



Program Planning Guide

Current and past Program Planning Guides are available on the UofL website at www.uleth.ca/ross/ppgs/ppg.html

Calendar Year: 2010/2011

Faculty: Arts & Science

About the Multidisciplinary Major in Agricultural Studies for the B.Sc.

The multidisciplinary major in Agricultural Studies for the B.Sc. includes courses in Agricultural Studies, Biological Sciences, and Geography.

Alberta Institute of Agrologists (AIA)

This program has been recognized by the Alberta Institute of Agrologists (AIA) which is the provincial organization representing agrologists. Students who complete a University of Lethbridge B.Sc. degree with the major in Agricultural Studies will have a degree recognized by the AIA.

Where to Go for More Information

Students should contact the Coordinator of Agricultural Studies and the Student Program Services Office (SU060 | phone: 403-329-5106) for further information.

Co-operative Education

A Co-op option, requiring three work terms, is available. Students interested in the Co-operative Education/Internship program should contact the Coordinator of Co-operative Education in the Career Resources Centre (B610 | phone: 403-382-7154) for further information.

High School Courses

Several university-level science courses have high school-level courses as recommended background or prerequisites. Students are advised to complete recommended background courses before registering in the university-level course; students must have successfully completed prerequisites before they may register in the university-level course. Students pursuing an Agricultural Studies major should note the following recommended/required high school courses.

UofL Science course	High School course
Biology 1010	Biology 30 and Chemistry 30**
1020	<i>Recommended: Biology 30</i>
2000	Pure Mathematics 30* (and Biology 1010 and Biology 1020)
2200	Pure Mathematics 30* (and Biology 1010 and Biology 1020)
Chemistry 1110	<i>Recommended: Chemistry 30** and Pure Mathematics 30*</i>
Computer Science 1620	Pure Mathematics 30*
Mathematics 1560	Pure Mathematics 30*
	<i>Recommended: Mathematics 31 and a blended grade of at least 75% in Pure Mathematics 30*</i>
Physics 1050	Pure Mathematics 30*
	<i>Recommended: One course in the physical sciences at the 20 level or above</i>
Statistics 1770	Pure Mathematics 30*

* Instead of Pure Mathematics 30, students may use UofL's Mathematics 0500, or both Applied Mathematics 30 and a minimum grade of 75% in Athabasca University's Mathematics 101.

** Instead of Chemistry 30, students may use UofL's Chemistry 0500.

Program Requirements

The B.Sc. degree with a multidisciplinary major in Agricultural Studies requires 40 semester courses, including 20 courses in the major. Students in this program must complete, in addition to the 20-course major, a Technical Studies Semester of practical agricultural training (equivalent of five courses, 15.0 credit hours) at an approved college.

Transfer Credit

Remember that you may use both University of Lethbridge credit and credit transferred from another college or university to meet degree and major requirements. Transfer credit may be either specified or unspecified. Specified credit is indicated on your transcript by the subject name and the specific number of the course, e.g., Biology 1010, 2000, etc. Unspecified credit (1XXX, 2XXX, etc.) is indicated by the subject name and level of the course in parentheses, e.g., Biology (1000 level), Biology (2000 level), etc.

Unspecified Course Credit

Unspecified course credit means that the University of Lethbridge does not offer the same course you transferred in, but we recognize it and treat it as a regular course. An unspecified course would count as one of your maximum of 20 from one department, but it could not meet a specific course requirement. For example, if Biology 1020 is required in your program, you could not use Biology (1000 level) to fulfill that requirement. Students with unspecified transfer credit need to consult an Academic Advisor to establish how the transfer credit fits in the degree program. This should be done as soon as possible after transfer credit is awarded.

Required Courses

Students must complete a total of 20 courses for the major: a core of 12 courses plus eight courses from the subfields, as indicated below.

