



<p>1.0 Degree Title Specify the two degrees for concurrent degree programs BSc.</p>	<p>2.0 Administering Faculty/Unit Faculty of Science, Dean's Office; Multidisciplinary Offering Faculty/Department Science, Medicine – Biology, Physiology, Psychology</p>																
<p>1.1 Major (Legacy= Subject) (30-char. max.) Minor in Neuroscience</p>	<p>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: 201509</p>																
<p>1.2 Concentration (Legacy = Concentration/Option) If applicable (30 char. max.)</p>	<p>4.0 Existing Credit Weight Proposed Credit Weight 25 24 - 25</p>																
<p>1.3 Minor (with Concentration, if applicable) (30 char. max.) Minor in Neuroscience</p>	<p>5.0 Rationale for revised program Neuroscience is a highly interdisciplinary field of study. Accordingly, the aim of a Minor in Neuroscience should be to expose students to areas of neuroscience that extend beyond what is offered in their home department. In the current version of the Neuroscience Minor, only 6 complementary credits must be from outside the student's home department. In the proposed version 12 complementary credits will have to be taken from outside the student's home department. This revision will ensure that students taking the Minor achieve the desired breadth within the discipline.</p>																
<p>1.4 Category</p> <table border="0"> <tr> <td>Faculty Program (FP)</td> <td>Honours (HON)</td> </tr> <tr> <td>Major</td> <td>Joint Honours</td> </tr> <tr> <td>Joint Major</td> <td>Component (HC)</td> </tr> <tr> <td>Major Concentration (CON)</td> <td>Internship/Co-op</td> </tr> <tr> <td>X Minor</td> <td>Thesis (T)</td> </tr> <tr> <td>Minor Concentration (CON)</td> <td>Non-Thesis (N)</td> </tr> <tr> <td></td> <td>Other</td> </tr> <tr> <td></td> <td>Please specify</td> </tr> </table>	Faculty Program (FP)	Honours (HON)	Major	Joint Honours	Joint Major	Component (HC)	Major Concentration (CON)	Internship/Co-op	X Minor	Thesis (T)	Minor Concentration (CON)	Non-Thesis (N)		Other		Please specify	
Faculty Program (FP)	Honours (HON)																
Major	Joint Honours																
Joint Major	Component (HC)																
Major Concentration (CON)	Internship/Co-op																
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Minor Concentration (CON)	Non-Thesis (N)																
	Other																
	Please specify																
<p>1.5 Complete Program Title BSc; Minor in Neuroscience</p>																	
<p>6.0 Revised Program Description (Maximum 150 words) N/A</p>																	

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)

Program Requirements

The Minor in Neuroscience is composed of 25 credits: 13 required and 12 complementary. For the 12 complementary credits, at least 6 must be at the 400- or 500-level and not from the student's home department.

All course selections for the Minor must be approved by the program's adviser, Wendy Brett (Email: wendy.brett@mcgill.ca; Office: Dawson Hall, Rm 411).

A maximum of 6 credits can be counted for both the student's primary program and for the Minor in Neuroscience.

Required Courses (13 credits)

Students who have successfully completed an equivalent of CHEM 212 in CEGEP or elsewhere prior to starting at McGill must replace these credits with a 3-credit elective course to satisfy the total credit requirement for the Neuroscience Minor.

BIOL 200	Molecular Biology	3 credits
CHEM 212*	Introductory Organic Chemistry 1	4 credits
NSCI 200	Introduction to Neuroscience 1	3 credits
NSCI 201	Introduction to Neuroscience 2	3 credits

Complementary Courses (12 credits)

12 credits selected as follows:

- At least 6 of the 12 credits have to be at the 400- or 500-level
- At least 6 of the 400- or 500-level credits have to be from outside the student's home department

0-6 credits from the following list of 200- and 300-level courses:

Notes:

* Students may select [ANAT 212](#) or [BIOC 212](#) or [BIOL 201](#).

** Students may select either [BIOL 306](#) or [PHGY 314](#).

ANAT 212*	Molecular Mechanisms of Cell Function	3 credits
BIOC 212*	Molecular Mech of Cell Funct	3 credits
BIOL 201*	Cell Biology and Metabolism	3 credits
BIOL 202	Basic Genetics	3 credits
BIOL 300	Molecular Biology of the Gene	3 credits
BIOL 306**	Neural Basis of Behaviour	3 credits
BIOL 320	The Evolution of Brain and Behaviour	3 credits
BIOL 389	Laboratory in Neurobiology	3 credits
LING 390	Neuroscience of Language	3 credits
NEUR 310	Cellular Neurobiology	3 credits
PHGY 311	Channels, Synapses & Hormones	3 credits
PHGY 314**	Integrative Neuroscience	3 credits
PSYC 302	The Psychology of Pain	3 credits
PSYC 311	Human Cognition and the Brain	3 credits
PSYC 315	Computational Psychology	3 credits
PSYC 317	Genes and Behaviour	3 credits
PSYC 318	Behavioural Neuroscience 2	3 credits
PSYC 342	Hormones and Behaviour	3 credits

