

Department of Psychology, Neuroscience & Behaviour (PNB)

Undergraduate Studies 2011-2012 Handbook

<http://www.mcmaster.ca/psychology>



McMaster
University 

Inspiring Innovation and Discovery

Undergraduate Studies 2011/2012 Handbook

NOTICE:

If you find any errors or omissions within this document, please feel free to email us (hollings@mcmaster.ca) and we will be sure to have the issue rectified for the next release of this handbook.

© Department of Psychology, Neuroscience & Behaviour

1280 Main Street West • Psychology Building

Hamilton, Ontario L8S 4K1

Phone 905.525.9140 x 23005

Email: hollings@mcmaster.ca

Web: <http://www.mcmaster.ca/psychology/>

TABLE OF CONTENTS

UNDERGRADUATE STUDIES	2
WHAT IS PSYCHOLOGY, NEUROSCIENCE & BEHAVIOUR (PNB)?.....	2
WHAT DO PSYCHOLOGISTS DO?	2
PNB HONOURS PROGRAMS	4
AREAS OF RESEARCH EXPERTISE WITHIN PNB.....	4
ANIMAL BEHAVIOUR.....	5
COGNITION AND PERCEPTION.....	5
DEVELOPMENTAL.....	6
EVOLUTION AND SOCIAL BEHAVIOUR	7
SYSTEMS AND BEHAVIOURAL NEUROSCIENCE	8
COMBINED HONOURS AND SPECIALIZATION PROGRAMS	9
HONOURS BIOLOGY AND PSYCHOLOGY.....	9
HONOURS (BSc & BA) PSYCHOLOGY, NEUROSCIENCE & BEHAVIOUR (MUSIC COGNITION SPECIALIZATION)	9
HONOURS (BSc) PSYCHOLOGY, NEUROSCIENCE & BEHAVIOUR (ORIGINS RESEARCH SPECIALIZATION)	9
COMBINED HONOURS PSYCHOLOGY & ANOTHER SUBJECT (BA)	9
HONOURS COGNITIVE SCIENCE OF LANGUAGE (BA) (FORMERLY HONOURS LINGUISTIC COGNITIVE SCIENCE).....	10
HONOURS ISCI WITH A CONCENTRATION IN PSYCHOLOGY, NEUROSCIENCE & BEHAVIOUR	10
B.A. PSYCHOLOGY	10
B.A./B.S.W.	10
MINOR IN PSYCHOLOGY	10
INTRODUCTORY PSYCHOLOGY, NEUROSCIENCE & BEHAVIOUR	11
SUMMARY OF LEVEL I PREREQUISITES FOR LEVEL II PNB PROGRAMS	12
PNB HONOURS PROGRAMS - LEVEL III LAB COURSES	14
PNB COURSES WITH INDIVIDUAL SUPERVISION	14
PNB INDIVIDUAL STUDY COURSES	14
PNB THESIS COURSES	15
COURSES - CHANGES EFFECTIVE SEPTEMBER 2011	16
NEW COURSES:	16
COURSE DELETIONS:.....	17
COURSES NOT OFFERED IN 2011-2012	17
PNB STUDENTS, GET INVOLVED!	18
GRADUATE SCHOOL – MA, MSC, PHD	19
CLINICAL, COUNSELING, & SCHOOL PSYCHOLOGY	20
CONTINUING EDUCATION - CERTIFICATE/DIPLOMA	21
COMMUNITY COLLEGE - CERTIFICATE/DIPLOMA	21
MCMASTER’S CAREER OFFICES, RECRUITMENT SITE, & COURSES	22
WEB SITES OF INTEREST	24

DEPARTMENT OF PSYCHOLOGY, NEUROSCIENCE & BEHAVIOUR

Website: <http://www.mcmaster.ca/psychology>

UNDERGRADUATE STUDIES

What is Psychology, Neuroscience & Behaviour (PNB)?

Psychology, Neuroscience & Behaviour (PNB) is the scientific study of brain and behaviour. It covers a wide range of topics from perception (how we see objects, process speech sounds, hear music); to cognition (how we think); to emotion and social behaviour (how we feel, how we interact with others); to psychopathology (how and why does behaviour sometimes go wrong); to development and evolution (how does the organism develop in these various domains; what is the role of genetics in development, what is the role of environment); and how the brain develops and how experience influences its development.

Psychological inquiry began with 18th C physicists, physiologists, and philosophers who attempted to discover general principles of mental functioning and to understand the basis of action and thought. In this century, experimental psychology has evolved as a separate discipline, but the influence of these historical roots remains evident in the problems that are studied and in the methods that are used.

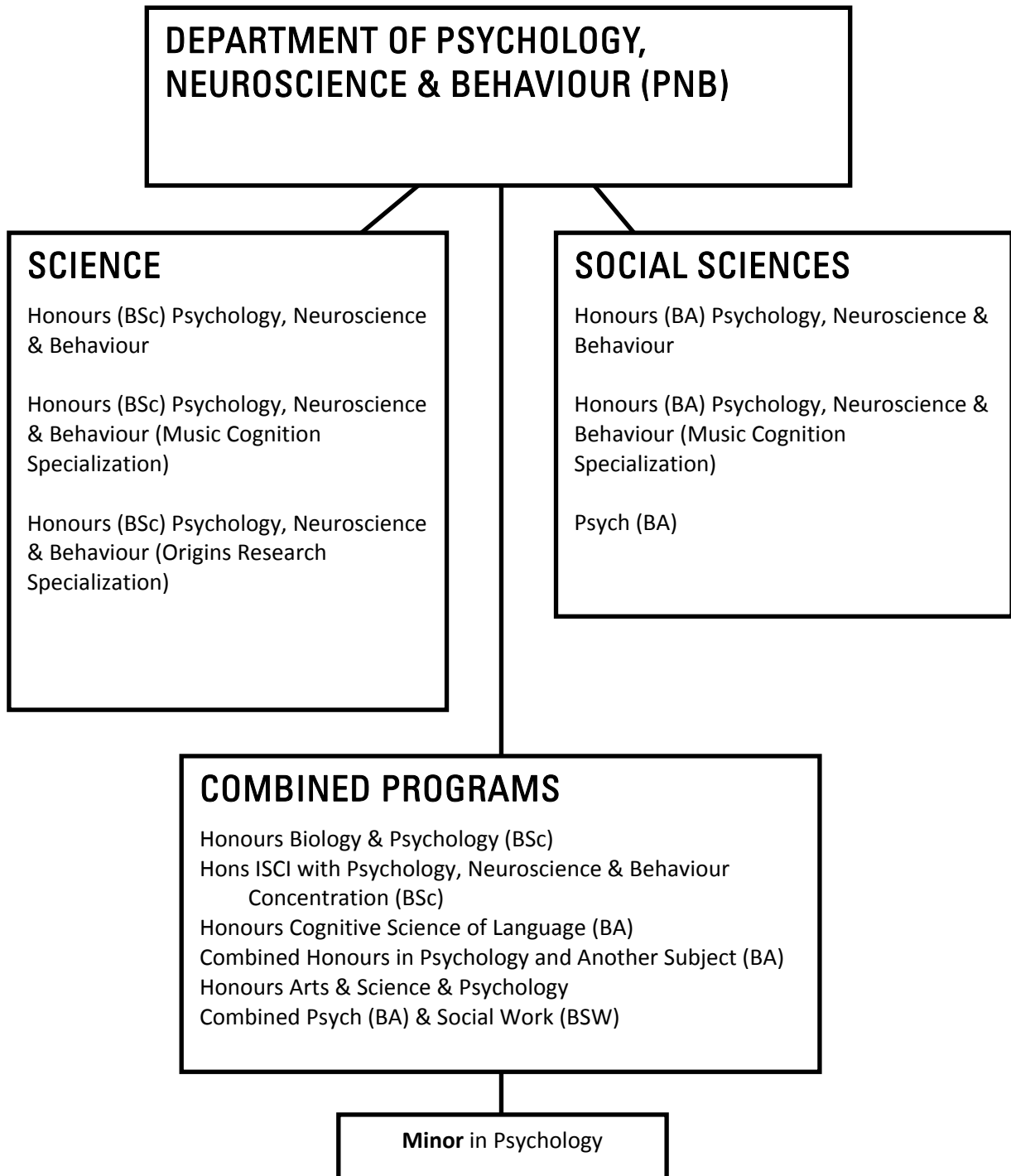
Today, in the study of experimental psychology the scientific method is applied which is an approach to knowledge that emphasizes empirical rather than intuitive processes, testable hypotheses, systematic and controlled observation, data collection using accurate and precise instrumentation, valid and reliable measures, and objective reporting of results. To do this, some proficiency in mathematics is required in order to build models that can explain behaviour and to provide a conceptual framework that can describe relationships. Statistical tests are applied to data in order to understand what effects are truly significant. Some basic biology is needed to understand evolutionary principles and how information is processed in the brain and nervous system. So whether a student is interested in clinical aspects or basic research aspects of psychology, neuroscience & behaviour a good grounding in mathematics, statistics, and biology is essential.

