Honours Psychology, Neuroscience & Behaviour (B.Sc.)
(Music Cognition Specialization)

Program Overview
Honours Psychology, Neuroscience & Behaviour with the Music Cognition Specialization is a multidisciplinary program that brings together science and the arts in a unique and innovative way. Students will study:

- how the auditory and motor systems interact to produce music
- how people encode and recognize music
- how music induces emotional reactions
- how musical experience and training affect brain development
- how musical training/exposure affects language, cognitive, and social abilities in both children and adults.

Students who have graduated from this program have pursued careers in such areas as psychology, music therapy, and audiology/speech pathology.

ADMISSION NOTES
1. Completion of CHEM 1A03 and one of BIOPHYS 1S03, PHYSICS 1A03, 1CO3 is required by the end of Level II. However, a least one of BIOPHYS 1S03, CHEM 1A03, PHYSICS 1A03, 1CO3 is required for Admission. It is recommended that both CHEM 1A03 and one of BIOPHYS 1S03, PHYSICS 1A03, 1CO3 be completed in Level I.
2. One of MUSIC 1A03 or 1AA3 is required for admission, however, completion of both are required for degree completion.
3. 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 RCM 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.

ADMISSION
Admission to the program requires Advanced Rudiments (or Grade 2 Rudiments) from the Royal Conservatory of Music (RCM) (with a grade of at least 80% within the last two years), or MUSIC 1C03 (with a grade of at least 75%), or a grade of at least 65% on a qualifying music theory exam administered by the School of the Arts (SOTA).

Enrolment in this program is limited and 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:

- 3 units PSYCH 1XX3 with a grade of at least B-
- 3 units from MATH 1A03, 1LS3
- 6 units BIOLOGY 1A03, 1M03
- 3 units from BIOPHYS 1S03, CHEM 1A03, PHYSICS 1A03, 1C03 (See Admission Note 1)
- 9 units from Science I Course List (PSYCH 1X03 or 1F03 must be completed by end of Level II but PSYCH 1X03 IS recommended in Level I)
- 3 units from MUSIC 1A03, 1AA3 (See Admission Notes 2 and 3)

PROGRAM NOTES
1. Entrance into MUSIC 1CC3 A/B requires Advanced Rudiments (or Grd. 2) from RCM (a grade of 80% or above, within last 2 years) or MUSIC 1C03 (at least 75%) or 65% or above on a qualifying music theory exam administered by SOTA. 
Appointments can be made with SOTA to write the exam on specific dates between February and May. The content of the exam is summarized at: http://www.humanities.mcmaster.ca/prospective/audition
2. Students who have completed Harmony 4 (Grade 4 Theory) from the RCM, with a grade of at least 70%, can receive advance credit for MUSIC 1CC3 A/B.
3. Both MUSIC 1A03 and 1AA3 must be completed for degree completion (See Admission Notes 2 and 3).
CAPSTONE COURSE LIST
MUSICCOG 4D06 A/B, 4QQ3; PNB 4D06 A/B, 4J03, 4Q03 A/B, S, 4QQ3 A/B, S; 4SC6 A/B

PSYCHOLOGY COURSE LIST
BIOLOGY 3P03, 4T03; HTH SCI 4BB3; KINESIOLOG 3E03, 4P03; LIFE SCI 3BB3, 3K03; LINGUIST 2PS3, 3C03, 3NL3; MUSIC 2MT3, 3MT3; MUSICCOG 3QQ3 A/B; all Level III & IV PNB courses; all Level III & IV PSYCH courses (except PSYCH 3AB3, 3AC3, 3AG3, 3BA3, 3CB3, 3CD3 which can only be taken as electives)

REQUIREMENTS
120 units total (Levels I to IV), of which no more than 48 units may be Level I

LEVEL I
30 units (See Admission)

LEVEL II: 30 UNITS
3 units PNB 2XA3 (Human Perception & Cognition)
3 units PNB 2XB3 (Neuroanatomy & Neurophysiology)
3 units PNB 2XC3 (Animal Behaviour & Evolution)
0 units PNB 2XT0 (PNB Tutorial)
3 units PNB 2XD3 (Integrative PNB through Scientific Writing)
3 units PNB 2XE3 (Descriptive Statistics)
3 units PNB 2XF3 (Perspectives in PNB)
3 units MUSIC 1C3 A/B (Harmony) (See Program Notes 1 and 2)
3 units MUSICCOG 2MP3 (or 2MA3) (Intro to Music Cognition)
6 units Electives (PSYCH 1X03 or 1F03, and CHEM 1A03 or one of BIOPHYS 1S03, PHYSICS 1A03, 1C03 if not completed in Level I)

LEVEL III: 30 UNITS
3 units from PSYCH Course List (PSYCH 3A03, Audition, and PSYCH 3H03, Arts & the Brain, are recommended)
3 units PNB 3RM3 (Research Methods Lab)
3 units PNB 3XE3 (Inferential Statistics)
6 units MUSIC 2CC3 A/B (Harmony), 2H03 (Analysis)
3 units MUSICCOG 3MP3 (or 3MB3) (Music Development & Performance)
12 units Electives (See Program Note 3)

LEVEL IV: 30 UNITS
6 units from PSYCH Course List
3 units MUSICCOG 4MP3 (or 4LA3) (Neuroscience of Music)
9 units 6 units from Capstone Course List and 3 units from PSYCH Course List
or
PNB 4D09 A/B (Senior Honours Thesis)
12 units Electives (See Program Note 3)

LIVE Auditory Laboratory (in the Psychology Building)
The McMaster Institute for Music and the Mind (MIMM) has a new unique research-based performance theatre and testing centre. The LIVE (Large Interactive Virtual Environment) Auditory Lab is the only facility of this exact kind in the world.
- Features a 100-seat specially constructed performance hall
- Ability to measure brain responses (dense array EEG) from several performers at a time
- Has motion capture equipment to see how musicians and dancers coordinate movements.
- Ability to measure physiological responses such as heart rate and breathing rate in audience members

Faculty Advisors:
PNB - Dr. Brown (stebro@mcmaster.ca)
PNB - Dr. Trainor (ljt@mcmaster.ca)
MUSIC - Dr. Schutz (schutz@mcmaster.ca)
MUSIC - Dr. Mitchell (amitche@mcmaster.ca)

Academic Advisor: Ann Hollingshead (hollings@mcmaster.ca)

Websites: http://mimm.mcmaster.ca/
http://www.science.mcmaster.ca/pnb/undergraduate/music-cognition-specialization.html