(See Attachment 1A annexed)

Attach extra page(s) as needed

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

Program Requirements

The Minor in Neuroscience is composed of 24-25 credits: 9 required and 15-16 complementary. For the 15-16 complementary credits, at least 12-13 must be from outside the student's home department and at least 6 of the 12-13 must be at the 400- or 500-level.

All course selections for the Minor must be approved by the program's adviser, Wendy Brett (Email: wendy.brett@mcgill.ca; Office: Dawson Hall, Rm 411).

Note 1: A maximum of 6-7 credits can be counted for both the student's primary program and for the Minor in Neuroscience.

Required Courses (9 credits)

BIOL 200	Molecular Biology	3 credits
NSCI 200	Introduction to Neuroscience 1	3 credits
NSCI 201	Introduction to Neuroscience 2	3 credits

Complementary Courses (15-16 credits)

15-16 credits selected as follows:

- At least 12-13 credits must be from outside the student's home department
- At least 6 of the 12-13 credits have to be at the 400- or 500-level

0-10 credits from the following list of 200- and 300-level courses:

* Students may select [ANAT 212](#) or [BIOC 212](#) or [BIOL 201](#).

** Students may select either [BIOL 306](#) or [PHGY 314](#).

Note 2: Since CHEM 212 is a prerequisite/corequisite for NSCI 200 and BIOL 200, students must take CHEM 212 if they have not yet done so.

ANAT 212*	Molecular Mechanisms of Cell Function	3 credits
BIOC 212*	Molecular Mech of Cell Funct	3 credits
BIOL 201*	Cell Biology and Metabolism	3 credits
BIOL 202	Basic Genetics	3 credits
BIOL 300	Molecular Biology of the Gene	3 credits
BIOL 306**	Neural Basis of Behaviour	3 credits
BIOL 320	The Evolution of Brain and Behaviour	3 credits
BIOL 389	Laboratory in Neurobiology	3 credits
CHEM 212	Introductory Organic Chemistry 1	4 credits
LING 390	Neuroscience of Language	3 credits
NEUR 310	Cellular Neurobiology	3 credits
PHGY 311	Channels, Synapses & Hormones	3 credits
PHGY 314**	Integrative Neuroscience	3 credits
PSYC 302	The Psychology of Pain	3 credits
PSYC 311	Human Cognition and the Brain	3 credits
PSYC 315	Computational Psychology	3 credits
PSYC 317	Genes and Behaviour	3 credits
PSYC 318	Behavioural Neuroscience 2	3 credits
PSYC 342	Hormones and Behaviour	3 credits

(See Attachment 1A annexed)

8.0 Consultation with
Related Units

Yes No

Financial Consult Yes No

Attach list of consultations

9. Approvals

Routing Sequence	Name	Signature	Date
Department	<input type="text"/>	<input type="text"/>	<input type="text"/>
Curric/Acad Committee	<input type="text"/>	<input type="text"/>	<input type="text"/>
Faculty 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Faculty 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
Faculty 3	<input type="text"/>	<input type="text"/>	<input type="text"/>
SCTP	<input type="text"/>	<input type="text"/>	<input type="text"/>
GS	<input type="text"/>	<input type="text"/>	<input type="text"/>
APPC	<input type="text"/>	<input type="text"/>	<input type="text"/>
Senate	<input type="text"/>	<input type="text"/>	<input type="text"/>

Submitted by

Name
Phone
Email
Submission Date

To be completed by ARR:

CIP Code

Attachment 1A – continuation of Section 7.0

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)

6-12 credits from the following list of 400- and 500-level courses:

