

University of  
Lethbridge



Faculty of Arts & Science

## Program Planning Guide

**Department:** Neuroscience

**Calendar Year:** 2013/2014

**Name:** \_\_\_\_\_

**ID:** \_\_\_\_\_

**Bachelor of Science**  
**Neuroscience**

**Major in Neuroscience:**

[www.uleth.ca/artsci/neuroscience](http://www.uleth.ca/artsci/neuroscience)

**Faculty of Arts and Science Student Program Services:**

[www.uleth.ca/artsci/advising](http://www.uleth.ca/artsci/advising)  
[artsci.advising@uleth.ca](mailto:artsci.advising@uleth.ca)  
(403) 329-5106  
SU060

**Current and Past Program Planning Guides:**

[www.uleth.ca/ross/ppgs](http://www.uleth.ca/ross/ppgs)

**Academic Calendar:**

[www.uleth.ca/ross/academic-calendar](http://www.uleth.ca/ross/academic-calendar)

**Co-operative Education:**

[www.uleth.ca/artsci/coop](http://www.uleth.ca/artsci/coop)

This is a planning guide and not a graduation check or guarantee of course offerings. You should have a program check done in your final year of studies. Students are responsible for the accuracy of their own programs. The guide should be used in conjunction with the University of Lethbridge Calendar, which is the final authority on all questions regarding program requirements and academic regulations. Contact an Academic Advisor in the Faculty of Arts and Science for advising information.

**Name :** \_\_\_\_\_

**ID :** \_\_\_\_\_

**B.Sc. Neuroscience**

Completion of at least 40 courses (120.0 credit hours) with a grade point average of at least 2.00.

**Major Requirements (22 courses)**

- \_\_\_\_\_ Biology 1010 - Cellular Basis of Life
- \_\_\_\_\_ Biology 1020 - Diversity of Life
- \_\_\_\_\_ Biology 2000 - Principles of Genetics
- \_\_\_\_\_ Neuroscience 2600 - Brain and Behaviour
- \_\_\_\_\_ Neuroscience 3600 - Fundamental Neurobiology
- \_\_\_\_\_ Psychology 2320 - Cognition and Perception: Thinking and Seeing
- \_\_\_\_\_ Psychology 2700 - Behaviour and Evolution

**Three of:**

- \_\_\_\_\_ Biochemistry 2000 - Introductory Biochemistry
- \_\_\_\_\_ Biology 3000 - Gene Expression and Regulation
- \_\_\_\_\_ Biology 3105 - Signal Transduction
- \_\_\_\_\_ Biology 3310 - Developmental Biology
- \_\_\_\_\_ Biology 3400 - Principles of Microbiology
- \_\_\_\_\_ Neuroscience 3625 - Cellular and Molecular Neurobiology

**One of:**

- \_\_\_\_\_ Philosophy 2220 - Philosophy of Mind
- \_\_\_\_\_ Philosophy 2233 - Philosophy and the World View of Science: Earth and Life Sciences
- \_\_\_\_\_ <sup>1</sup>Philosophy 3270 - Theory of Knowledge
- \_\_\_\_\_ <sup>1</sup>Philosophy 3402 - Biomedical Ethics

**One of:**

- \_\_\_\_\_ Physics 1000 - Introduction to Physics I
- \_\_\_\_\_ Physics 1050 - Introduction to Biophysics

**One of:**

- \_\_\_\_\_ Neuroscience 4630 - Neuroscience (Series)
- \_\_\_\_\_ Neuroscience 4980 - Applied Studies
- \_\_\_\_\_ Neuroscience 4990 - Independent Study
- \_\_\_\_\_ <sup>2</sup>Neuroscience 4995 - Undergraduate Thesis

**One of:**

- \_\_\_\_\_ One course (3.0 credit hours) in English at the 1000 level or higher
- \_\_\_\_\_ Writing 1000 - Introduction to Academic Writing

**One of:**

- \_\_\_\_\_ Psychology 2030 - Methods and Statistics
- \_\_\_\_\_ Statistics 1770 - Introduction to Probability and Statistics

Two courses (6.0 credit hours) in Neuroscience or Psychology at the 3000/4000 level with a Science designation (see the 2013/2014 Calendar, List III: Science Courses, p. 90).