Program Worksheet

Name : _____

ID : _____

Required Core (12 courses):

- _____ 1. Agricultural Studies 1000 - The Evolution of Agriculture
- _____ 2. Agricultural Studies 3300 - Modelling of Agricultural Systems
- _____ 3. Agricultural Studies 4000 - Seminars in Agricultural Issues Series
- _____ 4. Agricultural Studies 4300 - Advanced Modelling of Agricultural Systems
- _____ 5. Biology 1010 - Cellular Basis of Life
- _____ 6. Biology 1020 - Diversity of Life
- _____ 7. Biology 2000 - Principles of Genetics
- _____ 8. Chemistry 1110 - Chemistry for Life Sciences I
- _____ 9. Economics 1010 - Introduction to Microeconomics
- _____ 10. Geography 1000 - Introduction to Physical Geography
- _____ 11. Statistics 1770 - Introduction to Probability and Statistics
- _____ 12. ONE of:
 - _____ Computer Science 1620 - Fundamentals of Programming I
 - _____ Mathematics 1560 - Calculus I
 - _____ Physics 1050 - Introduction to Biophysics

- _____ Biology 3520 - Invertebrate Zoology
- _____ Biology 3530 - Vertebrate Zoology
- _____ Biology 3560 - Integrative Plant Biology
- _____ Biology 3610 - Prairie Conservation
- _____ Biology 3700 - Ecosystem and Community Ecology
- _____ Biology 4100 - Advances in Agricultural Biotechnology
- _____ Biology 4110 - Advances in Genetics, Molecular and Cellular Biology
- _____ **Biology 4170 - Plant Biotechnology
- _____ Biology 4560 - Plant Development
- _____ Chemistry 2120 - Chemistry for Life Sciences II
- _____ Environmental Science 2000 - Fundamentals of Environmental Science

*Prerequisite required: Biochemistry 2000.

**Prerequisite required: Biology 3210.

Note: Applied Studies, Independent Studies and Special Topics courses may be used to fulfill requirements in the Biological Sciences Subfield with the permission of the Coordinator of Agricultural Studies. Students are encouraged to consider such courses as electives in their degree programs.

B. Geography Subfield:

- _____ Environmental Science 2000 - Fundamentals of Environmental Science
- _____ Geography 2030 - Geomorphology
- _____ Geography 2300 - Weather and Climate
- _____ *Geography 2700 - Geographical Data and Analysis
- _____ Geography 2735 - Introduction to Geographical Information Science
- _____ Geography 3075 - Environmental Resources Management
- _____ Geography 3080 - Soils
- _____ Geography 3210 - Agricultural Geography
- _____ Geography 3400 - Hydrology I
- _____ Geography 3700 - Cartography
- _____ *Geography 3720 - Remote Sensing
- _____ *Geography 3740 - Geographical Information Systems
- _____ Geography 4060 - Agricultural Soil Management
- _____ Geography 4065 - Irrigation Science
- _____ Geography 4200 - Project in Agricultural Geography
- _____ Geography 4400 - Hydrology II
- _____ Geography 4415 - Integrated Watershed Management
- _____ Geography 4725 - Advanced Remote Sensing
- _____ Geography 4740 - Advanced Geographical Information Systems
- _____ Geology 2060 - Physical Geology

*Required prerequisites for the Concentration in Geographical Information Science.

Note: Applied Studies, Independent Studies and Special Topics courses may be used to fulfill requirements in the Geography subfield provided:

1. They are clearly related to the subfield; and,
2. They are approved by the Coordinator of the program.

Note: Students should refer to the current Calendar to ensure they have completed the prerequisites for the above courses.

