

University of
Lethbridge



Program Planning Guide

Name: _____

ID: _____

Calendar Year: 2023/2024

Major in Biological Sciences:

www.ulethbridge.ca/artsci/biological-sciences

Academic Calendar:

www.ulethbridge.ca/ross/academic-calendar

High School Admission Requirements:

www.ulethbridge.ca/ross/admissions/undergrad/high-school

Current and Past Program Planning Guides:

www.ulethbridge.ca/ross/ppgs

Co-operative Education:

www.ulethbridge.ca/career-bridge/co-operative-education

Faculty of Arts and Science Advising:

www.ulethbridge.ca/artsci/advising
artsci.advising@uleth.ca
403-329-5106
M2102

Faculty of Education Advising:

www.ulethbridge.ca/education/student-advising
edu.sps@uleth.ca
403-329-2254
TH421

Biological Sciences/Science Education

Bachelor of Science/Bachelor of Education

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 (www.ulethbridge.ca/ross/academic-advising) for advising information.

Name : _____

ID : _____

Program Requirements

Completion of at least 30 courses (90.0 credit hours) from disciplines offered by the Faculty of Arts and Science, Faculty of Fine Arts, or School of Liberal Education with a grade point average of at least 2.00.

Completion of the equivalent of 20 courses (60.0 credit hours) in Education with a program grade point average of at least 2.50 in Education courses and the appropriate major.

Major Requirements (16 Courses)

- _____ Biochemistry 2000 - Introductory Biochemistry
- _____ Biology 1010 - Cellular Basis of Life
- _____ Biology 1020 - Diversity of Life
- _____ Biology 2000 - Principles of Genetics
- _____ Biology 2150 - Biostatistics
- _____ Biology 2200 - Principles of Ecology
- _____ Biology 2300 - Cell Biology
- _____ Biology 3300 - Evolution
- _____ Chemistry 1000 - General Chemistry I
- _____ Chemistry 2000 - General Chemistry II
- _____ Chemistry 2500 - Organic Chemistry I

One of:

- _____ Mathematics 1410 - Elementary Linear Algebra
- _____ Mathematics 1560 - Calculus I
- _____ Mathematics 1565 - Accelerated Calculus I

One of:

- _____ Physics 1000 - Introduction to Physics I
- _____ Physics 1050 - Introduction to Biophysics (preferred)

¹Three courses (9.0 credit hours) in Biology at the 3000 level, including one course (3.0 credit hours) from each of the following subfield lists:

One of (List 1 - Cellular and Molecular Biology)

- _____ Biochemistry 3100 - Proteins, Enzymes and Nucleic Acids
- _____ Biochemistry 3700/Neuroscience 3700 - Introduction to Bioinformatics
- _____ Biology 3000 - Gene Expression and Regulation
- _____ Biology 3005 - Genomes
- _____ Biology 3110 - Cell Signalling
- _____ Biology 3210 - Experimental Methods in Molecular and Cellular Biology
- _____ Biology 3400 - Principles of Microbiology

One of (List 2 - Organismal Biology)

- _____ Biology 3310 - Developmental Biology
- _____ Biology 3420 - Animal Physiology
- _____ Biology 3460 - Plant Physiology
- _____ Biology 3520 - Invertebrate Zoology
- _____ Biology 3530 - Vertebrate Zoology
- _____ Biology 3560 - Integrative Plant Biology

One of (List 3 - Ecology and Evolutionary Biology)

- _____ Biology 3095/Geography 3095 - Advanced Biogeography
- _____ Biology 3630 - Field Biology
- _____ Biology 3660 - Field Botany
- _____ Biology 3700 - Ecosystem Ecology
- _____ Biology 3710 - Population Biology
- _____ Biology 3720 - Community Ecology

Other Courses (minimum 14 courses)

Courses offered by the Faculty of Arts and Science, Faculty of Fine Arts, or School of Liberal Education only (no courses labelled ABHL, ACCT, ADCS, AGEM, CDEV, CRED, EDUC, FINC, HLSC, HRLR, IGBM, IMGT, MGT, MKTG, NURS, PUBH, or TREC unless cross-listed with a course from one of the above faculties)

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____

Education Requirements (20-course equivalent)

- _____ Education 2500 - Orientation to Teaching (3.0 credit hours)
- _____ Professional Semester I (15.0 credit hours)
- _____ Professional Semester II (15.0 credit hours)
- _____ Professional Semester III (15.0 credit hours)
- _____ Education Foundation (3.0 credit hours) at the 43xx level:

- _____ Three Education Electives (9.0 credit hours) at the 3000 or 4000 level:
1. _____
2. _____
3. _____

Recommended course:

Environmental Science 2000 - Fundamentals of Environmental Science

Notes

¹ Topics courses (Biology 3850) may be assigned to one of the Biological Sciences lists at the time of scheduling. Please refer to the current term timetable.

Completion of the Liberal Education List Requirement (Lib Ed Requirement)

Only four courses (12.0 credit hours) in total may be counted from any one discipline toward the Lib Ed Requirement. Disciplines are identified by separate course subject codes.

Only four courses (12.0 credit hours) in total from the Faculty of Education (EDUC), Faculty of Health Sciences (ABHL, ADCS, HLSC, NURS, PUBH, and TREC), and the Dhillon School of Business (ACCT, AGEM, FINC, HRLR, IGBM, IMGT, MGT, and MKTG) may be counted towards the Lib Ed Requirement, but could be deemed extra to program.

See the 2023/2024 Calendar, p. 83, for more information.

