1.0 Degree Title
Specify the two degrees for concurrent degree programs

B.Sc.

1.1 Major (Legacy= Subject) (30-char. max.)

Neuroscience

1.2 Concentration (Legacy = Concentration/Option)
If applicable (30 char. max.)


1.3 Minor (with Concentration, if applicable)
(30 char. max.)


1.4 Category

☐ Faculty Program (FP)
☐ Honours (HON)
☐ Joint Major
☐ Joint Honours Component (HC)
☐ Major Concentration (CON)
☐ Internship/Co-op
☐ Minor
☐ Thesis (T)
☐ Minor Concentration (CON)
☐ Non-Thesis (N)
☐ Other

Please specify

1.5 Complete Program Title

B.Sc.; Major in Neuroscience

2.0 Administering Faculty/Unit

Science

Offering Faculty/Department

Medicine/ Biology, Physiology and Psychology

3.0 Effective Term of revision or retirement

Please give reasons in 5.0 “Rationale” in the case of retirement

(Ex. Sept. 2004 = 200409) ☐ Retirement

Term: 200709

4.0 Existing Credit Weight

66

Proposed Credit Weight

67

5.0 Rationale for revised program

Add CHEM 212 to the list of Core Required Courses.
Move PSYC 308 from Complementary Courses Stream C to list of Core: Complementary Courses as alternative to BIOL 306. A better alternative to BIOL 306 than PHGY 311.
Move PHGY 311 from to Core: Complementary Courses as alternative to BIOL 306 to Complementary Courses Stream A and B. An essential course for stream A and B.
Add PSYC 427 to Stream C. An appropriate course for this stream.
Add the following course to the list of 21 credits to give credit to some prerequisites and to provide more flexibility to the program.

BIOC 311 (3) Metabolism
BIOL 300 (3) Molecular Biology of the Gene
BIOL 306 (3) Neurobiology
CHEM 222 (4) Introductory Organic Chemistry II
LING 390 (3) Neuroscience of Language
PHGY 311 (3) Intermediate Physiology 1
PHGY 314 (3) Integrative Neuroscience
PSYC 318 (3) Behavioural Neuroscience 2
PSYC 317 (3) Genes and Behaviour
PSYC 342 (3) Hormones and Behaviour

6.0 Revised Program Description (Maximum 150 words)

Add CHEM 212 to the list of Core Required Courses.
Move PSYC 308 from Complementary Courses Stream C to list of Core: Complementary Courses as alternative to BIOL 306. A better alternative to BIOL 306 than PHGY 311.
Move PHGY 311 from to Core: Complementary Courses as alternative to BIOL 306 to Complementary Courses Stream A and B. An essential course for stream A and B.
Add PSYC 427 to Stream C. An appropriate course for this stream.
Add the following course to the list of 21 credits to give credit to some prerequisites and to provide more flexibility to the program.

BIOC 311 (3) Metabolism
BIOL 300 (3) Molecular Biology of the Gene
BIOL 306 (3) Neurobiology
CHEM 222 (4) Introductory Organic Chemistry II
LING 390 (3) Neuroscience of Language
PHGY 311 (3) Intermediate Physiology 1
PHGY 314 (3) Integrative Neuroscience
PSYC 318 (3) Behavioural Neuroscience 2
PSYC 317 (3) Genes and Behaviour
PSYC 342 (3) Hormones and Behaviour
7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

Major in Neuroscience (66 credits)

### Core Required Courses
(9 credits)
- BIOL 200 (3) Molecular Biology
- PHGY 209 (3) Mammalian Physiology 1
- PSYC 311 (3) Human Cognition and the Brain

### Core Complementary Courses (18 credits)
3 credits from:
- PSYC 211 (3) Introductory Behavioural Neuroscience
- PSYC 212 (3) Perception
- PSYC 213 (3) Cognition

3 credits from:
- BIOL 373 (3) Biometry
- PSYC 305 (3) Statistics for Experimental Design

3 credits from:
- COMP 202 (3) Introduction to Computing 1
  - or equivalent in Computer Science

3 credits from:
- MATH 222* (3) Calculus 3
- BIOL 309 (3) Mathematical Models in Biology

3 credits from:
- BIOL 306 (3) Neurobiology and Behaviour

3 credits from:
- PHIL 306 (3) Philosophy of Mind
- PHIL 341 (3) Philosophy of Science 1
  - or equivalent

Complementary Courses (credits)
15 credits from Stream A, Stream B, or Stream C.