*** Students may select either [BIOL 514](#) or [PSYC 514](#).

BIOL 514***	Neurobiology Learning and Memory	3 credits
BIOL 530	Advances in Neuroethology	3 credits
BIOL 532	Developmental Neurobiology Seminar	3 credits
BIOL 588	Advances in Molecular and Cellular Neurobiology	3 credits
PHGY 425	Analyzing Physiological Systems	3 credits
PHGY 451	Advanced Neurophysiology	3 credits
PHGY 520	Ion Channels	3 credits
PHGY 524	Chronobiology	3 credits
PHGY 556	Topics in Systems Neuroscience	3 credits
PSYC 410	Special Topics in Neuropsychology	3 credits
PSYC 427	Sensorimotor Behaviour	3 credits
PSYC 444	Sleep Mechanisms and Behaviour	3 credits
PSYC 470	Memory and Brain	3 credits
PSYC 501	Auditory Perception	3 credits
PSYC 506	Cognitive Neuroscience of Attention	3 credits
PSYC 514***	Neurobiology Learning and Memory	3 credits
PSYC 522	Neurochemistry and Behaviour	3 credits
PSYC 526	Advances in Visual Perception	3 credits
PSYC 532	Cognitive Science	3 credits
PSYT 455	Neurochemistry	3 credits
PSYT 500	Advances: Neurobiology of Mental Disorders	3 credits
PSYT 505	Neurobiology of Schizophrenia	3 credits

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

6-15 credits from the following list of 400- and 500-level courses:

*** Students may select either [BIOL 514](#) or [PSYC 514](#).

BIOL 514***	Neurobiology Learning and Memory	3 credits
BIOL 530	Advances in Neuroethology	3 credits
BIOL 532	Developmental Neurobiology Seminar	3 credits
BIOL 580	Genetic Approaches to Neural Systems	3 credits
BIOL 588	Advances in Molecular and Cellular Neurobiology	3 credits
PHGY 425	Analyzing Physiological Systems	3 credits
PHGY 451	Advanced Neurophysiology	3 credits
PHGY 520	Ion Channels	3 credits
PHGY 524	Chronobiology	3 credits
PHGY 556	Topics in Systems Neuroscience	3 credits
PSYC 410	Special Topics in Neuropsychology	3 credits
PSYC 427	Sensorimotor Behaviour	3 credits
PSYC 444	Sleep Mechanisms and Behaviour	3 credits
PSYC 470	Memory and Brain	3 credits
PSYC 501	Auditory Perception	3 credits
PSYC 506	Cognitive Neuroscience of Attention	3 credits
PSYC 514***	Neurobiology Learning and Memory	3 credits
PSYC 522	Neurochemistry and Behaviour	3 credits
PSYC 526	Advances in Visual Perception	3 credits
PSYC 532	Cognitive Science	3 credits
PSYT 455	Neurochemistry	3 credits
PSYT 500	Advances: Neurobiology of Mental Disorders	3 credits
PSYT 505	Neurobiology of Schizophrenia	3 credits

Neuroscience Committee

From: Monroe W. Cohen
Sent: November-18-14 1:04 PM
To: Josie D'Amico
Cc: Wendy Brett, Ms; Geralda Bacaj, Miss
Subject: RE: Proposed Revisions to the Neuroscience Minor

Here are the names Josie.

- Joseph Dent (Biology)
- Alanna Watt (Biology)
- Gillian O'Driscoll (Psychology)
- Edward Ruthazer (Neurology and Neurosurgery, and Associate Member of Psychology)
- Reza Sharif Naeini (Physiology)
- Wendy Brett (Interdisciplinary Student Advisor)
- Monroe Cohen (Physiology)

Thanks,
Monroe

From: Josie D'Amico
Sent: Tuesday, November 18, 2014 12:27 PM
To: Monroe W. Cohen
Cc: Wendy Brett, Ms; Geralda Bacaj, Miss
Subject: RE: Proposed Revisions to the Neuroscience Minor

Thank you, Prof. Cohen.

Would it be possible to have the names of the members so that I could attach it to the Program Revision form when I submit it to SCTP.

Many thanks.

Josie

Josie D'Amico

From: Monroe W. Cohen
Sent: November-18-14 10:32 AM
To: Josie D'Amico
Cc: Wendy Brett, Ms; Geralda Bacaj, Miss
Subject: RE: Proposed Revisions to the Neuroscience Minor

Yes Josie – all members of our Neuroscience Committee have now approved the revised proposal that I submitted to you.

Thanks,
Monroe

Geralda Bacaj, Miss

From: Geralda Bacaj, Miss
Sent: Monday, October 27, 2014 3:26 PM
To: Geralda Bacaj, Miss
Subject: RE: difficulties with the Neuroscience Minor proposal

-----Original Message-----

From: Gillian O Driscoll [mailto:gillian@psych.mcgill.ca]

Sent: October-26-14 5:18 PM

To: Monroe W. Cohen; Alanna Watt, Dr.