_____ Four Fine Arts and Humanities courses:

1. _____
2. _____
3. _____
4. _____

_____ Four Social Science courses:

1. _____
2. _____
3. _____
4. _____

_____ Four Science courses:

1. _____
2. _____
3. _____
4. _____

Not more than 10 courses (30.0 credit hours) completed at the 1000 level (or lower) [0500 - 1999] for credit towards the degree, excluding Activity courses (labelled PHAC and MUSE) and courses numbered in the range of 0520 to 0530.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

_____ **Education Minor (Optional):** _____

See the 2023/2024 Calendar, p. 159, for more information.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

(Education methods requirement)

Completion of at least 10 courses (30.0 credit hours) from disciplines offered by the Faculty of Arts and Science, Faculty of Fine Arts, or School of Liberal Education at the 3000 or 4000 level, excluding Activity courses (labelled PHAC and MUSE). Out-of-faculty courses (i.e. labelled ABHL, ACCT, ADCS, AGEM, CDEV, CRED, EDUC, FINC, HLSC, HRLR, IGBM, IMGT, MGT, MKTG, NURS, PUBH, and TREC) will not meet this requirement.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

_____ Not more than three Independent Study courses (9.0 credit hours) may be completed for credit towards the degree.

_____ Not more than three Disciplinary Credit Applied Studies courses (9.0 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 17 courses (51.0 credit hours) may be completed from any one discipline for credit towards the degree.

_____ Not more than six credit hours in Activity courses (i.e. courses labelled PHAC and MUSE) may be completed for credit towards the degree, except for Kinesiology majors (not more than 15.0 credit hours) and Music majors (not more than 12.0 credit hours).

_____ Residence requirement:

Degree: Arts and Science

at least 15 courses (45.0 credit hours) offered by the Faculty of Arts and Science, Faculty of Fine Arts, or School of Liberal Education must be completed at the University of Lethbridge.

Education

at least 15 courses (45.0 credit hours) offered by the Faculty of Education must be completed at the University of Lethbridge.

Major: at least half of the courses required in the major must be completed at the University of Lethbridge.

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

_____ **Education Specialization (Optional):** _____

See the 2023/2024 Calendar, p. 165, for more information.

1. _____
2. _____
3. _____
4. _____
5. _____

(Specialization Internship)

_____ **Concentration (Optional):** _____

See the 2023/2024 Calendar, p. 267, for more information.

1. _____
2. _____
3. _____
4. _____
5. _____

Sample Sequencing Plan

Shown below is a sample sequence of courses for your degree. Consult timetables for course offerings, prerequisites, and corequisites before registering each term. 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>Year 1, Fall Biology 1010 or Biology 1020 Chemistry 1000 Physics 1050 (<i>preferred</i>) Lib Ed Requirement course Lib Ed Requirement course</p>	<p>Year 1, Spring Biology 1020 or Biology 1010 Chemistry 2000 Mathematics Requirement Lib Ed Requirement course Lib Ed Requirement course</p>
<p>Year 2, Fall Biology 2150 Biology 2200 Chemistry 2500 Education 2500¹ Lib Ed Requirement course</p>	<p>Year 2, Spring Biochemistry 2000 Biology 2000 Biology 2300 Lib Ed Requirement course Lib Ed Requirement course</p>
<p>Year 3, Fall Professional Semester I</p>	<p>Year 3, Spring Biology 3300 Biology 3000 level Elective 3000/4000 level Elective 3000/4000 level Lib Ed Requirement course</p>
<p>Year 4, Fall Biology 3000 level Biology 3000 level Elective 3000/4000 level Elective 3000/4000 level Elective 3000/4000 level</p>	<p>Year 4, Spring Professional Semester II</p>
<p>Year 5, Fall Professional Semester III</p>	<p>Year 5, Spring Elective 3000/4000 level Education Foundation course (43xx) Education elective 3000/4000 level Education elective 3000/4000 level Education elective 3000/4000 level</p>
<p>Elementary Education and Inclusive Education students will reverse the fall and spring terms in Year 5 and complete PS III in the spring.</p>	

¹ Education 2500 must be completed (with a Pass Recommend) before admission. It may be taken in the spring or summer term immediately prior to the fall intake.

Note: Courses in **bold** in Years 1 and 2 of the sample sequence are prerequisite(s) for required courses and should be completed early in your program. Students are advised to review the prerequisites for elective courses within the major and plan accordingly.

Faculty of Education Admission

To be considered for admission to the Faculty of Education, successful completion of the following is required:

- _____ 14 graded term courses (42.0 credit hours).
- _____ **Education Admission GPA:** Minimum cumulative grade point average of 2.50 on all U of L and transferable courses taken within the terms containing the last 14 courses (42.0 credit hours). All courses must be graded.
- _____ Minimum of five courses (15.0 credit hours) in the major.
- _____ **Major GPA:** Minimum cumulative grade point average of 2.50 on all graded courses comprising the major, including all transferable courses.
- _____ Credit in Education 2500 - Orientation to Teaching (or equivalent) prior to the fall program intake, including a favourable recommendation from the instructor.

Students are advised to contact Student Program Services in the Faculty of Education (edu.sps@uleth.ca; TH421; tel. 403-329-2254) for guidelines regarding the requirements stated above. For specific information on admission requirements, please refer to the Combined Degrees section of the Academic Calendar:

www.ulethbridge.ca/ross/academic-calendar

Students of Indigenous descent, and students with a significant shift in academic performance, are advised to refer to the current Calendar for the Faculty of Education's Special Case Admission policies.

Combined Degrees Program:

Students begin this program in the Faculty of Arts and Science where they progress toward completion of Arts and Science degree requirements, and prepare to meet the admission requirements for the Faculty of Education. Please note that completion of admission requirements does not guarantee admission to the Faculty of Education.

Application and Document deadlines:

www.ulethbridge.ca/ross/admissions/undergrad/deadlines