A. Cell and Molecular Stream (15 credits)
- BIOL 201 (3) Cell Biology and Metabolism
- BIOL 202 (3) Basic Genetics
- BIOL 300 (3) Molecular Biology of the Gene
- BIOL 301 (3) Metabolic Biochemistry
- PHGY 314 (3) Integrative Neuroscience

B. Neurophysiology/Neural Computation Stream (15 credits)
- BIOL 201 (3) Cell Biology and Metabolism
- BIOL 202 (3) Basic Genetics
- ANAT 321 (3) Circuity of the Human Brain
- MATH 222* (3) Calculus 3
  - or BIOL 309 (3) Mathematical Models in Biology
- COMP 206 (3) Introduction to Software Systems
- PHGY 314 (3) Integrative Neuroscience

C. Cognitive/Behavioural Stream (15 credits)
- PSYC 318 (3) Behavioural Neuroscience 2
  - and 9 credits chosen from:
    - PSYC 317 (3) Genes and Behaviour
    - PSYC 342 (3) Hormones and Behaviour
    - PSYC 410 (3) Special Topics in Neuropsychology
    - PSYC 470 (3) Memory and Brain
    - LING 390 (3) Neuroscience of Language

Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

Major in Neuroscience (67 credits)

### Core Required Courses
(13 credits)
- BIOL 200 (3) Molecular Biology
- PHGY 209 (3) Mammalian Physiology 1
- PSYC 311 (3) Human Cognition and the Brain
- *CHEM 212 (4) Organic Chemistry 1

- *If CHEM 212 taken prior to start of program, credits must be replaced with an alternative course with approval from program coordinator.

### Core Complementary Courses (18 credits)
3 credits from:
- PSYC 211 (3) Introductory Behavioural Neuroscience
- PSYC 212 (3) Perception
- PSYC 213 (3) Cognition

3 credits from:
- BIOL 373 (3) Biometry
- PSYC 305 (3) Statistics for Experimental Design

3 credits from:
- COMP 202 (3) Introduction to Computing 1
  - or equivalent in Computer Science

3 credits from:
- MATH 222** (3) Calculus 3
- BIOL 309 (3) Mathematical Models in Biology

3 credits from:
- PHIL 306 (3) Philosophy of Mind
- PHIL 341 (3) Philosophy of Science 1
  - or equivalent

- 15 credits from Stream A, Stream B, or Stream C.
  
A. Cell and Molecular Stream (15 credits)
- BIOL 201 (3) Cell Biology and Metabolism
- BIOL 202 (3) Basic Genetics
- ANAT 321 (3) Circuity of the Human Brain
- MATH 222** (3) Calculus 3
  - or BIOL 309 (3) Mathematical Models in Biology
- COMP 206 (3) Introduction to Software Systems
- PHGY 311 (3) Intermediate Physiology 1
- PHGY 314 (3) Integrative Neuroscience

B. Neurophysiology/Neural Computation Stream (15 credits)
- BIOL 201 (3) Cell Biology and Metabolism
- BIOL 202 (3) Basic Genetics
- ANAT 321 (3) Circuity of the Human Brain
- MATH 222** (3) Calculus 3
  - or BIOL 309 (3) Mathematical Models in Biology
- COMP 206 (3) Introduction to Software Systems
- PHGY 311 (3) Intermediate Physiology 1
- PHGY 314 (3) Integrative Neuroscience

C. Cognitive/Behavioural Stream (15 credits)
- PSYC 318 (3) Behavioural Neuroscience 2
  - and 12 credits chosen from:
    - PSYC 317 (3) Genes and Behaviour
    - PSYC 342 (3) Hormones and Behaviour
    - PSYC 410 (3) Special Topics in Neuropsychology
    - PSYC 427 (3) Sensorimotor Behaviour
    - PSYC 470 (3) Memory and Brain
    - LING 390 (3) Neuroscience of Language

Program/Major or Minor/Concentration Revision Form P2-2
8.0 Consultation with Related Units
☐ Yes  ☐ No

Financial Consult
☐ Yes  ☐ No

Attach list of consultations

<table>
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<tr>
<th>9. Approvals</th>
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<td><strong>Routing Sequence</strong></td>
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Submitted by

Name: Sonia Viselli
Phone: 3689
Email: Sonia.viselli@mcgill.ca
Submission Date: November 14, 2006

To be completed by ARR:

CIP Code:
## 7.0 List of existing program and proposed program

### Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

- 24 credits from the list below. At least 18 credits must be at the 400- or 500-level.
  - BIOL 301 (4) Cell and Molecular Laboratory
  - BIOL 389 (3) Laboratory in Neurobiology
  - COMP 206 (3) Introduction to Software Systems
  - Or equivalent 300- or 400-level Computer Science course
  - BIOL 530 (3) Neural Basis of Behaviour
  - BIOL 531 (3) Neurobiology Learning Memory
  - BIOL 532 (3) Developmental Neurobiology Seminar
  - BIOL 588 (3) Molecular/Cellular Neurobiology
  - BIOC 455 (3) Neurochemistry
  - BMDE 519 (3) Biomedical Signals and Systems
  - MATH 315 (3) Ordinary Differential Equations
  - MATH 323 (3) Probability
  - MATH 324 (3) Statistics
  - MATH 437 (3) Mathematical Methods in Biology
  - or PHYS 413 (3) Physical Basis of Physiology
  - NEUR 310 (3) Cellular Neurobiology
  - NEUR 550 (3) Free Radical Biomedicine
  - PHAR 562 (3) General Pharmacology 1
  - PHAR 563 (3) General Pharmacology 2
  - PHGY 451 (3) Advanced Neurophysiology
  - PHGY 520 (3) Ion Channels
  - PHGY 556 (3) Topics in Systems Neuroscience
  - PSYC 427 (3) Sensorimotor Behaviour
  - PSYC 470 (3) Memory and Brain
  - PSYC 505 (3) The Psychology of Pain
  - PSYC 526 (3) Advances in Visual Perception
  - PSYC 532 (3) Cognitive Science
  - PSYT 500 (3) Advances: Neurobiology of Mental Disorders

A maximum of 9 credits from:
- PHGY 461D1 (4.5) Experimental Physiology
- PHGY 461D2 (4.5) Experimental Physiology
- PSYC 395 (6) Psychology Research Project 1
- PSYC 495 (6) Psychology Research Project 2
- PSYC 494D1 (4.5) Psychology Research Project
- PSYC 494D2 (4.5) Psychology Research Project
- BIOL 377 (3) Independent Studies 1
- BIOL 469D1 (4.5) Independent Studies 2
- BIOL 469D2 (4.5) Independent Studies 2
- BIOL 471 (6) Independent Studies 3
- BIOL 477 (3) Independent Studies 4
- BIOL 478 (3) Independent Studies 5

### Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

- 21 credits from the list below. At least 18 credits must be at the 400- or 500-level.
  - BIOL 300 (3) Molecular Biology of the Gene
  - BIOL 301 (4) Cell and Molecular Laboratory
  - BIOL 306 (3) Neurobiology
  - BIOL 389 (3) Laboratory in Neurobiology
  - CHEM 222 (4) Introduction to Organic Chemistry 2
  - COMP 206 (3) Introduction to Software Systems
  - Or equivalent 300- or 400-level Computer Science course
  - BIOL 530 (3) Neuroethology
  - BIOL 531 (3) Neurobiology Learning Memory
  - BIOL 532 (3) Developmental Neurobiology Seminar
  - BIOL 588 (3) Molecular/Cellular Neurobiology
  - BIOC 311 (3) Metabolic Biochemistry
  - BIOL 455 (3) Neurochemistry
  - BMDE 519 (3) Biomedical Signals and Systems
  - LING 390 (3) Neuroscience of Language
  - MATH 315 (3) Ordinary Differential Equations
  - MATH 323 (3) Probability
  - MATH 324 (3) Statistics
  - MATH 437 (3) Mathematical Methods in Biology
  - or PHYS 413 (3) Physical Basis of Physiology
  - NEUR 310 (3) Cellular Neurobiology
  - NEUR 550 (3) Free Radical Biomedicine
  - PHAR 562 (3) General Pharmacology 1
  - PHAR 563 (3) General Pharmacology 2
  - PHGY 311 (3) Intermediate Physiology 1
  - PHGY 314 (3) Integrative Neuroscience
  - PHGY 451 (3) Advanced Neurophysiology
  - PHGY 520 (3) Ion Channels
  - PHGY 556 (3) Topics in Systems Neuroscience
  - PSYC 317 (3) Genes and Behaviour
  - PSYC 318 (3) Behavioural Neuroscience 2
  - PSYC 342 (3) Hormones and Behaviour
  - PSYC 410 (3) Special Topics in Neuropsychology
  - PSYC 427 (3) Sensorimotor Behaviour
  - PSYC 470 (3) Memory and Brain
  - PSYC 505 (3) The Psychology of Pain
  - PSYC 526 (3) Advances in Visual Perception
  - PSYC 532 (3) Cognitive Science
  - PSYT 500 (3) Advances: Neurobiology of Mental Disorders

A maximum of 9 credits from:
- PHGY 461D1 (4.5) Experimental Physiology
- PHGY 461D2 (4.5) Experimental Physiology
- PSYC 395 (6) Psychology Research Project 1
- PSYC 495 (6) Psychology Research Project 2
- PSYC 494D1 (4.5) Psychology Research Project
- PSYC 494D2 (4.5) Psychology Research Project
- BIOL 377 (3) Independent Studies 1
- BIOL 469D1 (4.5) Independent Studies 2
- BIOL 469D2 (4.5) Independent Studies 2
- BIOL 471 (6) Independent Studies 3
- BIOL 477 (3) Independent Studies 4
- BIOL 478 (3) Independent Studies 5

Attach extra page(s) as needed
**Students who have successfully completed an equivalent to MATH 222 at CEGEP or elsewhere, must substitute another 3-credit course for MATH 222.**