Psychology, Neuroscience & Behaviour

Psychology, Neuroscience & Behaviour is the scientific study of the brain and behaviour. It is a science and a practice. As scientists, experimental psychologists conduct research to help understand why people think, feel, and behave the way they do. As clinicians, counsellors, or other practitioners, psychologists apply scientific understanding towards helping individuals, institutions, and society deal with issues relating to human behaviour and happiness.

The Department of Psychology, Neuroscience & Behaviour offers both a research-intensive degree: Honours B.Sc. Psychology, Neuroscience & Behaviour degree, and a degree with a more applied focus: Honours B.A.Sc. Human Behaviour degree.

Students who graduate from the Honours B.Sc. Psychology, Neuroscience & Behaviour program are well prepared for graduate studies (both clinical and experimental), for professional studies such as medicine and teaching, for research positions in government, university or industry, and for careers in health sciences, community services, education and government. Within this degree we offer two specializations: Mental Health Specialization; and Music Cognition Specialization. Students also have the opportunity to do a combined Honours B.Sc. in Biology and Psychology, Neuroscience & Behaviour in which students merge leading-edge knowledge from both fields and in Honours Neuroscience comprising research related to neurons and nervous systems.

Students who graduate from the Honours B.A.Sc. Human Behaviour program are well equipped to enter any work environment that requires understanding the determinants of human behaviour and is an excellent preparatory degree for a range of applied certificate/diploma training. We offer two specializations within this program in partnership with Mohawk College: Autism & Behavioural Science; and Early Childhood Education. Students in the specializations graduate with both an Honours degree from McMaster University and a Graduate Certificate/Diploma from Mohawk College. For students who want the flexibility to customize their degree to focus on a subspecialty of their choice, we offer the Generalist stream. science.mcmaster.ca/pnb/undergraduate/programs

Possible careers

- Clinical Psychology
- Experimental Psychology
- Speech Pathology
- Environmental Research
- Law
- Forensics
- Teaching
- Medicine
- Research Scientist
- ABA Therapist
- Behaviour Therapist
- Respite Care
- Marketing
- Addiction Counsellor
- Human Resources
- Child Life Worker
- Policy Developer
- Science Writer

Focus of study

- Animal Behaviour
- Cognition & Perception
- Developmental Psychology
- Applied Cognition in Education
- Music Cognition
- Evolution & Social Behaviour
- Systems & Behavioural Neuroscience
- Mental Health
- Human Behaviour
- Autism & Behavioural Science
- Early Childhood Education
- Neuroscience

Examples of faculty research

- **Dr. Suzanna Becker** directs the Neurotechnology & Neuroplasticity Lab. Research involves areas such as spatial cognition, hippocampal coding and neurogenesis, episodic memory, controlled memory use, language, semantic memory, semantic priming, numerosity, auditory processing, music, Tinnitus, and hearing aids.

- **Dr. Sigal Balshine** is director of the Aquatic Behavioural Ecology Lab (ABEL). Her research takes an interdisciplinary approach and investigates the evolution of complex breeding systems, social behaviour, reproductive tactics, and decision-making in animal societies.

- **Dr. Joe Kim** directs the Applied Cognition in Education Lab, which focuses on teaching, learning and technology. Research includes understanding of cognitive mechanisms to the practical problem of instructional design and the scholarship of teaching and learning.
Level II Programs

Honours Neuroscience (Honours B. Sc.)
See Admission Note 4

Honours Psychology, Neuroscience & Behaviour (Honours B. Sc.)
See Admission Notes 1 & 2

Honours Psychology, Neuroscience & Behaviour
Mental Health Specialization (Honours B. Sc.)
See Admission Notes 1 & 2

Honours Psychology, Neuroscience & Behaviour
Music Cognition Specialization (Honours B. Sc.)
See Admission Notes 2 & 5

Honours Biology & Psychology, Neuroscience & Behaviour
(Honours B. Sc.)
See Admission Notes 1 & 3

Honours Human Behaviour
(Honours B.A.Sc.)