Cc: Edward Ruthazer, Dr.; Gillian O'Driscoll, Prof.; Gillian O Driscoll; Joseph Dent, Prof.; Reza Sharif Naeini, Dr.; Josie D'Amico; Wendy Brett, Ms

Subject: difficulties with the Neuroscience Minor proposal

Dear Monroe,

Thank you for your email. I understand the rationale behind the proposal; students should be acquiring information outside the domain normally acquired in their own major. However, I think the change that would allow no overlap whatsoever is too strong.

I checked the other Science departments for their policies regarding overlap in minors: all of the 24-25 credit minors allow 6 credits of overlap with the exception of Chemistry, which does not specify.

The only departments that don't allow overlap have 18 credit minors; we might consider reducing our credit requirement if we want to go that route.

I am concerned about the proposal for some of the same reasons that Alanna outlined, including the difficulty completing the minor in a timely fashion. The proposal would affect Psychology Majors doing a Minor in Neuroscience disproportionately since 10/22 of the upper

level courses in the Neuroscience Minor are Psychology courses. As the remaining choices are highly enrolment-restricted (e.g. every upper level Physiology option has a max of 11 to 25 students and all upper level Biology courses are limited to 20 or less), I am concerned that many Psychology students would be shut out of their few remaining options. Given that already one of the chief complaints of students in Neuroscience, even in our current less restrictive scenario, is the difficulty getting in to upper level courses, a proposal that would limit Psychology Majors to only 12 of the 22 upper level courses seems excessively restrictive.

Perhaps the Neuroscience Committee could meet to discuss other options?

Gillian O'Driscoll

--

Open WebMail Project (<http://openwebmail.org>)

----- Original Message -----

From: "Monroe W. Cohen" <monroe.cohen@mcgill.ca>

To: "Alanna Watt, Dr." <alanna.watt@mcgill.ca>

Cc: "Edward Ruthazer, Dr." <ed.ruthazer@mcgill.ca>, "Gillian O'Driscoll, Prof." <gillian.o'driscoll@mcgill.ca>, Gillian O Driscoll <gillian@psych.mcgill.ca>, "Joseph Dent, Prof." <joseph.dent@mcgill.ca>, "Reza Sharif Naeini, Dr." <reza.sharif@mcgill.ca>, "Josie D'Amico" <josie.damico@mcgill.ca>, "Wendy Brett, Ms" <wendy.brett@mcgill.ca>

Sent: Sat, 25 Oct 2014 22:52:10 +0000

Subject: RE: Changes to the Neuroscience Minor - your approval required

> Dear Alanna,

>

> Thanks very much for your prompt reply, thoughtful feedback, and

> request for clarification.

>

> 1. Yes, it may be that fewer students will take the minor. Currently
> we have 83 students in the Neuroscience Minor. Wendy Brett (the
> Neuroscience advisor) was finding that some students in the
> Neuroscience Major and in Honours Neuroscience were sometimes being
> shut out of courses with limited enrolment because some of the spots
> were taken by students in the Neuroscience Minor. Hopefully, the
> proposed changes will reduce this problem. In addition, I think
> [WINDOWS-1252?]it's appropriate that the Neuroscience Minor
> designation on the [WINDOWS-1252?]student's transcript should
> represent the acquisition of an area of knowledge beyond that offered by their home department.

>
> 2. Yes, the Psych student would be able to take PSYC 444 as part of
> his/her major but it would not be counted for the Neuroscience Minor.
> In fact, Psych students will still be able to take any of the listed
> Psychology courses and have them count for their major.
> However those courses would not count as part of their Neuroscience Minor.

>
> 3. Yes, I agree that fulfilling the Minor requirements is one of the
> reasons students sometimes take an extra semester, and the proposed
> changes may contribute to this trend. On the other hand, part of the
> [WINDOWS-1252?]student's coming of age at McGill should include
> weighing the advantages and disadvantages of their academic choices
> after seeking appropriate guidance from student advisors and others.
> Indeed some students do declare a minor in U1 and then subsequently
> opt out for reasons which probably include not wanting to take an
> extra semester. I know this to be the case for some students who are
> admitted to Honours. On the other hand some students manage a Minor
> and graduate on time by taking courses in the summer.

>

> Thanks again Alanna, and please let me know if you approve the
> proposed changes.
>
> Monroe
>
> _____
> From: Alanna Watt, Dr.
> Sent: October 24, 2014 4:22 PM
> To: Monroe W. Cohen
> Cc: Edward Ruthazer, Dr.; Gillian O'Driscoll, Prof.; Gillian O
> Driscoll; Joseph Dent, Prof.; Reza Sharif Naeini, Dr.; Josie D'Amico;
> Wendy Brett, Ms Subject: Re: Changes to the Neuroscience Minor - your
> approval required
>
> Dear Monroe-
>
> I think it is a good idea for students to take courses in many
> departments in general, and that this is particularly important for
> Neuroscience, which is so multi-disciplinary.
>
> However, I feel a bit reluctant to limit the number of courses that a
> student is able to take, especially at higher levels, for a few
> reasons explained below. But it may be because I am not 100% sure of
> the problem. Could you just clarify for me: when you credit overlap,
> do you mean that the students are using the same credits for both
> their major and their minor? I can see that this could narrow the
> breadth of their undergrad experience, so changing it should be in
> theory a good thing. However, I can think of a few possible drawbacks
> that I wanted to bring up.