1. \_\_\_\_\_ 2. \_\_\_\_\_

**One of the following groups (a or b):**

**a.**

- \_\_\_\_\_ Biochemistry 2000 - Introductory Biochemistry
- \_\_\_\_\_ Chemistry 1110 - Chemistry for Life Sciences I
- \_\_\_\_\_ Chemistry 2120 - Chemistry for Life Sciences II

Two additional courses (6.0 credit hours) in Biology, Chemistry, Neuroscience, or Psychology at the 3000/4000 level with a Science Designation (See the 2013/2014 Calendar, List III: Science Courses, p. 90)

1. \_\_\_\_\_ 2. \_\_\_\_\_

**Note:** Students who choose this grouping may not choose Biochemistry 2000 as part of the "Three of" list left.

**OR**

**b.**

- \_\_\_\_\_ Chemistry 1000 - General Chemistry I
- \_\_\_\_\_ Chemistry 2000 - General Chemistry II
- \_\_\_\_\_ Chemistry 2500 - Organic Chemistry I
- \_\_\_\_\_ Chemistry 2600 - Organic Chemistry II

**One of:**

- \_\_\_\_\_ Mathematics 1410 - Elementary Linear Algebra
- \_\_\_\_\_ Mathematics 1560 - Calculus I

**Other Courses (minimum 18 courses)**

- |          |           |
|----------|-----------|
| 1. _____ | 10. _____ |
| 2. _____ | 11. _____ |
| 3. _____ | 12. _____ |
| 4. _____ | 13. _____ |
| 5. _____ | 14. _____ |
| 6. _____ | 15. _____ |
| 7. _____ | 16. _____ |
| 8. _____ | 17. _____ |
| 9. _____ | 18. _____ |

**Notes**

<sup>1</sup>Prerequisite required: One of Philosophy 1000 or a 2000-level course (3.0 credit hours) in Philosophy.

<sup>2</sup>If Neuroscience 4995 (6.0 credit hours) is chosen, the requirement for two additional courses at the 3000/4000 level in Neuroscience or Psychology with a Science designation is reduced to one additional such course.

It is strongly recommended that students who are planning to pursue graduate studies in the neurosciences consider the undergraduate thesis option and include Neuroscience 3605 and Psychology 3400 in their program.

See also:

- Bachelor of Science - Psychology

**Completion of the General Liberal Education Requirement (GLER).**

Only four courses (12.0 credit hours) in total may be counted from all courses offered by a single department. See the 2013/2014 Calendar, p. 88, for more information.

**LIST I: Fine Arts and Humanities Courses**

- 1. \_\_\_\_\_ 3. \_\_\_\_\_
- 2. \_\_\_\_\_ 4. \_\_\_\_\_

**LIST II: Social Science Courses**

- 1. \_\_\_\_\_ 3. \_\_\_\_\_
- 2. \_\_\_\_\_ 4. \_\_\_\_\_

**LIST III: Science Courses**

- 1. \_\_\_\_\_ 3. \_\_\_\_\_
- 2. \_\_\_\_\_ 4. \_\_\_\_\_

Not more than 12 courses (36.0 credit hours) may be completed at the 1000 level (or lower) [0500 - 1999] for credit towards the degree, excluding Activity courses (labelled PHAC and MUSE).

- 1. \_\_\_\_\_ 7. \_\_\_\_\_
- 2. \_\_\_\_\_ 8. \_\_\_\_\_
- 3. \_\_\_\_\_ 9. \_\_\_\_\_
- 4. \_\_\_\_\_ 10. \_\_\_\_\_
- 5. \_\_\_\_\_ 11. \_\_\_\_\_
- 6. \_\_\_\_\_ 12. \_\_\_\_\_

Completion of at least 15 courses (45.0 credit hours) from disciplines offered by the Faculty of Arts and Science or the Faculty of Fine Arts at the 3000/4000 level, excluding Activity courses (labelled PHAC and MUSE).

- 1. \_\_\_\_\_ 9. \_\_\_\_\_
- 2. \_\_\_\_\_ 10. \_\_\_\_\_
- 3. \_\_\_\_\_ 11. \_\_\_\_\_
- 4. \_\_\_\_\_ 12. \_\_\_\_\_
- 5. \_\_\_\_\_ 13. \_\_\_\_\_
- 6. \_\_\_\_\_ 14. \_\_\_\_\_
- 7. \_\_\_\_\_ 15. \_\_\_\_\_
- 8. \_\_\_\_\_

\_\_\_\_ Not more than five Independent Study courses (15.0 credit hours) may be completed for credit towards the degree.

\_\_\_\_ Not more than five Disciplinary Credit Applied Studies courses (15.0 credit hours) may be completed for credit towards the degree. Students may, in addition, complete Applied Studies 2000, 2001, 2010, and 2011.

\_\_\_\_ Not more than 24 courses (72.0 credit hours) may be completed from any one discipline for credit towards the degree.

**Note:** Disciplines are identified by a specific course label (e.g. KNES, ASTR, and HIST are separate disciplines).

\_\_\_\_ Not more than four Activity courses (i.e. courses labelled PHAC and MUSE; maximum 6.0 credit hours) may be completed for credit towards the degree, except for Kinesiology majors (not more than 10 Activity courses; 15.0 credit hours) and Music majors (not more than 8 Activity courses; 12.0 credit hours).