Subfields:

The remaining EIGHT courses must include:

- _____ 1. At least SIX courses from one of the following subfields (Biological Sciences or Geography).
- _____ 2. At least TWO courses from the other subfield.
- _____ 3. At least FOUR courses must be at the 3000/4000 level:
 1. _____
 2. _____
 3. _____
 4. _____

A. Biological Sciences Subfield:

- _____ Biology 2200 - Principles of Ecology
- _____ Biology 3000 - Gene Expression and Regulation
- _____ Biology 3105 - Signal Transduction
- _____ *Biology 3310 - Developmental Biology
- _____ Biology 3400 - Principles of Microbiology
- _____ Biology 3420 - Animal Physiology
- _____ Biology 3460 - Plant Physiology
- _____ Biology 3505 - Freshwater Biology

Additional Information and Requirements

Students may not receive credit for courses at the University of Lethbridge for which close equivalents have been taken at an approved college. Students must ensure that their course selection has been approved by the Coordinator of Agricultural Studies.

Students desiring recognition in professional societies are advised to include an ethics course in their electives (such as Philosophy 3402 - Biomedical Ethics).

Technical Studies Semester

Students are required to complete a semester of study at an approved college. The Technical Studies Semester counts as the equivalent of 15.0 credit hours at the University of Lethbridge (i.e., three unspecified 2000-level and two unspecified 3000-level Agricultural Studies courses).

The Technical Studies Semester should be taken after at least 20 university courses have been completed and prior to registration in the final 10 courses for the degree.

Students must have the college course selection approved by the Coordinator of Agricultural Studies. Further details are available from the Coordinator.

Note: *The 15.0 credit hours of the Technical Studies Semester will count as science for the Divisional Course Designation requirement.*

Concentration: Agricultural Business

Agricultural Studies majors in the B.Sc. degree program may declare a Concentration in Agricultural Business.

Students must complete a minimum of FIVE courses for the Concentration in Agricultural Business.

Required courses include:

- _____ Management 2100 - Introductory Accounting
- _____ Management 3020 - Marketing
- _____ THREE of:
 - _____ Economics 3030 - Managerial Economics
 - _____ Economics 3080/Management 3780 - Principles of Industrial Organization
 - _____ Management 3010 - Management Law
 - _____ Political Science 2410 - Public Administration
 - _____ *Political Science 3420/Management 3050 - Human Resource Management

**Has prerequisites: Students should choose Political Science 2410 for this concentration and also need to complete Writing 1000 or a university English course (3.0 credit hours).*

For students who complete all requirements, the Concentration in Agricultural Business will be acknowledged on the official transcript.

Concentration: Geographical Information Science

Agricultural Studies majors in the B.Sc. degree program may declare a Concentration in Geographical Information Science.

Required courses include:

- _____ FOUR of:
 - _____ *Geography 3700 - Cartography OR Geography 4730 - Spatial Statistics
 - _____ *Geography 4400 - Hydrology II OR *Geography 4415 - Integrated Watershed Management OR Geography 4750 - Glacial Processes, Measurements, and Models
 - _____ Geography 4700 - Advanced Computer Mapping
 - _____ Geography 4710 - Remote Sensing Field School
 - _____ *Geography 4725 - Advanced Remote Sensing
 - _____ *Geography 4740 - Advanced Geographical Information Systems
 - _____ Geography 4751 - Seminar in Spatial Modelling
 - _____ Geography 4752 - Seminar in Geographical Information Systems
 - _____ Geography 4753 - Seminar in Remote Sensing
- _____ Required Cognate:
 - _____ Computer Science 1620 - Fundamentals of Programming I

**Students may not double count courses required for the Concentration in Geographical Information Science in fulfilling requirements for the Geography subfield. In such cases, students must select another option from the subfield list.*

For students who complete all the requirements, the Concentration in Geographical Information Science will be acknowledged on the official transcript.

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.

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 2010/2011 University of Lethbridge Calendar, Part 4 - Academic Regulations (p. 85) 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 2010/2011 University of Lethbridge Calendar, Part 14 - Courses, p. 306). 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 20 courses from any one department).

