

University of  
Lethbridge



## Program Planning Guide

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

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

Calendar Year: 2021/2022

**Major in Environmental Science:**

[www.uleth.ca/artsci/environmental-science](http://www.uleth.ca/artsci/environmental-science)

**Academic Calendar:**

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

**High School Admission Requirements:**

[www.uleth.ca/ross/admissions/undergrad/high-school](http://www.uleth.ca/ross/admissions/undergrad/high-school)

**Current and Past Program Planning Guides:**

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

**Co-operative Education:**

[www.uleth.ca/career-bridge/co-operative-education](http://www.uleth.ca/career-bridge/co-operative-education)

**Faculty of Arts and Science Advising:**

[www.uleth.ca/artsci/advising](http://www.uleth.ca/artsci/advising)  
artsci.advising@uleth.ca  
403-329-5106  
M2102

# Bachelor of Science Environmental Science

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.uleth.ca/ross/academic-advising](http://www.uleth.ca/ross/academic-advising)) for advising information.

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

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

**Program Requirements**

Completion of at least 40 courses (120.0 credit hours) with cumulative and graduation grade point averages of at least 2.00.

**Major Requirements (24 courses)**

- \_\_\_\_\_ Biology 1010 - Cellular Basis of Life
- \_\_\_\_\_ Biology 1020 - Diversity of Life
- \_\_\_\_\_ Biology 2000 - Principles of Genetics
- \_\_\_\_\_ Biology 2200 - Principles of Ecology
- \_\_\_\_\_ Biology 3300 - Evolution
- \_\_\_\_\_ Chemistry 1000 - General Chemistry I
- \_\_\_\_\_ Chemistry 2000 - General Chemistry II
- \_\_\_\_\_ Environmental Science 2000 - Fundamentals of Environmental Science
- \_\_\_\_\_ Environmental Science 4000 - Selected Studies in Environmental Science II (Series)
- \_\_\_\_\_ Geography 1000 - Introduction to Physical Geography
- \_\_\_\_\_ Geography 2030 - Geomorphology
- \_\_\_\_\_ Geography 2300 - Weather and Climate
- \_\_\_\_\_ Geography 2735 - Introduction to Geographical Information Science

**One of:**

- \_\_\_\_\_ Biology 2150 - Biostatistics
- \_\_\_\_\_ Geography 2700 - Geographical Data and Analysis

**One of:**

- \_\_\_\_\_ Chemistry 2410 - Analytical Chemistry I
- \_\_\_\_\_ 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

**Three of:**

- \_\_\_\_\_ Geography 2090 - Biogeography
- \_\_\_\_\_ Geography 3035 - Fluvial Geomorphology
- \_\_\_\_\_ Geography 3060 - Glaciology and Glacial Geomorphology
- \_\_\_\_\_ Geography 3080 - Soils
- \_\_\_\_\_ Geography 3300 - Microclimatology
- \_\_\_\_\_ Geography 3400 - Hydrology
- \_\_\_\_\_ Geography 3720 - Remote Sensing
- \_\_\_\_\_ Geography 3740 - Geographical Information Systems
- \_\_\_\_\_ Geography 4400 - Advanced Hydrology
- \_\_\_\_\_ Geography 4415 - Integrated Watershed Management
- \_\_\_\_\_ Geography 4730 - Spatial Statistics
- \_\_\_\_\_ Geology 2060 - Physical Geology

**Three of (at least two must be offered with a lab):**

- \_\_\_\_\_ Biology 3460 - Plant Physiology
- \_\_\_\_\_ Biology 3520 - Invertebrate Zoology
- \_\_\_\_\_ Biology 3530 - Vertebrate Zoology
- \_\_\_\_\_ Biology 3560 - Integrative Plant Biology
- \_\_\_\_\_ Biology 3630 - Field Biology
- \_\_\_\_\_ Biology 3660 - Field Botany
- \_\_\_\_\_ Biology 3700 - Ecosystem Ecology
- \_\_\_\_\_ Biology 3710 - Population Biology
- \_\_\_\_\_ Biology 3720 - Community Ecology
- \_\_\_\_\_ Biology 4605 - Conservation Biology
- \_\_\_\_\_ Biology 4700 - Molecular Ecology
- \_\_\_\_\_ Biology 4710 - Evolutionary and Ecological Modelling
- \_\_\_\_\_ Biology 4740 - Behavioural Ecology
- \_\_\_\_\_ Biology 4800 - Biology of Parasitism
- \_\_\_\_\_ Biology 4840 - Limnology

**One of:**

- \_\_\_\_\_ Biology 3630 - Field Biology
- \_\_\_\_\_ Biology 3660 - Field Botany
- \_\_\_\_\_ Geography 3710 - Field Techniques in the Earth Sciences
- \_\_\_\_\_ <sup>1</sup>Geography 3780 - Field Research in Geography
- \_\_\_\_\_ Geography 3792 - Field Excursion in Physical Geography (Series)
- \_\_\_\_\_ <sup>2</sup>An approved field course

**Technical Studies Term (five courses)**

- \_\_\_\_\_ Environmental Science 2000 unspecified
- \_\_\_\_\_ Environmental Science 2000 unspecified
- \_\_\_\_\_ Environmental Science 2000 unspecified
- \_\_\_\_\_ Environmental Science 3000 unspecified
- \_\_\_\_\_ Environmental Science 3000 unspecified

**Other Courses (minimum 11 courses)**

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2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
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9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_

<sup>1</sup>Prerequisite required: Geography 1200.

