

# BIOPSYCHOLOGY (BPSY)

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## DEGREES/PROGRAMS OFFERED

**3-Year BSc**

**3-Year BSc (Business Stream)**

**4-Year BSc**

**4-Year BSc (Business Stream)**

**Honours BSc**

## INTRODUCTION

Biopsychology is the branch of neuroscience concerned with how the brain and the nervous system control behaviour. Biopsychology is a rapidly developing research area that includes all aspects of the structure and function of the nervous systems and involves a variety of experimental strategies aimed at improving our understanding of nervous systems (biology), and their relationship to behaviour (psychology). Firmly grounded in the natural sciences, biopsychology includes molecular, biochemical, anatomical, physiological, behavioural, and developmental approaches. In addition to improving our understanding of the relationship between the nervous system and behaviour, knowledge obtained from research in biopsychology is increasingly being applied to a variety of health problems including stroke, Alzheimer's disease, Parkinsonism, and a wide variety of drug- or injury-induced behavioural and cognitive disorders. This program prepares students for further study in neuroscience, psychology, medicine, speech pathology, communication disorders and related fields.

Students pursuing a 3-year or 4-year BSc in Biopsychology have the opportunity to take a Business Stream – a set of core courses in the Faculty of Business that will provide them with the skills needed to enter and succeed in industry and business. See the "Science with a Business Stream" section of this Academic Calendar.

## NOTE ON DEPARTMENT COURSE ADMISSION REQUIREMENTS

Biopsychology students are expected to meet course requirements specified by the department offering the courses. Please note that Psychology and Biology courses may have somewhat different requirements for registration in certain courses. For example, Biology requires no special permission to enroll in 4000-level courses in Biology, whereas Psychology requires academic advising and approval from the Honours Committee to register for 4000-level courses. Psychology approval normally requires (1) a minimum 3.0 GPA (B) in Psychology courses based on all attempts (including course repeats and failures), and (2) a minimum 2.5 GPA (C+) in all Non-Psychology courses calculated as for the general degree (i.e., F's are not included, and in the case of repeated courses, only the highest grade is used). Exemptions to these requirements may be granted for admission to specific courses.

## REQUIREMENTS FOR A 3-YEAR BSc IN BIOPSYCHOLOGY

### ADMISSION REQUIREMENT

Students are required to consult with a Program Advisor or Coordinator in planning their course of study.

Both Chemistry 40S and either Pre-Calculus or Applied Mathematics 40S are required for students wishing to pursue this BSc degree.

Entry into the program after completing a minimum of 30 credit hours.

A grade of C or better in **PSYC-1000(6)**.

**GRADUATION REQUIREMENT**                      90 credit hours

### RESIDENCE REQUIREMENT

Degree:    Minimum 30 credit hours

Major:    Minimum 18 credit hours

### GENERAL DEGREE REQUIREMENT

Humanities:                                        12 credit hours in Humanities

Writing:    Minimum 3 credit hours of Academic Writing

Indigenous:                                        3 credit hours in designated Indigenous requirement courses

Distribution:                                        Minimum five (5) different subjects

### MAJOR REQUIREMENT

Single Major:                                        Minimum 54 credit hours in the subject as per the Required Course list

Double Major:                                        Minimum 54 hours in Biopsychology and specified number of credit hours in other Major may vary depending on interdisciplinary courses completed as they may be able to be credited to both Majors).

Required courses:

<b>PSYC-1000(6)</b>	Introductory Psychology, minimum 2.0 GPA (C)
<b>CHEM-1111(3)</b>	Introduction to the Chemical Properties of Matter (or the former CHEM-1101(6))
<b>CHEM-1112(3)</b>	Basic Principles of Chemical Reactivity (or the former CHEM-1101(6))
<b>BIOL-1115(3)</b>	Cells and Cellular Processes (or the former BIOL-1111(6))
<b>BIOL-1116(3)</b>	Evolution, Ecology and Biodiversity (or the former BIOL-1111(6))
<b>PSYC-2102(3)</b>	Introduction to Research Methods

<b>PSYC-2900(3)</b>	Physiological Psychology I
<b>CHEM-2202(3)</b>	Organic Chemistry I (or the former CHEM-2201(6))
<b>CHEM-2203(3)</b>	Organic Chemistry II (or the former CHEM-2201(6))
<b>BIOL-2301(3)</b>	Genetics (or the former BIOL-3301(3))
<b>BIOL-3221(3)</b>	Cell Biology