Honours Human Behaviour – Autism and Behavioural
Science Specialization (Honours B.A.Sc.)

Honours Human Behaviour – Early Childhood
Education Specialization (Honours B.A.Sc.)

All programs are limited enrolment. Possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Grade Point Average of at least 5.0, including admission requirements listed below.

Admission Note 1

1. Completion of either PSYCH 1F03 or 1X03 is required by the end of Level II, but PSYCH 1X03 is recommended in Level I.
2. Completion of CHEM 1A03 and one of BIOPHYS 1S03, PHYSICS 1A03, 1C03 is required by the end of Level II, however, at least one of BIOPHYS 1S03, CHEM 1A03, PHYSICS 1A03, 1C03 is required for admission. It is recommended that both CHEM 1A03 and one of BIOPHYS 1S03, PHYSICS 1A03, 1C03 be completed in Level I. Concepts from PHYSICS 1CC3 are particularly useful for understanding neuroscience, mathematical modelling, and perception. Students interested in these areas are encouraged to take PHYSICS 1C03 and 1CC3.
3. One of PHYSICS 1A03 or 1C03 is required for admission.
4. While completion in Level I is recommended, the following courses must be completed by the end of the Level II: MATH 1A03 or 1LT3, MATH 1B03, COMPSCI 1M03 or MATH 1MP3.
5. Notes for the Music Cognition Specialization:
   • Admission to the program requires Advanced Rudiments (or Grade 2 Rudiments) from the Royal Conservatory of Music (a grade of 88% or above, within the last two years), or MUSC 1003 (with a grade of at least B), or a grade of 65% or above on a qualifying music theory exam administered by the School of the Arts (SOTA).
   • One of MUSIC 1A03 or 1AA3 is required for admission, however, both are required for degree completion.
   • Students who have completed Grade 3 History (History 1) or Grade 5 History (History 3) from the Royal Conservatory of Music, with a grade of at least 70%, are not required to complete MUSIC 1AA3, and those students who have similarly obtained at least 70% on ROM Grade 4 History (History 2) are not required to complete MUSIC 1A03 either for admission to the Music Cognition Specialization or to fulfill their degree requirements.
   • Students having completed Grade 4 Theory (Harmony 4) from the Royal Conservatory of Music with a grade of 70% or better can receive advanced credit for MUSIC 1CA3 (Theory & Analysis I).

Admission Note 2

1. Students in the Specializations are required to do Placements in the spring/summer sessions between Levels II & III and III & IV.
2. Eligibility for Placements: All students in the Specializations must meet academic, social, and health requirements before they can attend a site for field placement.
3. Placements will be with agencies that have contracted in advance with Mohawk College.
4. Students are responsible for arranging their own travel to and from assigned placements.
5. All costs associated with pre-placement requirements are the responsibility of the student.

Admission Note 4

All programs are limited enrolment. Possession of the published minimum requirements does not guarantee admission. Selection is based on academic achievement but requires, as a minimum, completion of any Level I program with a Grade Point Average of at least 5.0, including admission requirements listed below.

Course List: ASTRON

Course List: BIOLOGY

Course List: BIOPHYS

Course List: CHEM

Course List: ENVIRSC

Course List: GEOG

Course List: MHF4U

Course List: MDM4U

Course List: MATH

Course List: MEDPHYS

Course List: PHYSICS

Course List: SCIENCE

See Admission Note 4

Science I Course List: ASTRON 1F03, BIOLOGY 1A03, 1M03, BIOPHYS 1S03, CHEM 1A03, 1AA3, ENVIRSC 1D03, 1G03, GEOG 1H43, 1H83, MATH 1A03, 1AA3, 1B03, 1LS3, 1LT3, 1MP3, MEDPHYS 1E03, PHYSICS 1A03, 1AA3, 1B03, 1CC3, PSYCH 1F03, 1X03, 1XX3, SCIENCE 1A03