What Do Psychologists Do?

Most professional psychologists are engaged in one of two types of work: experimental and applied. Experimental psychologists are scientists who study the basic problems described earlier. They usually work at universities or at research institutes funded by government or industry. Experimental psychologists are also primarily responsible for the teaching of psychology, neuroscience & behaviour at university. Some of the kinds of research questions that experimental psychologists ask are described in this handbook.

Applied psychologists are concerned with applying knowledge about behaviour to the management and solution of human problems. Applied psychology is a very broad field encompassing clinical psychology, school psychology, and counseling. Applied psychologists may be found at work in mental hospitals or in the school system, where their responsibilities involve the diagnosis and treatment of behavioural, emotional, and intellectual problems. Applied psychologists are also active in industry, where they are concerned with the selection of personnel, research on marketing, and the design of procedures that maximize productivity.

PROGRAMS



PNB HONOURS PROGRAMS

PNB honours programs, and related courses, are designed to present students with current and emerging ideas in specific areas of study that reflect the research interests of our PNB faculty. The programs also enable students to develop the technical and professional skills for a great variety of career choices. The department's research expertise covers five areas: Animal Behaviour, Cognition and Perception, Developmental Psychology, Social and Evolutionary Psychology, and Systems and Behavioural Neuroscience. However, faculty and students routinely cross area (and department) boundaries, and multidisciplinary interactions are encouraged for all of our students.

The department has a long history of providing experiential education through multiple laboratory courses, individual study and research courses, practical field experiences, and honours thesis courses. In addition to our own faculty supervising thesis students and independent research courses, supervisors come from a variety of external venues: other departments, including Health Sciences, Biology, Business, Kinesiology, Linguistics; local hospitals, including McMaster, St. Joseph's, and Chedoke; and private clinical practices. Thus, undergraduates have many opportunities to gain first-hand research experience in psychology, neuroscience & behaviour.

PNB's honours programs have a set of fundamental courses that students take in Level II. These courses provide a common background preparation that enable faculty to pitch the content and learning opportunities in upper-level courses at a consistently challenging level. In Level III and IV students may select courses that reflect their own personal interests. In Level III, students are required to take a laboratory course. In Level IV, students must complete 6 units from a 'capstone' course list (e.g., thesis, inquiry, seminar). Capstone courses provide students with an opportunity to bring all their acquired academic skills and knowledge together in a meaningful way.

Psychology, neuroscience & behaviour is a heterogeneous field with utility in a vast range of professions. Students who graduate from the honours program are well prepared for graduate studies in psychology, neuroscience & behaviour, for professional studies such as medicine and teaching, or for research positions in government, university or industry.

Areas of Research Expertise within PNB

- i. Animal Behaviour
- ii. Cognition and Perception
- iii. Developmental Psychology
- iv. Social and Evolutionary Psychology
- v. Systems and Behavioural Neuroscience

The areas of research reflect the current research interests of the faculty. Students interested in a particular research area are encouraged to talk with faculty, volunteer in labs, apply for individual research projects, and attend colloquia and seminars.

AREAS OF RESEARCH

Animal Behaviour

McMaster University now boasts a large and interactive group of researchers who use evolutionary and psychophysical approaches to study animal behaviour. Members of the Animal Behaviour Group use a wide variety of techniques to conduct laboratory and field experiments on animals ranging from fruit flies to bats to mice to humans. Students have an opportunity to learn evolutionary analyses of behaviour, design and analyses of behavioural experiments, theoretical modeling, genetic analyses, and endocrine, physiological and neurobiological techniques.

Undergraduate courses in this area include Animal Behaviour (PNB 2XC3), Audition (PSYCH 3A03), Evolution & Human Behaviour (PSYCH 3F03), Motivation & Emotion (PSYCH 3M03), Animal Behaviour Lab (PNB 3S03), Behavioural Ecology (PSYCH 3T03), Evolution of Communication (PSYCH 3YY3), Special Topics in Animal Behaviour (PSYCH 4R03), and Hormones, Neurochemistry & Behaviour (PSYCH 4Y03). Students considering graduate school should consider completing a course with a strong research component (PNB 4QQ3, 4D06, 4DD6, 4D09). Breadth of training in allied fields (such as ecology, physiology, or chemistry) and/or possession of particular practical skills (such as statistical analysis, computer programming, or electronics) can be helpful.

Many animal behaviourists teach and/or do research at universities or colleges. Many have academic appointments in biology, psychology or zoology departments. Researchers may work in laboratories or in the field, depending upon the nature of the research project. Applied animal behaviourists may be hired by zoos, museums, and government and private facilities to help conduct ongoing animal behaviour research.

Associated Faculty:		
P. Andrews	S. Balshine	M. Clark
M. Daly	D. deCatanzaro	R. Dukas
P. Faure	D. Feinberg	B.G. Galef

Cognition and Perception

Cognition: McMaster's cognitive psychologists study a wide variety of problems, but are united in the goal of understanding how people mentally represent their experience and then use these representations to operate effectively. Neisser launched the "cognitive revolution" in 1966 with these words: "the world of experience is produced by the man who experiences it." This statement captures the student of cognition's belief that people are not passive organisms whose mental representations are simple or direct reflections of the outside world. Rather, they are active processors of environmental events, and as such they bring their past knowledge and their biases to bear on how they perceive and understand all current events. Thus perceiving, imagining, thinking, remembering, forming concepts, and solving problems, indeed all aspects of people's mental lives, define the domain of cognitive exploration.

Perception: Perception is one of the oldest and most fundamental disciplines within Psychology, dating back to at least the time of the ancient Greeks. The goal of perception research is to understand how stimuli from the world interact with our sensory system, forming visual, auditory, tactile, olfactory, and gustatory representations of the world. Research in perception and psychophysics is directed at discovering the lawful relations between environmental events and subjective experience. This area spans a wide range of problems extending from the structure and function of the sense organs, through the processing of sensory information, to the nature of subjective experience and the methods by which an accurate description of these experiences is obtained. The

modern study of perception is highly integrative, combining behavioural, cognitive, computational, developmental, and neuroscientific approaches.

Researchers at McMaster study vision, audition, touch, multi-sensory integration, perceptual and cognitive development, attention and spatial processing, human factors, psychophysics, music perception, and perceptual illusions and aftereffects. We investigate the formation and use of concepts, the modeling of memory processes, human communication skills, and reading and its development.

Undergraduate courses in this area of research are designed to provide students with an interdisciplinary view and to highlight the connections among cognition, perception and other sub-disciplines within psychology. A solid base in human perception and cognition (PNB 2XA3) is followed by courses in human memory (PSYCH 3VV3), language (PSYCH 3UU3, 4L03), audition (PSYCH 3A03), and cognitive neuroscience (PSYCH 3BN3, 4BN3). Developmental issues are also relevant, for example, cognitive development (PSYCH 3I13), and development during infancy (PSYCH 3HH3). Students may study the multisensory mind (PSYCH 3D03), the arts and the brain (PSYCH 3H03), learning and memory (PSYCH 3FA3), and vision (PSYCH 3J03). Practical laboratory skills are obtained from a relevant lab course (PNB 3EE3, 3LL3, 3MM3, 3V03). Students considering graduate school should consider completing a course with a strong research component (PNB 4QQ3, 4D06, 4DD6, 4D09).