\_\_\_\_ Not more than four courses (12.0 credit hours) from disciplines offered outside the Faculty of Arts and Science or the Faculty of Fine Arts may be completed for credit towards the degree (i.e. labelled CDEV, CRED, EDUC, HLSC, MGT, NURS, and PUBH). Courses cross-listed between the Faculty of Arts and Science and another Faculty do not count towards this limit.

\_\_\_\_ **Residence requirement:**  
 Degree: at least 20 courses (60.0 credit hours) must be completed at the University of Lethbridge, including the last 10 courses (30.0 credit hours) completed for credit towards the degree.  
 Major: at least half of the courses required in the major must be completed at the University of Lethbridge.

**Minor (Optional):** \_\_\_\_\_

See the 2013/2014 Calendar, p. 143, for eligible minors.

- 1. \_\_\_\_\_ 4. \_\_\_\_\_
- 2. \_\_\_\_\_ 5. \_\_\_\_\_
- 3. \_\_\_\_\_ 6. \_\_\_\_\_

## Sample Sequencing Plan

Shown below is a sample sequence of courses for your degree. If you follow this plan, you should be able to graduate in four years, provided you complete five courses per semester. This is just one example of how you could complete your major and degree requirements; you may find that a different sequence works as well as this one.

<p><b>Year 1, Fall</b>                      Biology 1010                      Chemistry 1000                      Mathematics 1410 or                      Mathematics 1560                      GLER course                      GLER course</p>	<p><b>Year 1, Spring</b>                      Biology 1020                      Chemistry 2000                      Neuroscience 2600                      English 1900 or Writing 1000                      GLER course</p>
<p><b>Year 2, Fall</b>                      Chemistry 2500                      Biology 2000                      Psychology 2700                      Psychology 2320                      GLER course (<i>Philosophy 1000</i>  <i>recommended</i>)</p>	<p><b>Year 2, Spring</b>                      Chemistry 2600                      Physics 1000 or Physics 1050                      Psychology 2030 or                      Statistics 1770                      GLER course                      GLER course</p>
<p><b>Year 3, Fall</b>                      Neuroscience 3600                      One "Three of:" List requirement <sup>1</sup>                      Elective 3000/4000 level                      Elective 3000/4000 level                      Elective</p>	<p><b>Year 3, Spring</b>                      Philosophy requirement <sup>2</sup>                      One "Three of:" List requirement <sup>1</sup>                      Elective 3000/4000 level                      Elective 3000/4000 level                      Elective</p>
<p><b>Year 4, Fall</b>                      One "Three of:" List requirement <sup>1</sup>                      Neuroscience or Psychology 3000/                      4000 level (Science)                      Elective 3000/4000 level                      Elective 3000/4000 level                      Elective</p>	<p><b>Year 4, Spring</b>                      Neuroscience or Psychology 3000/                      4000 level (Science)                      One of: Neuroscience 4630, 4980,                      4990, or 4995 <sup>3</sup>                      Elective 3000/4000 level                      Elective 3000/4000 level                      Elective 3000/4000 level</p>

**Note:** The above sequence includes only courses from the second Chemistry group. Plan accordingly if you are interested in completing the courses from the first Chemistry group (see p. 3 of the Program Planning Guide).

<sup>1</sup> Students require Three of: Biochemistry 2000; Biology 3000, 3105, 3310, 3400; Neuroscience 3625. Semester of offering for these courses may vary. Please check with the Departments of Biological Sciences, Chemistry and Biochemistry, or Neuroscience, respectively.

<sup>2</sup> One of Philosophy 2220, 2233, 3270, or 3402 is required. Semester of offering may vary.

<sup>3</sup> As Neuroscience 4995 is a 6.0 credit course, students should register for it in the Fall.

## Terms Used

**GLER course:** A course that could count toward the General Liberal Education Requirement. You may use courses in your major towards this 12-course requirement. See the 2013/2014 University of Lethbridge Calendar, Part 4 - Academic Regulations (p. 88) for complete information.

The Faculty of Arts and Science offers Liberal Education 1000 and 2000, specifically designed to introduce first-year students to the wide scope of human knowledge and teach essential university success skills, critical thinking, and integrative thinking (see the 2013/2014 University of Lethbridge Calendar, Part 14 - Courses, p. 307). LBED 1000 and 2000 may be used toward satisfying the GLER.

**Elective:** A course that you may choose freely from all those available and applicable to your program. Use courses inside or outside your major, bearing in mind any restrictions that may apply (e.g., a maximum of 24 courses from any one discipline).