Minimum of 3 credit hours to be selected from:

<b>PSYC-2101(3)</b>	Introduction to Data Analysis
<b>STAT-1301(3)</b>	Statistical Analysis
<b>STAT-1501(3)</b>	Elementary Biological Statistics I

Minimum of 3 credit hours to be selected from:

<b>PSYC-2600(3)</b>	Introduction to Cognitive Psychology
<b>PSYC-2610(3)</b>	Perception I
<b>PSYC-2620(3)</b>	Psycholinguistics
<b>PSYC-2800(3)</b>	Fundamentals of Animal Learning
<b>PSYC-2920(3)</b>	Drugs & Behaviour

Minimum of 6 credit hours to be selected from:

<b>BIOL-3602(3)</b>	Comparative Animal Physiology I (or the former BIOL-3601(6))
<b>BIOL-3603(3)</b>	Comparative Animal Physiology II (or the former BIOL-3601(6))
<b>BIOL-2111(6)</b>	Comparative Chordate Zoology

6 additional credit hours at or above 3000 level from Natural Science courses (**PSYC-x6xx**, **PSYC-x8xx** or **PSYC-x9xx(3)**) in Psychology

**Advisory:** Students are advised that a 3-year BSc is not normally sufficient for admission to graduate studies. Students normally enrol in **PSYC-2101(3)** and **PSYC-2102(3)** in their 2nd year. Students with a 3.0 GPA (B) in Psychology courses are eligible to take 4000-level courses, but must receive permission from the Psychology Department's Honours Committee before registering for 4000-level courses. No special permission is required to enrol in 4000-level courses in Biology.

## REQUIREMENTS FOR THE 3-YEAR BSc IN BIOPSYCHOLOGY WITH A BUSINESS STREAM

Students must complete the requirements of the 3-year BSc in Biopsychology degree (see previous section) and the set of core courses indicated in the "Science with a Business Stream" section of the Calendar.

## REQUIREMENTS FOR A 4-YEAR BSc IN BIOPSYCHOLOGY

This allows program students with interests in the sciences to expand their knowledge of the subject area. Students are required to consult with a Departmental Honours Advisor at the time they enrol in 4000-level courses in the Psychology Department. Appointments for advising are arranged through the departmental secretary at 786-9130. Enrolling in 4000-level courses in the Biology department does not require a consultation with a faculty member.

### ADMISSION REQUIREMENT

Students are required to consult with a Program Advisor or Coordinator in planning their course of study.

Both Chemistry 40S and either Pre-Calculus or Applied Mathematics 40S are required for students wishing to pursue a 4-year BSc. Entry into the program after completing a minimum of 30 credit hours.

**GRADUATION REQUIREMENT**                      120 credit hours

### GRADUATION GPA REQUIREMENT

Graduation minimum GPA is 2.5 (C+) in Major subject courses (Psychology and Biology) and 2.50 (C+) in Major subject courses. Minimum 2.5 GPA (C+) based on all attempts (including course repeats and failures) in Psychology and Biology. Minimum 2.5 GPA (C+) in all non-major subject courses calculated as for the general degree (i.e. F's are not included, and in the case of repeated courses, only the highest grade will be used).

### RESIDENCE REQUIREMENT

Degree:	Minimum 60 credit hours
Major:	Minimum 30 credit hours

### GENERAL DEGREE REQUIREMENT

Humanities:	12 credit hours in Humanities
Writing:	Minimum 3 credit hours of Academic Writing
Indigenous:	3 credit hours in designated Indigenous requirement courses
Distribution:	Minimum five (5) different subjects

### MAJOR REQUIREMENT

Single Major:	Minimum 69 credit hours in the subject as per the Required Course list
Double Major:	Minimum 69 credit hours in Biopsychology and specified number of credit hours in other Major (may vary depending on interdisciplinary courses completed as they may be able to

be credited to both Majors).