Students who graduate with a focus in this area are well prepared for graduate studies in psychology and related disciplines, professional studies such as medicine, or research positions in government, university or industry.

Associated Faculty:

S. Becker	P. Bennett	S. Brown
D. Goldreich	K. Humphreys	J. Kim
B.A. Levy	T. Lewis	D. Maurer
B. Milliken	K. Murphy	A. Sekuler
J. Shedden	D. Shore	H. Sun
L. Trainor	S. Watter	

Developmental

Developmental psychology is concerned with the factors that affect physical, perceptual, cognitive, emotional, and social development from infancy through adulthood. The centuries-old debate between the relative contributions of innate and experiential factors in development is studied today in the context of experiments examining behaviour and/or physiological indexes, such as heart rate, cortisol levels, and EEG. We offer state-of-the-art facilities in laboratories studying development from several different perspectives. Research spans areas such as development of auditory perception and the acquisition of music and language, perceptual abilities of normal infants and the consequences of deprivation, development of reading fluency in childhood, origins and developmental course of extreme childhood shyness and social withdrawal, development of attention and study of autism, effects of aging on vision and attention, as well as studies of the development of aggression and bullying.

Students enrolled in the developmental research area will take a course in general development (PSYCH 3GG3) in addition to specialized courses in areas such as infancy (PSYCH 3HH3), cognitive development (PSYCH 3I13), language development (PSYCH 3UU3), social-emotional development (PSYCH 3JJ3), child language acquisition (PSYCH 3C03), and psychopathologies of childhood (PSYCH 3B03). Throughout these courses, library research, experimental methodology, laboratory research, communication, and critical thinking skills will be emphasized (PNB 3EE3, 3LL3, 3V03). Students who wish to pursue post-graduate studies should consider completing a course with a strong research component (PNB 4QQ3, 4D06, 4DD6, 4D09).

This research area provides excellent training for graduate school, research positions, and professional disciplines such as medicine, nursing, teaching, and speech pathology.

Associated Faculty:

M. Clark	B.G. Galef	G. Hall
B.A. Levy	T. Lewis	D. Maurer
M. Rutherford	L. Schmidt	A. Sekuler
D. Shore	L. Trainor	

Evolution and Social Behaviour

Social behaviour and social cognition are major foci in psychology. The social sciences are often pursued in isolation from biology, but these disciplines meet in psychology, and this is especially the case at McMaster, where the study of social cognition, development, and behaviour are integrated with the study of animal behaviour, physiology, and the evolution of behaviour.

Our faculty do epidemiological studies of homicide and analyses of patterns of risk of lethal and nonlethal violence, as well as the development of aggression and bullying in children. We study social emotional development with a focus on extremely shy children. We study evolution of parental care, evolution of cognitive abilities, social perceptual and social cognitive development, as well as biological drives for survival and reproduction.

Courses in animal behaviour (PNB 2XC3), social psychology (PSYCH 2C03), and perception and cognition (PNB 2XA3) provide a foundation for more advanced study of audition (PSYCH 3A03), evolution & human behaviour (PSYCH 3F03), social & emotional development (PSYCH 3JJ3), motivation & emotion (PSYCH 3M03), evolution of communication (PSYCH 3YY3), animal behaviour (PNB 3S03, PSYCH 4R03), behavioural ecology (PSYCH 3T03), and hormones, neurochemistry and behaviour (PSYCH 4Y03). Students interested in pursuing post-graduate studies should consider completing a course with a strong research component (PNB 4D06, 4DD6, 4D09).

This research area provides valuable preparation for further training in these areas or for careers in the health sciences and helping professions.

Associated Faculty:

P. Andrews	S. Balshine	M. Daly
D. deCatanzaro	R. Dukas	D. Feinberg
B.G. Galef	M. Rutherford	L. Schmidt

Systems and Behavioural Neuroscience

The question of how the brain works is one of the great mysteries of science and a major focus of the Systems and Behavioural Neurosciences. Sensation, perception, learning, memory, reasoning, emotion, and all other aspects of brain functioning depend on cellular communication within the nervous system. Behavioural neuroscientists study behaviour and its physiological correlates in the brain with the goal of understanding the neural mechanisms underlying behaviour. At McMaster University, systems and behavioural neuroscientists study behavioural mechanisms using techniques ranging from recording of activity in single neurons to imaging activity in the human brain. Our laboratories include state-of-the-art facilities for studies at all levels of neuroscience including: cellular/molecular, brain imaging, electrophysiology, computational modeling, psychophysics, optical imaging, ERP, and behavioural studies.

The Department offers a variety of courses that are relevant to the study of Systems and Behavioural Neuroscience, including neuroanatomy and neurophysiology (PNB 2XB3) which provides a solid foundation from which students can branch into more specialized coursework in their later years. Students may then study topics in addition (PSYCH 3A03), cognitive neuroscience (PSYCH 3BN3, 4BN3), Neurobiology of Learning and Memory (PSYCH 3FA3), Visual Neuroscience (PSYCH 3J03), Neural Circuits (PSYCH 3SN3), Hormones, Neurochemistry and Behaviour (PSYCH 4Y03), and Neurobiology (BIOLOGY 4T03). Valuable laboratory experience is available from several relevant lab courses (PNB 3EE3, 3L03, 3MM3). Students interested in pursuing post-graduate studies should take one of the thesis courses (PNB 4D09, 4D06, 4DD6), which allows a full year of experience in the laboratory of one of our faculty members. It is also recommended that student have some physics and chemistry.

Students who have studied in this area will be well prepared for careers in areas related to biomedical sciences and neuroscience.

Associated Faculty:

S. Becker	P. Bennett	D. deCatanzaro
P. Faure	D. Gillespie	D. Maurer
B. Milliken	K. Murphy	L. Roberts
L. Schmidt	A. Sekuler	J. Shedden
D. Shore	H. Sun	L. Trainor
S. Watter		

COMBINED HONOURS AND SPECIALIZATION PROGRAMS

Honours Biology and Psychology

The Honours degree in Biology and Psychology is designed for students who are interested in biology and psychology from a behavioural and neurobiological perspective. This program gives students the freedom to choose from two departments, so that they may explore genetics, development and the neural basis of behaviour while also learning about evolutionary psychology, cell biology, cognition and sensory physiology. This flexible program culminates in a fourth year research thesis, which may be taken under the supervision of faculty in either the Department of Biology or the Department of Psychology, Neuroscience & Behaviour, and affords an opportunity for first-hand experience in anything from clinical studies of child development to computational neuroscience to molecular biology. This Biology and Psychology program is compatible with pre-medical preparation. Many of our graduates choose to pursue careers in university or industrial research, genetic counseling, education, ethology, and an array of professions open to professional psychologists.

- Advisors:
 - (PNB) Dr. Balshine (sigal@mcmaster.ca), Dr. Faure (paul4@mcmaster.ca)
 - (Biology) Dr. Evans (evansb@mcmaster.ca), Dr. Dudley (sdudley@mcmaster.ca)

Honours (BSc & BA) Psychology, Neuroscience & Behaviour (Music Cognition Specialization)

The Honours (BSc & BA) Psychology, Neuroscience & Behaviour with the Music Cognition Specialization is a **multidisciplinary** program which brings together science and the arts in a unique and innovative way. As well as completing the requirements for the Honours PNB program, students also take a series of courses in music cognition (MUSICCOG 2MA3, 3MA3, 3MB3) and music (MUSIC 1A03, 1AA3 (Music History), 1CC3, 2CC3 (Harmony), 2H03 (Analysis)). 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, and how musical training/exposure affects language, cognitive, and social abilities in both children and adults. Entrance into MUSIC 1CC3 requires Advanced Rudiments from RCM or MUSIC 1C03 or students can take a qualifying theory exam from the School of Arts.

<http://mimm.mcmaster.ca/>

Honours (BSc) Psychology, Neuroscience & Behaviour (Origins Research Specialization)

The Honours (BSc) Psychology, Neuroscience & Behaviour program with the Origins Research Specialization is a multidisciplinary program offered in collaboration with the **Origins Institute**. The Origins Institute was initiated to foster interdisciplinary research on origins themes: the origin of our universe; the origin of elements; the origin of structure in our universe; the origin of life; the origins of species, and the origin of humans. The specialization is designed to introduce and involve students in 21st-C science through carefully designed classes and seminars.