- >
- > 1. Students may be most comfortable taking 400- or 500-level courses
- > in an area that they feel they have a stronger background in (closer
- > to their own field). That could lead to fewer students taking the
- > minor. [WINDOWS-1252?]I'm not sure if this is necessarily a problem
- > [WINDOWS-1252?]- we could argue that we want students to venture
- > outside their comfort zone in a Minor. It is really just a comment.
- >
- > 2. Are we sure that with this revision, we would not end up in the
- > situation where a Psych student who discovers a passion for sleep
- > research when they are taking their 200-level courses, would then not
- > be able to take the PSYC 444 (Sleep Mechanisms and Behaviour) because
- > he or she needs to take the course outside of their department? That
- > would be a pity, but I think what you are saying is that they student
- > should be able to still take this course as part of their Major. In
- > that case it should not be a problem.
- >
- > 3. Is it possible that students are taking courses to count towards
- > both their major and minor because they are unable to get all the
- > credits that they need within the allotted time otherwise? I have
- > talked to many students who taken an extra semester (or even extra
- > year) at the end of their degree to complete all the credits that they
- > need for their particular major and minor [WINDOWS-1252?]- I think
- > this is especially common for Honours students. This revision may
- > contribute to this trend as well. While many students seem happy to do
- > this, I worry that it puts a larger financial burden on foreign
- > students or students from less privileged backgrounds, and may be
- > prohibitive for them. Again, [WINDOWS-1252?]I'm not sure that this is
- > something that should be factored in when planning the Neuroscience

> minor curriculum, but I felt that it was worth mentioning.
>
> [WINDOWS-1252?]I'm glad to see that BIOL 580 (a new course that
> Michael Hendricks and I are teaching) is added to the curriculum for
> the Neuroscience minor, thanks!
>
> All my best,
> Alanna
>
>
> _____
> Alanna J. Watt, PhD
> Assistant Professor
>
> Department of Biology
> McGill University
> Bellini Building, Rm. 265
> 3469 Sir William Osler
> Montreal, Quebec H3G 0B1 CANADA
> 1 (514) 398- 2806
> <http://biology.mcgill.ca/faculty/watt/>
> _____
>
> On 24 Oct 2014, at 15:37, Monroe W. Cohen
> <monroe.cohen@mcgill.ca<<mailto:monroe.cohen@mcgill.ca>>> wrote:
>
> Dear Neuroscience Committee Members,
>
> In the current version of the Neuroscience Minor (24-25 credits),
> students may take up to 13 credits of courses in their home

> department. In order a) to reduce this large credit overlap between
> Neuroscience Minor and the [WINDOWS-1252?]student's major program and
> b) to encourage interdisciplinarity, we are proposing that in addition
> to completing the two introductory neuroscience courses (NSCI 200 and
> NSCI 201) the remaining 18-19 complementary credits be chosen from
> courses outside the [WINDOWS-1252?]student's department. For example,
> Biology students would not be allowed to choose Biology courses,
> Physiology students would not be allowed to Physiology courses, and
> Psychology students would not be allowed to choose Psychology courses.
>
> The attached file shows the current version of the Neuroscience Minor
> on the left and the proposed version on the right. The key changes are
> on p2 under Required Courses (6 credits) and under Complementary
> Courses (18 credits).
>
> [WINDOWS-1252?]I'm hoping to submit the proposal at the meeting of the
> Science Academic Committee this coming Tuesday. To do so, I need your
> approval by Monday (Oct 27). So kindly let me know by Monday if you approve.
>
> Thanks, and I apologize for the short notice.
>
> Monroe
> _____
> Monroe W Cohen, PhD
> Professor of Physiology
> Director, BSc Neuroscience Program
> Co-coordinator, Interdepartmental Honours Immunology
> Phone: 514-398-4342
> Fax: 514-398-7452

> Email: monroe.cohen@mcgill.ca<mailto:monroe.cohen@mcgill.ca>
>
> <Neuroscience Minor - Proposed Changes.pdf>
----- End of Original Message -----