum grade of B+ in NSCI 300 Neuroethics., NSCI 400 , and NSCI 430D1 Honours Research Project./NSCI 430D2 Honours Research Project..

Degree Requirements — B.Sc.

This program is offered as part of a Bachelor of Science (B.Sc.) degree.

To graduate, students must satisfy both their program requirements and their degree requirements.

- The program requirements (i.e., the specific courses that make up this program) are listed under the Course Tab (above).
- The degree requirements—including the mandatory Foundation program, appropriate degree structure, and any additional components—are outlined on the Degree Requirements page.

Students are responsible for ensuring that this program fits within the overall structure of their degree and that all degree requirements are met. Consult the Degree Planning Guide on the SOUSA website for additional guidance.

Note: For information about Fall 2025 and Winter 2026 course offerings, please check back on May 8, 2025. Until then, the "Terms offered" field will appear blank for most courses while the class schedule is being finalized.

Required Courses (38 credits)

Note: Students who have successfully completed an equivalent of CHEM 212 Introductory Organic Chemistry 1. in CEGEP or elsewhere must replace these credits with a 3-credit elective course to satisfy the total credit requirement for Honours Neuroscience.

Expand allContract all

Course	Title	Credits
BIOC 311	Metabolic Biochemistry.	3
BIOL 200	Molecular Biology.	3
CHEM 212	Introductory Organic Chemistry 1.	4
NSCI 200	Introduction to Neuroscience 1.	3
NSCI 201	Introduction to Neuroscience 2.	3
NSCI 300	Neuroethics.	3
NSCI 400D1	Neuroscience Seminar.	.5
NSCI 400D2	Neuroscience Seminar.	.5
NSCI 430D1	Honours Research Project.	4.5
NSCI 430D2	Honours Research Project.	4.5
PHGY 311	Channels, Synapses and Hormones.	3
PSYC 311	Human Cognition and the Brain.	3
PSYC 318	Behavioural Neuroscience 2.	3

Complementary Courses (36 credits)

3 credits from:

Expand allContract all

Course	Title	Credits
BIOC 212	Molecular Mechanisms of Cell Function.	3
BIOL 201	Cell Biology and Metabolism.	3

3 credits from:

Expand allContract all

Course	Title	Credits
COMP 202	Foundations of Programming.	3
COMP 204	Computer Programming for Life Sciences.	3

3 credits from:

Expand allContract all

Course	Title	Credits
BIOL 373	Biometry.	3
MATH 324	Statistics.	3
PSYC 305	Statistics for Experimental Design.	3

3 credits from:

Note: Students who have successfully completed an equivalent to MATH 222 Calculus 3. at CEGEP or elsewhere, must replace

these credits with a 3-credit elective course to satisfy the total credit requirement for Honours Neuroscience.

Expand allContract all

Course	Title	Credits
BIOL 309	Mathematical Models in Biology.	3
MATH 222	Calculus 3.	3

3 credits from:

Expand allContract all

Course	Title	Credits
ANAT 321	Circuitry of the Human Brain.	3
BIOL 306	Neural Basis of Behaviour.	3
PHGY 314	Integrative Neuroscience.	3

21 credits should be taken from the following lists. At least 15 of the 21 credits must be taken at the 400- or 500-level.

200- and 300-level Courses

Expand allContract all

Course	Title	Credits
BIOL 202	Basic Genetics.	3
BIOL 300	Molecular Biology of the Gene.	3
BIOL 301	Cell and Molecular Laboratory.	4
BIOL 306	Neural Basis of Behaviour.	3
BIOL 307	Behavioural Ecology.	3
BIOL 320	Evolution of Brain and Behaviour.	3
BIOL 389	Laboratory in Neurobiology.	3
CHEM 222	Introductory Organic Chemistry 2.	4
COMP 206	Introduction to Software Systems.[1]	3
COMP 250	Introduction to Computer Science.[1]	3
MATH 223	Linear Algebra.	3
MATH 315	Ordinary Differential Equations.	3
MATH 323	Probability.	3
MATH 324	Statistics.	3
MIMM 214	Introductory Immunology: Elements of Immunity.	3
MIMM 314	Intermediate Immunology.	3
NEUR 310	Cellular Neurobiology.	3
PHAR 300	Drug Action.	3
PHGY 210	Mammalian Physiology 2.	3
PHGY 314	Integrative Neuroscience.	3
PSYC 213	Cognition.	3
PSYC 302	Pain.	3
PSYC 315	Computational Psychology.	3
PSYC 317	Genes and Behaviour.	3
PSYC 319	Computational Models - Cognition.	3
PSYC 342	Hormones and Behaviour.	3

[1] Students may take either COMP 206 Introduction to Software Systems. or COMP 250 Introduction to Computer Science., but not both.

400- and 500-level Courses

Expand allContract all

Course	Title	Credits
BIOL 414	Invertebrate Brain Circuits and Behaviours .	3
BIOL 506	Neurobiology of Learning.	3
BIOL 530	Advances in Neuroethology.	3
BIOL 532	Developmental Neurobiology Seminar.	3
BIOL 580	Genetic Approaches to Neural Systems.	3
BIOL 588	Advances in Molecular/Cellular Neurobiology.	3
BMDE 519	Biomedical Signals and Systems.	3
COMP 546	Computational Perception.	4
MATH 437	Mathematical Methods in Biology.	3
MIMM 414	Advanced Immunology.	3
MIMM 509	Inflammatory Processes.	3
NEUR 502	Basic and Clinical Aspects of Neuroimmunology.	3
NEUR 503	Computational Neuroscience.	3
NEUR 507	Topics in Radionuclide Imaging.	3
PHAR 562	Neuropharmacology.	3
PHGY 425	Analyzing Physiological Systems.	3
PHGY 451	Advanced Neurophysiology.	3
PHGY 513	Translational Immunology.	3
PHGY 524	Chronobiology.	3
PHGY 556	Topics in Systems Neuroscience.	3
PSYC 410	Special Topics in Neuropsychology.	3
PSYC 427	Sensorimotor Neuroscience.	3
PSYC 433	Cognitive Science.	3
PSYC 443	Affective Neuroscience.	0-3
PSYC 444	Sleep Mechanisms and Behaviour.	3
PSYC 470	Memory and Brain.	3
PSYC 502	Psychoneuroendocrinology.	3
PSYC 506	Cognitive Neuroscience of Attention.	3
PSYC 513	Human Decision-Making.	3
PSYC 514	Neurobiology of Memory.	3
PSYC 522	Neurochemistry and Behaviour.	3
PSYC 526	Advances in Visual Perception.	3
PSYC 529	Music Cognition.	3
PSYT 500	Advances: Neurobiology of Mental Disorders.	3