Students graduating from this specialization will possess familiarity with a wide variety of ideas and techniques, which will prepare them well for entry into modern graduate programs, professions, technology, or industry.

<http://origins.mcmaster.ca>.

Combined Honours Psychology & Another Subject (BA)

Students may combine Honours (BA) Psychology with another subject from the Faculty of Social Sciences, the Faculty of Humanities, or with Arts & Science provided they meet the entry requirements for both programs. Students will normally complete 36 units of work beyond Level I in each subject area. Students graduate with a Combined Honours degree. This is particularly appealing to students who have more than one area of interest.

Honours Cognitive Science of Language (BA) (formerly Honours Linguistic Cognitive Science)

Cognitive Science, the scientific study of the mind and its processes from an inherently multidisciplinary perspective, has been one of the most exciting intellectual developments of the last 25 years. Linguistics is usually considered one of the core disciplines in Cognitive Science, being the study of natural language development, organization, and use, both normal and pathological. This program looks at the relationship between language and mind and serves as a forum to study the nature of thought, emotion, perception, creativity, memory, language, and other aspects of cognition. This program is offered through the Faculty of Humanities.

<http://www.humanities.mcmaster.ca/~linguistics/index.html>

Honours ISCI with a concentration in Psychology, Neuroscience & Behaviour

The Honours Integrated Science program (ISCI) at McMaster University is a unique program that emphasizes the relationships among all areas of science and directly involves students in interdisciplinary scientific research. ISCI integrates the learning of knowledge and skills from biology, biochemistry, chemistry, computer science, Earth science, mathematics, physics, and psychology using thematic modules, field work, and laboratories. Students who complete ISCI with a concentration in Psychology, Neuroscience & Behaviour are well prepared for graduate studies in psychology, neuroscience & behaviour, for professional studies such as medicine and teaching, for research positions in government, university or industry, and for careers in the health sciences and helping professions.

<http://www.science.mcmaster.ca/isci/>

B.A. Psychology

The 3-year BA Psychology program is a program designed with a more applied focus than the research-oriented focus of our honours programs, and has a series of courses tailored specifically for this program. Level II courses such as Child Development (2AA3), Abnormal Psychology (2AP3), Personality (2B03), and Social Psychology (2C03), serve as pre-requisites for Level III courses. In Level III you have a variety of subject areas to choose from such as Adolescent Psychology (3AB3), Human Sexuality (3AC3), Aging (3AG3), Positive Psychology (3BA3), Attitudes and Beliefs (3CB3), Forensic Psychology (3CC3), and Intergroup Relations (3CD3).

B.A./B.S.W.

The BA/BSW in Psychology and Social Work is a 4-yr limited enrollment program. Application to the program should be made directly to the School of Social Work for Level II entry. Applications are due well before March 1 for the following Fall/Winter term. Students follow the requirements for the 3-yr BA Psychology program. This degree lets you practice as a Social Worker (the program is accredited by the Canadian Association for Social Work Education).

http://www.socialwork.mcmaster.ca/documents/2008MCM0522SWBrochure_v8.pdf

Minor in Psychology

In order to declare a minor, students must be in an honours program.

A minor in psychology requires 24 units in total:

- 3 units Psych 1X03 (or Psych 1AA3)
- 15 units Psych 1XX3 (or Psych 1A03), Level II, III Psychology
- 6 units Level III Psychology

INTRODUCTORY PSYCHOLOGY, NEUROSCIENCE & BEHAVIOUR

As of September 2008, PSYCH 1X03 and 1XX3 have replaced PSYCH 1A03 and 1AA3. The new names reflect a reversal in the order of course content presentation for these introductory courses in the Fall and Winter terms, and the new pre-requisite of Biology to enroll in Psych 1XX3. All Honours PNB programs will require both PSYCH 1X03 and 1XX3. The 3-yr BA Psych program, the new Honours B.A. Social Psychology program (first offered through the Faculty of Social Sciences September 2010) and any student wishing to complete a minor in Psychology will only require PSYCH 1X03.

PSYCH 1X03 – Introduction to Psychology, Neuroscience & Behaviour

This course introduces the scientific methods used to study the psychology of higher order processes and interpersonal behaviour.

- Web lectures (self-paced learning), weekly tutorials (active inquiry-based learning); one term
- Antirequisite: PSYCH 1AA3
- *It is strongly recommended that students without Grade 12 Biology U complete BIOLOGY 1P03 concurrent with this course.*

PSYCH 1XX3 – Foundations of Psychology, Neuroscience & Behaviour

This course builds on the scientific methods of PSYCH 1X03 and introduces important themes as the foundations to investigate psychology, neuroscience & behaviour with an emphasis on sensory systems, and behaviours critical to survival.

- Weekly Live Lecture, web lectures (self-paced learning), weekly tutorials (active inquiry-based learning); one term
- Prerequisite: PSYCH 1X03 and credit in Grade 12 Biology U or credit in BIOLOGY 1P03.

<http://intropsych.net/>

The IntroPsych Program in the Department of Psychology, Neuroscience & Behaviour follows in the tradition of our long-standing reputation as Canada's "most innovative" university. Our courses use a unique blended learning environment combining online learning technology with traditional face-to-face instruction.

Web Lectures. One unique aspect of this course is that the primary course materials are presented in online web lectures. Students can interact with a dynamic interface which can be accessed anytime with internet access. Web lectures feature the ability to play videos, pause, jump, explore the searchable content, chat with fellow students viewing the module, ask questions to the online TAs, self-test with checkpoints, take a poll, and post a link or leave a comment for others to see.

Tutorials. Students meet weekly in a small group tutorial section led by a Teaching Assistant (TA) who is enrolled in PSYCH 3TT3: Applied Educational Psychology. TAs guide discussions, lead activities and answer questions. Our tutorials are consistently rated very highly and are updated each year helped by feedback from students and TAs.

One-on-one drop-in hours. Students can drop by the lobby of the psychology building, Mon-Thu 11:00AM-4:00PM, to speak with Instructional Staff to get personal time to answer your questions.

Live Lectures (Psych 1XX3 only). Each weekly live lecture provides context and application of the course materials. The goal is to provide you with a colloquium-like experience in your lectures! You will be expected to view web lectures and complete the assigned readings before attending the lecture.

SUMMARY OF LEVEL I PREREQUISITES FOR LEVEL II PNB PROGRAMS

Level II PNB Programs	Admission Requirements for 2010-2011 entry	Level II Program Notes
Honours Psychology, Neuroscience & Behaviour (Honours B.Sc.) <i>Program {2463}</i>	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 1 program with a Cumulative Average of at least 6.0 including: 6 units PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with a grade of at least B- in each 3 units from MATH 1A03, 1LS3 6 units BIOLOGY 1A03, 1M03 (or 1AA3) 3 units from CHEM 1A03, PHYSICS 1B03, 1L03 6 units from Life Sciences I Course List	One of CHEM 1A03, PHYSICS 1B03 or 1L03 is required for admission; however, completion of CHEM 1A03 and one of PHYSICS 1B03 or 1L03 is required by the end of Level II.
Honours Psychology, Neuroscience & Behaviour (Music Cognition Specialization) (Honours B.Sc.) <i>Program {2463371}</i>	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 1 program with a Cumulative Average of at least 6.0 including: 6 units PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with a grade of at least B- in each 3 units from MATH 1A03, 1LS3 6 units BIOLOGY 1A03, 1M03 (or 1AA3) 3 units from CHEM 1A03, PHYSICS 1B03, 1L03 6 units from Life Sciences I Course List 3 units from MUSIC 1A03, 1AA3	One of CHEM 1A03, PHYSICS 1B03 or 1L03 is required for admission; however, completion of CHEM 1A03 and one of PHYSICS 1B03 or 1L03 is required by the end of Level II. One of MUSIC 1A03 or 1AA3 is required for admission, however, both are required for degree completion
Honours Psychology, Neuroscience & Behaviour (Origins Research Specialization) (Honours B.Sc.) <i>Program {24634121}</i>	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 1 program with a Cumulative Average of at least 6.0 including: 6 units PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with a grade of at least B- in each 3 units from MATH 1A03, 1LS3 6 units BIOLOGY 1A03, 1M03 (or 1AA3) 3 units from CHEM 1A03 3 units from Physics 1B03, 1L03 3 units from Life Sciences I Course List	One of CHEM 1A03, PHYSICS 1B03 or 1L03 is required for admission; however, completion of CHEM 1A03 and one of PHYSICS 1B03 or 1L03 is required by the end of Level II. One of ASTRON 1F03, PHYSICS 1B03, 1BA3, 1BB3, 1F03 must be completed by the end of Level II. One of CHEM 1AA3, ENVIR SCI 1G03 must be completed by the end of Level II.
Honours Biology and Psychology (Honours B.Sc.) <i>Program {2050460}</i>	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 1 program with a Cumulative Average of at least 6.0 including: 6 units PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with a grade of at least B- in each 3 units from MATH 1A03, 1LS3 6 units BIOLOGY 1A03, 1M03 (or 1AA3) with an average of at least 7.0 6 units CHEM 1A03, 1AA3 with an average of at least 7.0 3 units from PHYSICS 1B03, 1L03	One of Physics 1B03 or 1L03 is required for Admission. However, Physics 1B03 must be completed by the end of Level 2, and is strongly recommended in Level 1.

