

University of
Lethbridge



Program Planning Guide

Departments: Biological Sciences, Chemistry and Biochemistry, and Economics

Calendar Year: 2019/2020

Name: _____

ID: _____

Bachelor of Science
Agricultural Biotechnology

Major in Agricultural Biotechnology:

www.uleth.ca/artsci/agricultural-biotechnology

Academic Calendar:

www.uleth.ca/ross/academic-calendar

High School Admission Requirements:

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

Current and Past Program Planning Guides:

www.uleth.ca/ross/ppgs

Faculty of Arts and Science Advising:

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

Co-operative Education:

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. Agricultural Biotechnology

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

Major Requirements (23 courses)

- _____ 1. Agricultural Studies 1000 - The Evolution of Agriculture
- _____ 2. Biochemistry 2000 - Introductory Biochemistry
- _____ 3. Biology 1010 - Cellular Basis of Life
- _____ 4. Biology 1020 - Diversity of Life
- _____ 5. Biology 2000 - Principles of Genetics
- _____ 6. Biology 2200 - Principles of Ecology
- _____ 7. Biology 3000 - Gene Expression and Regulation
- _____ 8. Biology 3105 - Signal Transduction
- _____ 9. Biology 3210 - Experimental Methods in Molecular and Cellular Biology
- _____ 10. Biology 3300 - Evolution
- _____ 11. Biology 3400 - Principles of Microbiology
- _____ 12. Biology 4100 - Advances in Agricultural Biotechnology
- _____ 13. Chemistry 1000 - General Chemistry I
- _____ 14. Chemistry 2000 - General Chemistry II
- _____ 15. Chemistry 2500 - Organic Chemistry I
- _____ 16. Chemistry 2600 - Organic Chemistry II
- _____ 17. Economics 1010 - Introduction to Microeconomics
- _____ 18. Economics 3300 - Agricultural Policy I

- _____ 19. **One of:**
 - _____ Biology 3005 - Genome Maintenance
 - _____ Biology 3115 - Principles of Cell Growth

- _____ 20. **One of:**
 - _____ Biology 3420 - Animal Physiology
 - _____ Biology 3460 - Plant Physiology

- _____ 21. **One of:**
 - _____ Economics 2150 - Economics of Agricultural Issues
 - _____ Economics 2350 - Economics of Agricultural Markets I

- _____ 22. **One of:**
 - _____ Mathematics 1410 - Elementary Linear Algebra
 - _____ Mathematics 1560 - Calculus I
 - _____ Mathematics 1565 - Accelerated Calculus I

- _____ 23. **One of:**
 - _____ Physics 1000 - Introduction to Physics I
 - _____ Physics 1050 - Introduction to Biophysics

Other Courses (minimum 17 courses)

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

Recommended courses:

- Neuroscience 2600 - Brain and Behaviour
- Neuroscience 3600 - Fundamental Neurobiology
- Statistics 1770 - Introduction to Probability and Statistics

Notes

Students are advised to complete both Biology 3005 and Biology 3115 as part of their Agricultural Biotechnology major (only one of these is required).

A student who successfully completes this degree program and major may apply to the Alberta Institute of Agrologists (AIA) to be registered as a Professional Agrologist within Alberta. Students should contact the Coordinator of Agricultural Biotechnology early in the program for further information.

See also:

- Pre-Professional Transfer Programs
- Bachelor of Science - Biological Sciences
- Bachelor of Science - Biochemistry
- Bachelor of Science - 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 (MGT) may be counted towards the Lib Ed Requirement.

See the 2019/2020 Calendar, p. 83, 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) and courses numbered in the range of 0520 to 0530.

- | | |
|----------|------------------|
| 1. _____ | 7. _____ |
| 2. _____ | 8. _____ |
| 3. _____ | 9. _____ |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ | 12. _____ (max.) |

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, ADCS, CDEV, CRED, EDUC, HLSC, MGT, NURS, PUBH, and TREC) will not meet this requirement.

- | | |
|----------|------------------|
| 1. _____ | 9. _____ |
| 2. _____ | 10. _____ |
| 3. _____ | 11. _____ |
| 4. _____ | 12. _____ |
| 5. _____ | 13. _____ |
| 6. _____ | 14. _____ |
| 7. _____ | 15. _____ (min.) |
| 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 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, ADCS, CDEV, CRED, EDUC, HLSC, MGT, 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.

Minor (Optional): _____
See the 2019/2020 Calendar, p. 277, for more information.

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

Concentration: Agricultural Business (Optional)
See the 2019/2020 Calendar, p. 98, for more information.

- | | |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | |

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 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 Agricultural Studies 1000 Biology 1010 or Biology 1020 Chemistry 1000 Economics 1010 Mathematics 1410, 1560, or 1565</p>	<p>Year 1, Spring Biology 1020 or Biology 1010 Chemistry 2000 Physics 1000 or Physics 1050 Lib Ed Requirement course Lib Ed Requirement course</p>
<p>Year 2, Fall Biology 2000 Biology 2200 Chemistry 2500 Economics 2150 or Economics 2350 Lib Ed Requirement course</p>	<p>Year 2, Spring Biochemistry 2000 Biology 3400 Chemistry 2600 Statistics 1770 (<i>recommended</i>) Lib Ed Requirement course</p>
<p>Year 3, Fall Biology 3000 Biology 3005¹ Biology 3105 Economics 3300 Elective</p>	<p>Year 3, Spring Biology 3115¹ Biology 3300 Elective 3000/4000 level Elective 3000/4000 level Elective</p>
<p>Year 4, Fall Biology 3210 Biology 3420 or Biology 3460² Elective 3000/4000 level Elective Elective</p>	<p>Year 4, Spring Biology 4100² Elective 3000/4000 level Elective 3000/4000 level Elective Elective</p>

¹ Students are required to complete one of Biology 3005 or Biology 3115, but are advised to take both of these courses.

² Term of offering may vary.

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 electives courses within the major and plan accordingly.

Students choosing to complete requirements for the Concentration in Agricultural Business should choose those prescribed courses in place of Elective courses.

Students are strongly advised to consult with the Department of Biological Sciences and the Department of Chemistry and Biochemistry regarding the sequencing of the above courses.

Terms Used

Lib Ed Requirement course: A course that could count toward the Liberal Education List Requirement. You may use courses in your major towards this 12-course requirement. See the 2019/2020 University of Lethbridge Calendar, School of Liberal Education for complete information.

The School of Liberal Education 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 2019/2020 University of Lethbridge Calendar, Course Catalogue). LBED 1000 and 2000 may be used toward satisfying the Lib Ed Requirement.

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).