With Biological Sciences as the Six-Course Subfield

Year 1, Fall

Agricultural Studies 1000
Biology 1010
Economics 1010
Geography 1000
One of: Computer Science 1620,
Mathematics 1560, Physics 1050

Year 2, Fall

Biology 2000
Biology 2200 (Main Subfield
course)
Chemistry 1110
GLER course (List I)
GLER course (List II)

Year 3, Fall

Agricultural Studies 3300
Main Subfield course 3000/4000
level
Science elective
Elective
Elective

Year 4, Fall

Main Subfield course 3000/4000
level
Main Subfield course
Science elective 3000/4000 level
Science elective
Elective

Year 1, Spring

Biology 1020
Statistics 1770
Second Subfield course
GLER course (List I)
GLER course (List II)

Year 2, Spring

Main Subfield course 3000/4000
level
Second Subfield course
GLER course (List I)
Science elective
Elective

Year 3, Spring

Technical Studies Semester (15.0
credit hours)
Students will receive credit for the
following (upon successful
completion and receipt of
transcripts):
• 2 Agricultural Studies 3000-level
science courses
• 3 Agricultural Studies 2000-level
science courses

Year 4, Spring

Agricultural Studies 4000
Agricultural Studies 4300¹
Main Subfield course 3000/4000
level
Elective
Elective

With Geography as the Six-Course Subfield

Year 1, Fall

Agricultural Studies 1000
Biology 1010
Economics 1010
Geography 1000
One of: Computer Science 1620,
Mathematics 1560, Physics 1050

Year 2, Fall

Biology 2000
Chemistry 1110
Main Subfield course 2000 level
Science elective
Elective

Year 2, Spring

Agricultural Studies 3300
Main Subfield course 3000/4000
level
Second Subfield course
Science elective
Elective

Year 4, Fall

Main Subfield course 3000/4000
level
Main Subfield course 3000/4000
level
Science elective 3000/4000 level
Elective
Elective

Year 1, Spring

Biology 1020
Main Subfield course 2000 level
GLER course (List I)
GLER course (List II)
GLER course (List II)

Year 2, Spring

Statistics 1770
Second Subfield course
GLER course (List I)
GLER course (List II)
Elective

Year 3, Spring

Technical Studies Semester (15.0
credit hours)
Students will receive credit for the
following (upon successful
completion and receipt of
transcripts):
• 2 Agricultural Studies 3000-level
science courses
• 3 Agricultural Studies 2000-level
science courses

Year 4, Spring

Agricultural Studies 4000
Agricultural Studies 4300¹
Main Subfield course 3000/4000
level
Elective
Elective

¹ Semester of offering may vary. Students should consult the Coordinator of Agricultural Studies regarding the semester of offering of this course.

Note: Students choosing to complete requirements for the Concentration in Agricultural Business should choose those prescribed courses in place of non-science electives. Courses in Economics or Political Science from the "Three of" list will also fulfill List II: Social Science Courses for the General Liberal Education Requirement.

Students choosing to complete requirements for the Concentration in Geographical Information Science should choose those prescribed courses in place of science electives.

Reminder: For the B.Sc., students must include, among the 40 courses, at least 25 courses from the list Science Courses (2010/2011 Calendar, Part 7, Section 20, p. 112 and Part 4, Section 11, List III: Science Courses, p. 87).

¹ Semester of offering may vary. Students should consult the Coordinator of Agricultural Studies regarding the semester of offering of this course.

Note: Students choosing to complete requirements for the Concentration in Agricultural Business should choose those prescribed courses in place of non-science electives. Courses in Economics or Political Science from the "Three of" list will also fulfill List II: Social Science Courses for the General Liberal Education Requirement.

Students choosing to complete requirements for the Concentration in Geographical Information Science should choose those prescribed courses in place of science electives.

Reminder: For the B.Sc., students must include, among the 40 courses, at least 25 courses from the list Science Courses (2010/2011 Calendar, Part 7, Section 20, p. 112 and Part 4, Section 11, List III: Science Courses, p. 87).