Level II PNB Programs	Admission Requirements for 2010-2011 entry	Level II Program Notes
<p>Honours Psychology, Neuroscience & Behaviour (Honours B.A.) <i>Program {2460}</i></p>	<p>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 1 program with a Cumulative Average of at least 6.0 including: 6 units PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with a grade of at least B- in each 3 units from BIOLOGY 1A03, 1M03 (or 1AA3), 1P03 (or 1K03) or credit in Grade 12 Bio U 3 units from MATH 1A03, 1LS3 or a grade of at least C- in MATH 1M03</p>	<p>Students with Grade 12 Calculus and Vectors U must take one of MATH 1M03, 1A03, or 1LS3. Students with Grade 12 Advanced Functions U must complete MATH 1F03 prior to completing one of MATH 1M03, 1A03, or 1LS3. Students with Grade 11 Math must first take MATH 1K03. Students who obtain at least a B- in MATH 1K03, may then take MATH 1M03. Students who obtain less than B- in MATH 1K03, must take MATH 1F03 prior to taking one of MATH 1M03, 1A03, or 1LS3.</p>
<p>Honours Psychology, Neuroscience & Behaviour (Music Cognition Specialization) (Honours B.A.) <i>Program {2460371}</i></p>	<p>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 1 program with a Cumulative Average of at least 6.0 including: 6 units PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with a grade of at least B- in each 3 units from BIOLOGY 1A03, 1M03 (or 1AA3), 1P03 (or 1K03) or credit in Grade 12 Bio U 3 units from MATH 1A03, 1LS3 or a grade of at least C- in MATH 1M03 3 units from MUSIC 1A03, 1AA3</p>	<p>One of MUSIC 1A03 or 1AA3 is required for admission, however, both are required for degree completion. See Math requirements under Hons BA PNB program above.</p>
<p>Combined Honours Psychology and Another Subject (Honours B.A.) <i>Program {****460 or 2460*** depending on other subject}</i></p>	<p>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 Cumulative Average of at least 6.0 including: 6 units PSYCH 1X03 (or 1AA3), 1XX3 (or 1A03) with a grade of at least B- in each 3 units from BIOLOGY 1A03, 1M03 (or 1AA3), 1P03 (or 1K03) or credit in Grade 12 Bio U 3 units from MATH 1A03, 1LS3 or a grade of at least C- in MATH 1M03 and requirements for the other subject.</p>	<p>Students may combine two subjects and be graduated with a combined honours B.A. degree. These combinations are available within the Faculty of Social Sciences and with programs in the Faculty of Humanities and Arts & Science.. See Math requirements under Hons BA PNB program above.</p>
<p>3-year Psychology (B.A.) <i>Program {1460}</i></p>	<p>Completion of any Level I program with a Cumulative Average of at least 3.5 including: 3 units PSYCH 1X03 (or 1AA3) with a grade of at least C-</p>	<p>One of MATH 1A03, 1F03, 1K03, 1LS3, or 1M03 must be completed by end of Level II.</p>
<p>Honours Cognitive Science of Language (Honours B.A.) <i>Program {2313}</i></p>	<p>Completion of any Level I with a Cumulative Average of at least 5.0 including: 9 units LINGUIST 1A03, 1AA3, and PSYCH 1X03 (or 1AA3) with an average of at least 5.0.</p>	<p>PSYCH 1XX3 is required by the end of Level II. PSYCH 1XX3 requires completion of Grade 12 BIOLOGY U or BIOLOGY 1P03 as a prerequisite.</p>
<p>B.A. in Psychology and a Bachelor of Social Work (B.A. /B.S.W.) <i>Program {1460620}</i></p>	<p>Enrolment in this program is limited. Eligibility is dependent upon completion of any Level 1 program (30 units) with a Cumulative Average of at least 6.0 and evidence of personal suitability which may be evaluated by one or a combination of written statements, tests or interviews. Must include: 3 units Psych 1X03 (or 1AA3) with a grade of at least C- 6 units from SOCIAL WORK 1A03 or SOCIOL 3 units from Social Sciences Level I Course List</p>	<p>One of MATH 1A03, 1F03, 1K03, 1LS3, or 1M03 must be completed by end of Level II. This degree lets you practice as a Social Worker (the program is accredited by the Canadian Association for Social Work Education).</p>

PNB HONOURS PROGRAMS - LEVEL III LAB COURSES

PNB 3EE3 – PERCEPTION LABORATORY

Learn the skills needed to take you to graduate school: Experimental design, computer programming, manuscript writing and oral presentation. Previous programming experience not required.

PNB 3L03 – NEUROSCIENCE LABORATORY

Seminars and laboratory experience in current problems in neurobiology.

PNB 3LL3 – GENERAL EXPERIMENTAL PSYCHOLOGY LABORATORY

Working in research teams, students select a topic area, design an experiment based on background readings, obtain ethical approval, collect and analyze data, make oral presentation, and prepare written reports.

PNB 3MM3 – COGNITIVE NEUROSCIENCE LABORATORY

Working in groups, students will learn to conduct experiments in the field of cognitive neuroscience. Issues related to research design and scientific communication will be emphasized.

PNB 3S03 – ANIMAL BEHAVIOUR LABORATORY

Laboratory and field studies involving a wide variety of species.

PNB 3V03 – LABORATORY IN HUMAN MEMORY AND COGNITION

Experiments illustrating important issues in human memory and cognition. Problems in the design, analysis, and reporting of experiments will be emphasized. Individual projects required.

PSYCH 3PS3 – PSYCHOLINGUISTICS LAB

Students collaborate to conduct an experiment investigating a psycholinguistics problem. (This course is administered by the Department of Linguistics and Languages and is cross-listed with LINGUISTICS 3PS3)

PNB COURSES WITH INDIVIDUAL SUPERVISION

PNB Individual Study Courses

PNB 2QQ3 – RESEARCH PRACTICUM

Independent research practicum that provides students the opportunity to participate in experimental psychology projects in a research laboratory.

PNB 3Q03 – INDIVIDUAL LIBRARY STUDY

A library project under the supervision of a faculty member that may extend over both terms.

PNB 3QQ3 – INDIVIDUAL LAB STUDY

A laboratory project under the supervision of a faculty member that may extend over both terms.

PNB 4Q03 – ADVANCED INDIVIDUAL LIBRARY STUDY

A library project under the supervision of a faculty member that may extend over both terms.

PNB 4QQ3 – ADVANCED INDIVIDUAL LAB STUDY

A laboratory project under the supervision of a faculty member that may extend over both terms.

PNB Practica – Lab/Field Placements

PNB 3I06 – PRACTICA IN PSYCHOLOGY

Supervised laboratory & field placements will be arranged for a maximum of 16 students each year. The placements may vary from year to year, but will include cognitive, language, perceptual, memory, neuropsychological & behavioural disorders. A final report must be submitted to the coordinator by April 1.