Required courses:

- PSYC-1000(6)** Introductory Psychology
- CHEM-1111(3)** Introduction to the Chemical Properties of Matter (or the former CHEM-1101(6))
- CHEM-1112(3)** Basic Principles of Chemical Reactivity (or the former CHEM-1101(6))
- BIOL-1115(3)** Cells and Cellular Processes (or the former BIOL-1111(6))
- BIOL-1116(3)** Evolution, Ecology and Biodiversity (or the former BIOL-1111(6))
- PSYC-2102(3)** Introduction to Research Methods
- PSYC-2900(3)** Physiological Psychology I
- CHEM-2202(3)** Organic Chemistry I (or the former CHEM-2201(6))
- CHEM-2203(3)** Organic Chemistry II (or the former CHEM-2201(6))
- BIOL-2301(3)** Genetics (or the former BIOL-3301(3))
- BIOL-3221(3)** Cell Biology
- CHEM-3502(3)** Intermediate Biochemistry I: Structure, Function, and Energetics of Biomolecules
- CHEM-3503(3)** Intermediate Biochemistry II: Intermediary metabolism

Minimum of 3 credit hours to be selected from:

- PSYC-2101(3)** Introduction to Data Analysis
- STAT-1501(3)** Elementary Biological Statistics I
- STAT-1301(3)** Statistical Analysis I

Minimum of 3 credit hours to be selected from:

- PSYC-2600(3)** Introduction to Cognitive Psychology
- PSYC-2610(3)** Perception I
- PSYC-2800(3)** Fundamentals of Animal Learning
- PSYC-2620(3)** Psycholinguistics
- PSYC-2920(3)** Drugs & Behaviour

Minimum of 6 credit hours to be selected from:

- BIOL-3602(3)** Comparative Animal Physiology I (or the former BIOL-3601(6))
- BIOL-3603(3)** Comparative Animal Physiology II (or the former BIOL-3601(6))
- BIOL-2111(6)** Comparative Chordate Zoology

Minimum of 6 credit hours to be selected from:

- BIOL-3492(3)** Quantitative and Theoretical Biology
- BIOL-3202(3)** Histology
- BIOL-3303(3)** Molecular Genetics and Genomics (or the former BIOL-4302(3))
- BIOL-4502(3)** Molecular Cell Biology
- BIOL-4501(3)** Developmental Biology

Minimum of 3 credit hours at the 3000 level from Natural Science Courses in Psychology (**PSYC-36xx**, **PSYC-38xx** or **PSYC-39xx**).  
Minimum of 6 credit hours in Natural Science Courses in Psychology at 4000 level (**PSYC-46xx**, **PSYC-48xx** or **PSYC-49xx(3)** courses).

**Advisory:** Students are advised that a 4-year BSc is not normally sufficient for admission to graduate studies. Students normally enrol in **PSYC-2101(3)** and **PSYC-2102(3)** in their 2nd year.

## REQUIREMENTS FOR THE 4-YEAR BSc IN BIOPSYCHOLOGY WITH A BUSINESS STREAM

Students must complete the requirements of the 4-year BSc in Biopsychology degree (see previous section) and the set of core courses indicated in the "Science with a Business Stream" section of the Calendar.

## REQUIREMENTS FOR AN HONOURS BSc IN BIOPSYCHOLOGY

This program allows students with demonstrated ability an opportunity to deal more extensively and intensively with the subject matter. Students are required to consult with a Departmental Honours Advisor at the time they enroll in 4000-level courses in the Psychology Department. Appointments for advising are arranged through the departmental secretary at 786-9130. Enrolling in 4000-level courses in the Biology department does not require a consultation with a faculty member.

### ADMISSION REQUIREMENT

Students are required to consult with a Program Advisor or Coordinator in planning their course of study.  
Both Chemistry 40S and either Pre-Calculus or Applied Mathematics 40S are required for students wishing to pursue a BSc Hons).  
Entry into the program after completing a minimum of 30 credit hours.