<sup>2</sup>Must be approved by the Coordinator of Environmental Science.

Students may not receive credit for courses at the University of Lethbridge for which close equivalents have been taken at Lethbridge College, and vice versa. Students must ensure that their course selection has been approved by the Coordinator of Environmental Science.

**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.

See the 2021/2022 Calendar, p. 79, for more information.

\_\_\_\_\_ Four Fine Arts and Humanities courses:

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

\_\_\_\_\_ Four Social Science courses:

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3. \_\_\_\_\_
4. \_\_\_\_\_

\_\_\_\_\_ Four Science courses:

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2. \_\_\_\_\_
3. \_\_\_\_\_
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) and courses numbered in the range of 0520 to 0530.

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12. \_\_\_\_\_

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

See the 2021/2022 Calendar, p. 317, for more information.

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6. \_\_\_\_\_

Completion of at least 15 courses (45.0 credit hours) from disciplines offered by the Faculty of Arts and Science, Faculty of Fine Arts, or the School of Liberal Education at the 3000/4000 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.

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14. \_\_\_\_\_
15. \_\_\_\_\_

\_\_\_\_\_ 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.

\_\_\_\_\_ 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).

\_\_\_\_\_ Not more than six courses (18.0 credit hours) from disciplines outside the Faculty of Arts and Science, Faculty of Fine Arts, or School of Liberal Education may be completed for credit towards the degree (i.e. labelled ABHL, ACCT, ADCS, AGEM, CDEV, CRED, EDUC, FINC, HLSC, HRLR, IGBM, IMGT, MGT, MKTG, NURS, PUBH, and TREC). Courses cross-listed between the Faculty of Arts and Science and another Faculty do not count towards this limit.

\_\_\_\_\_ Residence requirement:

**Degree:** a minimum of 20 courses (60.0 credit hours) must be completed at the University of Lethbridge, including 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 3000/4000 level.

**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).*

\_\_\_\_\_ **Concentration: Geographical Information Science (Optional)**

See the 2021/2022 Calendar, p. 113, for more information.

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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><b>Year 1, Fall</b>                      Biology 1020 or Biology 1010                      Chemistry 1000                      Geography 1000                      Mathematics/Statistics requirement                      Lib Ed Requirement course</p>	<p><b>Year 1, Spring</b>                      Biology 1010 or Biology 1020                      Chemistry 2000                      Environmental Science 2000                      Geography 2735                      Physics 1000 or Physics 1050</p>
<p><b>Year 2, Fall</b>                      Biology 2200                      Chemistry 2410 or Chemistry 2500                      Geography 2030                      Geography 2300                      Lib Ed Requirement course</p>	<p><b>Year 2, Spring</b>                      Biology 2000                      Biology 2150 or Geography 2700                      Geography or Geology list course                      Lib Ed Requirement course                      Lib Ed Requirement course</p>
<p><b>Year 3, Fall</b>                      Biology list course (lab-based)                      Geography or Geology 3000/4000-level list course                      Field course                      Lib Ed Requirement course                      Lib Ed Requirement course</p>	<p><b>Year 3, Spring</b>                      Technical Studies Term<sup>1</sup> (15.0 credit hours)                      Students will receive credit for the following (upon successful completion and receipt of transcript):</p> <ul style="list-style-type: none"> <li>• 2 Environmental Science 3000-level courses</li> <li>• 3 Environmental Science 2000-level courses</li> </ul>
<p><b>Year 4, Fall</b>                      Biology list course (lab-based)                      Environmental Science 4000                      Geography or Geology 3000/4000-level list course                      Lib Ed Requirement course 3000/4000 level                      Elective 3000/4000 level</p>	<p><b>Year 4, Spring</b>                      Biology 3300                      Biology list course                      Lib Ed Requirement course 3000/4000 level                      Elective 3000/4000 level                      Elective 3000/4000 level</p>

<sup>1</sup> If the Technical Studies Term is assigned for Fall, Year Three, students should follow the Fall, Year Three sequence in Spring, Year Three.

**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.

Students should complete Biology 1010, Biology 1020, Biology 2000, Biology 2200, Chemistry 1000, and Chemistry 2000 by the end of Year Two to be eligible to undertake the required Technical Studies Term in Year Three.