PNB Thesis Courses

PNB 4D06 – SENIOR THESIS

Students conduct an individual research project under the supervision of a faculty member. [Beginning 2009-2010 - Minimum CA of at least 8.0 required]

PNB 4DD6 – SENIOR THESIS (*Honours Biology and Psychology*)

Students conduct an individual research project under the supervision of a faculty member. [Minimum CA of at least 8.5 required]

PNB 4D09 – SENIOR HONOURS THESIS

Students conduct an individual research project under the supervision or co-supervision of a Department of Psychology, Neuroscience & Behaviour faculty member. [Minimum CA of at least 8.5 required]

PNB Undergraduate Theses On-Line

Students interested in viewing a PNB undergraduate thesis from recent years may do so by e-mailing psych@mcmaster.ca.

A link to the listings can be found on the PNB web page <http://www.mcmaster.ca/psychology> under Undergraduate Studies/Courses/Course Code.

To view the thesis abstracts click on the title. When requesting a thesis, list the name of the student and name of the supervisor. Only requests from McMaster e-mail addresses will be processed.

COURSES - CHANGES EFFECTIVE SEPTEMBER 2011

(See 2011-2012 Calendar)

The Department will be offering courses with subject codes **PNB** {461} and **PSYCH** (460).

PNB courses require registration in a program in the Department of Psychology, Neuroscience & Behaviour.

PSYCH courses are open to all students who meet the stated prerequisites.

This distinction helps direct students to the courses relevant to them. We have created some new PNB courses and have switched some previous PSYCH course to PNB courses where registration in a program in Psychology, Neuroscience & Behaviour was a pre-requisite.

PSYCH Courses Renamed PNB (Psychology, Neuroscience & Behaviour).

Below is a list of former PSYCH courses with the new PNB course code designation.

FORMER PSYCH COURSE CODE	NEW PNB COURSE CODE	COURSE NAMES
PSYCH 2QQ3	PNB 2QQ3	Research Practicum
PSYCH 3EE3	PNB 3EE3	Perception Laboratory
PSYCH 3I06	PNB 3I06	Practica in Psychology
PSYCH 3L03	PNB 3L03	Neuroscience Laboratory
PSYCH 3LL3	PNB 3LL3	General Experimental Psychology Laboratory
PSYCH 3MM3	PNB 3MM3	Cognitive Neuroscience Laboratory
PSYCH 3Q03	PNB 3Q03	Individual Library Study
PSYCH 3QQ3	PNB 3QQ3	Individual Lab Study
PSYCH 3S03	PNB 3S03	Animal Behaviour Laboratory
PSYCH 3V03	PNB 3V03	Laboratory in Human Memory & Cognition
PSYCH 4B03	PNB 4B03	History of Psychology
PSYCH 4D06	PNB 4D06	Senior Thesis
PSYCH 4DD6	PNB 4DD6	Senior Thesis (for Bio/Psych)
PSYCH 4D09	PNB 4D09	Senior Honours Thesis
PSYCH 4J03	PNB 4J03	Inquiry in Psychology, Neuroscience & Behaviour
PSYCH 4Q03	PNB 4Q03	Advanced Individual Library Study
PSYCH 4QQ3	PNB 4QQ3	Advanced Individual Lab Study

NEW Courses:

New PNB courses:

PNB 2XA3	Human Perception & Cognition
PNB 2XB3	Neuroanatomy & Neurophysiology
PNB 2XC3	Animal Behaviour & Evolution
PNB 2XD3	Integrative PNB
PNB 2XE3	Descriptive Statistics
PNB 2XF3	Research Methods
PNB 2XT0	PNB Tutorial
PNB 3XE3	Inferential Statistics

NEW Courses:

New PSYCH courses:

PSYCH 2NF3	Basic & Clinical Neuroscience
PSYCH 3PS3	Psycholinguistics Lab (formerly PSYCH 4Z03)
PSYCH 4MH3	Evolution & Mental Health

Course Deletions:

PSYCH 2F03	Fundamentals of Neuroscience
PSYCH 2N03	Principles of Neuropsychology
PSYCH 2RA3	Research Design & Statistics for Behavioural Sci I
PSYCH 2RB3	Research Design & Statistics for Behavioural Sci II
PSYCH 3U03	Psychology of Reading
PSYCH 4Z03	Psycholinguistics Lab

Courses Not Offered in 2011-2012

PNB 3XE3	Inferential Statistics
PSYCH 3CC3	Forensic Psychology
PSYCH 3D03	Multi-Sensory Mind
PSYCH 3FA3	Neurobiology of Learning & Memory
PSYCH 3II3	Cognitive Development
PSYCH 3UU3	Psychology of Language

Notice for students in TRANSITION BETWEEN old & new programs:

Students who entered an Honours program in the Department of Psychology, Neuroscience & Behaviour prior to September 2011 must complete the PSYCH courses as prescribed by the program requirements when PSYCH courses are available.

PSYCH COURSE CODE

(programs prior to Sept 2011)

PSYCH 2RA3 (no longer offered)
PSYCH 2RB3 (no longer offered)
PSYCH 2H03
PSYCH 2E03
PSYCH 2F03 & 2N03 (newly combined into PSYCH 2NF3)
PSYCH 2TT3

PNB COURSE

(program as of Sept 2011)

PNB 2XE3
PNB 3XE3
PNB 2XA3 + PNB 2XD3
PNB 2XA3 + PNB 2XD3
PNB 2XB3
PNB 2XC3

PNB Students, Get Involved!

Undergraduate Societies - Students are encouraged to get involved in the department's intellectual and social life through the two undergraduate societies – offices located in PC209, Ext. 21094.

- McMaster Psychology Society macpsychsociety@gmail.com
- McMaster BioPsych Society macbiopsych@gmail.com

Colloquia/Seminar/Discovery Series – <http://www.science.mcmaster.ca/psychology/news-a-events.html>

Students are encouraged to attend these events. Check the PNB web page for the latest listings of topics and speakers.

Journal Clubs - The Department has informal journal clubs (e.g., Developmental, Animal Behaviour, Face Research, Attention) that meet once a week during the school year for discussions on current research within the field. Undergraduates are encouraged to attend and join in the discussion with other students, both undergraduate and graduate, post-docs, and faculty members.

Introductory PNB Tutors - <http://intropsych.net/>

Become a tutor for Introductory Psychology 1X03 and 1XX3 courses. Students who have served as tutors report the experience as being very rewarding. Generally tutors are Level III and IV PNB students. On-line applications are accepted in March with interviews scheduled shortly afterwards for the following September. If you think you might like teaching, this is an excellent opportunity to give it a try.

Peer Helper – <http://csd.mcmaster.ca/>

For students who are thinking of careers in counselling, teaching, human resources, or even medicine, a great way to gain career-related experience is to volunteer as a Peer Helper. If interested you should contact the Centre of Student Development (CSD) located in MUSC B107.

Let's Talk Science – <http://www.science.mcmaster.ca/its/>

A unique volunteer opportunity for under/grad science students!!

The program links graduate and undergraduate student volunteers with elementary and secondary-school teachers and students in an ongoing relationship. Although each partnership is unique, the role of the volunteer may involve visiting the classroom, presenting interactive demonstrations, bringing students to campus for hands-on science activities, judging science fairs, and more!

McMaster PNB Undergraduate Thesis Conference - A one-day in-house conference, which takes place each March (**this year on March 29, 2011**), for honours PNB thesis students to present their thesis research to the university at large. The conference gives students an opportunity to display their data and discuss their research.

Ontario Psychology Undergraduate Thesis Conference - Each year, a one-day conference is held for undergraduate Psychology students to present their thesis research work. This year, the **41st Annual Ontario Psychology Undergraduate Thesis Conference will be held at Guelph University on April 29, 2011**. In past years, many students from McMaster University have volunteered to present their work at the conference. Participation in the conference enables students to meet and interact with other students from neighbouring universities who have similar research interests.

GRADUATE SCHOOL – MA, MSC, PHD

As a master's candidate (MA, MSc), you'll spend about two years at graduate school. The purpose of this program is to give you a solid education in a specialized field of scholarship. The doctoral candidate (PhD) spends five or six years at graduate school. The purpose of the program is to give you an extensive knowledge of your field, train you to do original and meaningful research.