**GRADUATION REQUIREMENT** 120 credit hours

**GRADUATION GPA REQUIREMENT** Graduation minimum GPA is 3.0 (B) in Honours subject courses (Psychology and Biology) and 2.75 in Non-Honours subject courses.  
Minimum 3.0 GPA (B) based on all attempts (including course repeats and failures) in Psychology and Biology

Minimum 2.75 GPA (C+) in all Non-Honours Subject courses calculated as for the general degree (i.e. F's are not included, and in the case of repeated courses, only the highest grade will be used)

#### RESIDENCE REQUIREMENT

Degree: Minimum 60 credit hours  
Honours: Minimum 30 credit hours

#### GENERAL DEGREE REQUIREMENT

Humanities: 12 credit hours in Humanities  
Writing: Minimum 3 credit hours of Academic Writing  
Indigenous: 3 credit hours in designated Indigenous requirement courses  
Distribution: Minimum five (5) different subjects

#### HONOURS REQUIREMENT

Single Major: Minimum 87 credit hours in the subject as per the Required Course list  
Double Major: Minimum 87 credit hours in Biopsychology and specified number of credit hours in other Major (may vary depending on interdisciplinary courses completed as they may be able to be credited to both Majors).

##### Required courses:

**PSYC-1000(6)** Introductory Psychology  
**CHEM-1111(3)** Introduction to the Chemical Properties of Matter (or the former CHEM-1101(6))  
**CHEM-1112(3)** Basic Principles of Chemical Reactivity (or the former CHEM-1101(6))  
**BIOL-1115(3)** Cells and Cellular Processes (or the former BIOL-1111(6))  
**BIOL-1116(3)** Evolution, Ecology and Biodiversity (or the former BIOL-1111(6))  
**PSYC-2102(3)** Introduction to Research Methods  
**PSYC-2900(3)** Physiological Psychology I  
**CHEM-2202(3)** Organic Chemistry I (or the former CHEM-2201(6))  
**CHEM-2203(3)** Organic Chemistry II (or the former CHEM-2201(6))  
**BIOL-2301(3)** Genetics (or the former BIOL-3301(3))  
**BIOL-3221(3)** Cell Biology  
**CHEM-3502(3)** Intermediate Biochemistry I: Structure, Function, and Energetics of Biomolecules  
**CHEM-3503(3)** Intermediate Biochemistry II: Intermediary Metabolism  
**PSYC-4100(6)** Intermediate Research Design and Data Analysis

Minimum of 3 credit hours to be selected from:

**PSYC-2101(3)** Introduction to Data Analysis  
**STAT-1501(3)** Elementary Biological Statistics I  
**STAT-1301(3)** Statistical Analysis I

Minimum of 3 credit hours to be selected from:

**PSYC-2600(3)** Introduction to Cognitive Psychology  
**PSYC-2610(3)** Perception I  
**PSYC-2800(3)** Fundamentals of Animal Learning  
**PSYC-2620(3)** Psycholinguistics  
**PSYC-2920(3)** Drugs & Behaviour

Minimum of 6 credit hours to be selected from:

**BIOL-3602(3)** Comparative Animal Physiology I (or the former BIOL-3601(6))  
**BIOL-3603(3)** Comparative Animal Physiology II (or the former BIOL-3601(6))  
**BIOL-2111(6)** Comparative Chordate Zoology

Minimum of 6 credit hours to be selected from:

**BIOL-3492(3)** Quantitative and Theoretical Biology  
**BIOL-3202(3)** Histology  
**BIOL-3303(3)** Molecular Genetics and Genomics (or the former BIOL-4302(3))  
**BIOL-4502(3)** Molecular Cell Biology  
**BIOL-4501(3)** Developmental Biology

Six (6) credit hours to be selected from:

**PSYC-4040(6)** Honours Thesis in a Natural Science area of Psychology approved by Biopsychology faculty members  
**OR**  
**BIOL-4111(6)** Biology Honours Thesis

Minimum of 3 credit hours at the 3000 level from Natural Science courses in Psychology (**PSYC-36xx**, **PSYC-38xx** OR **PSYC-39xx**).

Minimum of 12 credit hours total from Natural Science Courses in Psychology (**PSYC-46xx**, **PSYC-48xx** or **PSYC-49xx**), Advanced Reading and Research in a Natural Science area of Psychology at the 4000 level approved by Biopsychology faculty members (**PSYC-4010(3)**, **PSYC-4020(3)**), and Biology at the 4000 level (**BIOL-4xxx**), with a minimum of 6 credit hours from each department.

All course descriptions for all undergraduate programs can now be found in one large PDF called "All Course Descriptions" in the "Academic Calendar" section of the University website:  
<http://uwinnipeg.ca/academics/calendar/index.html>