Applying to Graduate School (*Excerpts downloaded March 3, 2011 from <http://www-usr.rider.edu/~suler/gradschl.html>*)

GPA - Grade point average is one index that many graduate schools take very seriously. Obviously, the higher your GPA the better your chances of getting in. Very competitive programs may look for GPAs at 3.5 (A-) or higher. Less competitive programs may accept 3.0 (B+) or a bit lower.

Letters of Recommendation - Many graduate schools weigh letters very highly. Strong letters of recommendation can compensate for GPAs and GREs that are a bit weak. Your letters of recommendation could become one of your greatest assets! In our department you have the unique opportunity to work closely with professors on research projects in which you work one on one with a faculty on a topic of mutual interest. When professors get to know you in this capacity, they can write a very strong letter of recommendation (assuming you didn't screw up on the project!). Successfully completing these projects also demonstrates to graduate schools that you are a motivated person who can work independently.

GREs - Many graduate schools will require you to take the Graduate Record Exam. The GREs consist of three sections: verbal, math (quantitative), and analytic (which measures abstract thinking). *[Be advised, though, that a revised version of the GRE General Test will be coming in August 2011]*. Some schools will also require you to take the "advanced" subject, Psychology, test (it consists of multiple choice questions pertaining to all the different fields within psychology). It is very unwise to take the GREs cold. Prepare for them. Bookstores sell aids that describe strategies for taking the tests and provide sample exams. A good preparation for the Advanced Psychology GRE test is to become a TA for Introductory Psychology.

Your Personal Statement - Spend some time on this and prepare a well thought out letter. Avoid platitudes. Say something about your background, your accomplishments, what exactly about psychology interests you, what you plan to do in the future BUT ALSO STATE EXACTLY WHY IT IS YOU ARE APPLYING TO THAT PROGRAM. What is it about the program that attracts you? How will it benefit you, and what do you have to offer it? Be as specific as possible. If you are interested in one or more of their faculty member's work, say so! If you are interested in a particular program, say so! And explain why you are interested!

Field Work and Other Practical Experiences - Some graduate programs may be impressed by your having had some substantial practical experience in a setting related to their program. For example, experimental programs may find it appealing that a student helped out with a professor's research project. A developmental program may be impressed by someone who worked with developmentally handicapped children. Clinical and counseling psychology may think it is important that a student worked in a mental health setting. However, there is no guarantee that a graduate program will highly value this experience. Those programs that emphasize research training (including clinical psychology programs) may be more concerned about your academic achievements than your practical experiences.

Going for a Visit and Interviewing - If possible, go see the school. Talk to the faculty and students. It may help you decide whether or not you want to be there. It also may help you make an impression on them. Making a personal contact can be very effective (even on the phone). Talk to the faculty, find out everything you can about the program. Do they feel like people you could work with? Make a point of talking to beginning and advanced students - they will tell you things that the faculty may not.

CLINICAL, COUNSELING, & SCHOOL PSYCHOLOGY

Excerpts downloaded March 3, 2011 from: <http://www-usr.rider.edu/~suler/gradschl.html#counseling>

If you think you are interested in clinical or counseling psychology, you first should ask yourself a few questions. For how many years am I willing to go to graduate school? Do I want to work in a hospital, clinic, or program somewhere? Do I want to have a private practice? Is there any particular type of client or problem I would like to work with? Am I interested in doing research? It's not easy answering these questions now, but trying to form a clear vision of what you would like to be doing someday will help you make decisions..

MASTERS PROGRAMS (may be full or part time)

There are a variety of masters levels programs in fields related to clinical and counseling psychology. Usually these programs train people in basic counseling skills. Some programs may have specialized areas of training such as marriage and family counseling, drug addiction counseling, group counseling, vocational counseling, family therapy, child therapy, divorce mediation, prison counseling, etc. People with masters degrees usually work in group counseling practices, clinics, program for specific populations (drug abusers, battered wives, chronic psychiatric patients, etc.), and employee assistance programs.

COUNSELING PSYCHOLOGY (Ed.D. or Ph.D., usually 4 -5 years full time; sometimes less difficult to get into than clinical psychology programs)

Counseling psychology programs usually emphasize training in counseling/psychotherapy methods. These programs also include some training in research methods (stat and experimental courses), but usually are not as rigorous as in clinical psychology programs. However, counseling programs that offer a Ph.D. rather than the traditional Ed.D. often have intensified their research training. Similar to clinical psychology programs, counseling programs require internship experiences and a dissertation. A counseling program often is completely separate from the psychology department at the university. Counseling psychologists tend to work in group counseling practices, private practice, and programs for special populations (mental retardation, drug addicted, prison settings, battered wives, etc.). Some counseling psychologists may teach at universities - usually in graduate counseling psychology programs and less often at the undergraduate level or in psychology departments.

Ph.D. CLINICAL PSYCHOLOGY (5 years minimum, usually longer; full time; difficult to get into)

These programs educate students about issues related to mental health and mental health treatment. Many programs emphasize research and will require you to take courses in statistics and experimental design. You will be expected to conduct experimental research. Most programs are behavioral, cognitive, biological, or psychoanalytic in their approach. Some programs mix all of the above. A few are humanistic\existential. During the first few years in a clinical program you will get some training in psychotherapy and psychological testing, but the most intense clinical training usually comes later during an internship. All clinical programs require you to do an **internship**, usually in your fifth or sixth year. During that year you work full time in a hospital, clinic, or mental health center. The internship usually is separate from your graduate program. Following the internship, in Ontario, you must pass the exams set by the College of Psychologists of Ontario to be certified. Clinical psychologists usually end up teaching at universities, working in hospitals and clinics, or in private practice.

SCHOOL PSYCHOLOGY (approx. 4-5 years for Ph.D. or Ed.D., 2-3 years for masters degree)

School psychologists are trained to do counseling and psychological testing in a school setting. Their strength, therefore, is their understanding of school systems and education. They may work with the children in the school or the staff. Some school psychologists may also have a private practice. Some school psychology programs offer the Ed.D. Others, which may place more emphasis on research training, will offer the Ph.D.

CONTINUING EDUCATION - CERTIFICATE/DIPLOMA

Continuing Education Departments at universities offer innovative educational programs designed to complement an undergraduate degree. Post-Degree Diploma/Certificate programs can help you reach your career goals by providing you with the skills that today's employers demand. Here are some examples of programs offered through McMaster University (www.mcmastercce.com) and other local universities.

Addiction Education, McMaster	Fundraising Management, Ryerson
Adult Education, Western	Gerontology, Ryerson
Career Development, Western	Human Resources Management, McMaster
Case Management, McMaster	Management Studies, McMaster
Clinical Trials Management, Western	Marketing, McMaster
Clinical Research Associate (CCRA), McMaster	Neuroscience-Stroke Care, Ryerson
Communication for Professionals, Toronto	Nonprofit & Voluntary Sector Management, Ryerson
Conflict Management, Western	Not-for-Profit Management, Western
Dispute Resolution & Family Mediation, York	Pharmaceutical Laboratory, York
E-Learning, Toronto	Police Studies, McMaster
Environmental Public Health Leadership, Ryerson	Public Relations, McMaster
Ethics, Ryerson	Web Design & Development, McMaster

COMMUNITY COLLEGE - CERTIFICATE/DIPLOMA

Similar to programs offered by universities, these programs are designed to complement an undergraduate degree. Here are some examples from local Colleges of Applied Arts & Technology.

Addictions & Mental Health, Durham	Early Childhood Resource Teacher, Niagara
Autism & Behavioural Sciences, Mohawk	Educational Assistant, Sheridan
Behavioural Science Technology, George Brown	Human Resources Management, Sheridan
Career Development Practitioner, Conestoga	Instructor for Blind & Visually Impaired, Mohawk
Clinical Research, Humber	Marketing & Business Intelligence Research, Algonquin
Communications Disorders Assistant, Durham	Mediation-Alternative Dispute Resolution, Durham
Concurrent Disorders, Mohawk	Workplace Wellness & Health Promotion, Centennial
Corporate Communication, Seneca	Youth Corrections & Interventions, Durham

For more programs, check: <http://www.ontariocolleges.ca/portal/page/portal/ONTCOL/Home>

MCMASTER'S CAREER OFFICES, RECRUITMENT SITE, & COURSES

Science Career and Cooperative Education (SCCE)

<http://www.science.mcmaster.ca/scce/>

<http://www.science.mcmaster.ca/scce/students/career-info-by-discipline/116-psychology>

Social Sciences Experiential Education (EE)

<http://www.socialsciences.mcmaster.ca/experiential-education>

Career Services (CS)

<http://www.mcmaster.ca/services/career.cfm>

OSCAR - McMaster's Online Student Career And Recruitment site

<https://oscar.mcmaster.ca/mcauth/>

SCIENCE 2C00 – SKILLS FOR CAREER SUCCESS IN SCIENCE

Develop career skills (resume, cover letter, interview, job search) necessary to create a career path.

Eight, one hour lectures/workshops; one term

SOC SCI 1E10 – INTRODUCTION TO UNIVERSITY THROUGH EXPERIENTIAL LEARNING

This course presents information and activities to assist students with the transition into university. Topics include learning strategies, academic planning, goal setting, and career options. An introduction to campus and community resources is provided.

Six, two hour lectures/workshop; one term

SOC SCI 2E10 – INTRODUCTION TO CAREER PLANNING THROUGH EXPERIENTIAL LEARNING

Students will engage in exploration activities to provide a foundation for career/education planning. They will better connect the skills acquired through academics, extracurricular activities and work experiences to future occupation choices.

Six, two hour lectures/workshop; one term

JOBS FOR UNDERGRADUATE PSYCHOLOGY MAJORS

Careers Related to Psychology (*Excerpts downloaded March 3, 2011 from <http://psyc.ucalgary.ca/undergraduate/careers#crtp>)*

Students graduating with an undergraduate degree in psychology have been successful in obtaining employment in a wide range of occupations. This is because they have acquired and/or refined many skills through their diverse exposures at university and as psychology majors. Psychology majors also have well-developed "learning to learn" skills - the attitudes, abilities, and work habits that facilitate choice and adaptability in careers. Employment contexts for undergraduate psychology graduates often depend on the overall state of the economy and national trends in the ever-changing job market. Increasingly, "traditional" and long-term employment situations are disappearing; these are being replaced by emerging careers of shorter duration on the local, national, and international levels.

A bachelor's degree in psychology often serves as a valuable preliminary step to other professional careers such as medicine, law, management, social work, and education. This is because the social science education one receives instills the "learning to learn" skills, attitudes, abilities, and work habits that are necessary for success in any profession

Possible Employment and Careers

Presented below are many of the careers recent psychology majors have embarked upon. Although some of these careers may appear unrelated to the discipline of psychology or specific contents of psychology courses, closer scrutiny reveals the importance of the "core competencies" and skills that psychology majors acquire on their road to a bachelor's degree.

Addictions counsellor	Administration
Advertising	Career/employment counsellor
Case worker	Child care worker
Child welfare worker	Community worker
Correctional officer	Counsellor
Cultural diversity consultant	Customs or immigration agent
Day care worker, supervisor	Educational counsellor
Entrepreneur	Fund-raiser or development officer
Gerontology	Government researcher
Health services	Hospice coordinator
Human resources	Immigration officer
Labour relations specialist	Manager
Market research analyst	Marketing
Mental health worker	Motivational researcher
Personnel	Population studies researcher
Probation or parole officer	Professional consultant
Program coordinator	Psychiatric assistant or aide
Public health statistician	Public opinion interviewer
Public relations	Recreation specialist
Research assistant	Sales representative
Social services	Social worker
Teaching	Technical writer
Travel agent	Youth worker

WEB SITES OF INTEREST

Canadian Psychological Association (CPA)

CPA - 2009-2010 Graduate Guide: Graduate Psychology Programs at Canadian Universities

http://www.cpa.ca/cpsite/userfiles/Documents/Graduate_Guide_2009-2010_Final_Copy.pdf

CPA - Accredited Doctoral Programs in Clinical, Clinical Neuropsychology, Counselling & School Psychology

<http://www.cpa.ca/education/accreditation/CPAaccreditedprograms/>

CPA – Planning a Career in Psychology (2009) by Marvin Simner

http://www.cpa.ca/cpsite/userfiles/Documents/Simner_Career_Guide_2009_Web.pdf

American Psychological Association (APA)

APA – Psychology’s Growth Careers by Tori DeAngelis

<http://www.apa.org/monitor/2008/04/careers.aspx>

APA - Non-Academic Careers for Scientific Psychologists

<http://www.apa.org/careers/resources/profiles/index.aspx>

APA - Divisions 1 to 55 – Each area of psychology has a specific division

<http://www.apa.org/about/division/>

Associations and Societies:

Association for Psychological Science (APS)

<http://www.psychologicalscience.org/>

Animal Behaviour Society (ABS)

<http://animalbehaviorociety.org>

Association for the Scientific Study of Consciousness (ASSC)

<http://www.theassc.org/>

Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS)

<http://www.csbbcs.org/>

Cognitive Neuroscience Society (CNS)

<http://www.cogneurosociety.org/>

Cognitive Science Society (CSS)

<http://www.cognitivesciencesociety.org/>

Human Behavior & Evolution Society (HBES)

<http://www.hbes.com/>

International Society for the Study of Behavioural Development (ISSBD)

<http://www.issbd.org/>

Psychonomic Society

<http://www.psychonomic.org/>

Society for Music Perception and Cognition (SMPC)

<http://www.musicperception.org/>

Society for Neuroscience

<http://web.sfn.org/>

Society for Research in Child Development (SRCD)

<http://www.srcd.org>

College of Psychologists of Ontario

Information on being a registered psychologist in the Province of Ontario.

<http://www.cpo.on.ca/>

Funding Agencies for Graduate School
Natural Science & Engineering Research Council (NSERC)

<http://www.nserc.ca/>

Ontario Government Funding (OGS) & (OSAP)

<http://osap.gov.on.ca/>

Institute of Neurosciences, Mental Health & Addiction (INMHA-CIHR)

<http://www.cihr.gc.ca/e/8602.html>

Ontario Universities' Application Centre (OUAC)

<http://www.ouac.on.ca/>

Medical School Requirements

<http://www.ouac.on.ca/omsas/>

Rehabilitation Sciences Programs Requirements

<http://www.ouac.on.ca/orpas/>

Teacher Education Application

<http://www.ouac.on.ca/teas/>

Law School Requirements

<http://www.ouac.on.ca/olsas/>

Ontario Colleges of Applied Arts and Technology

Post-graduate and Joint College/University programs (usually two semesters in length)

<http://www.ocas.on.ca/>

Tips regarding Applying to Graduate School

<http://web.uvic.ca/psyc/> - Look under Grad Programs/Cognitive Psych/Tips for Applying [in first paragraph]

Applying for Graduate Studies in Psychology: A 12-Step Program, by Jay Van Bavel (2002)

[http://www.cpa.ca/cpsite/userfiles/Documents/students/Psynopsis24\(2\)i.pdf](http://www.cpa.ca/cpsite/userfiles/Documents/students/Psynopsis24(2)i.pdf)

Working in Canada

<http://www.workingincanada.gc.ca/>

Occupational Outlook Handbook (2010-2011 Edition)

U.S. Department of Labor and Bureau of Labor Statistics

<http://stats.bls.gov/oco/>

GRE (Graduate Record Examination) – Graduate School Admissions Test

<http://www.gre.org>

Grad School Program Listings - Canadian, U.S., and International

<http://www.gradschools.com/>

<http://www.psychgrad.org/>

<http://www.allpsychologyschools.com>

<http://www.internationalgraduate.net/>

Federal and Ontario Government Programs

Government of Canada – see Post-secondary Recruitment, and Management Trainee programs

<http://jobs.gc.ca>

Ontario Government Internship Program

<http://www.internship.gov.on.ca>

NOTICE:

If you find any errors or omissions within this document, please feel free to email us (hollings@mcmaster.ca) and we will be sure to have the issue rectified for the next release of this handbook.

© Department of Psychology, Neuroscience & Behaviour

1280 Main Street West • Psychology Building

Hamilton, Ontario L8S 4K1

Phone 905.525.9140 x 23005

Email: hollings@mcmaster.ca

Web: <http://www.mcmaster.ca/psychology>