

AGROECOLOGY, B.SC.

Overview/Entrance Requirements

The Agroecology program provides students with an understanding of the natural processes in the agroecosystem and the impact of agricultural practices on these processes. The program emphasizes three areas: ecological sciences, agricultural production, and the social and economic implications of environmental management. Students will develop an understanding of how to manage natural and agricultural resources in a manner that enhances economic production while maintaining the integrity of natural and agricultural environments. Graduates are prepared for careers at the technical and management levels in government and non-government agencies involved in planning and management of natural and agricultural resources. By appropriate choice of free elective courses, students can prepare for graduate studies.

Degree Requirements

Course	Title	Hours
B.Sc. Agroecology Degree Core		
ABIZ 1000	Introduction to Agribusiness Management	3
ABIZ/ECON 2390	Introduction to Environmental Economics	3
AGEC 2370/ BIOL 2300	Principles of Ecology	3
AGRI 1600	Introduction to Agrifood Systems	3
AGRI 2030	Technical Communications	3
AGRI 2400	Experimental Methods in Agricultural and Food Sciences	3
AGRI 4100	Current Issues in Agricultural Systems	3
ANSC 2500	Animal Production	3
BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interactions	3
BIOL 3312	Community Ecology	3
CHEM 1100	Introductory Chemistry 1: Atomic and Molecular Structure and Energetics	3
CHEM 1130 or CHEM 1110	Introduction to Organic Chemistry ¹ Introductory Chemistry 2: Interaction, Reactivity, and Chemical Properties	3
ECON 1010	Introduction to Microeconomic Principles	3
ENTM 3170	Crop Protection Entomology	3
HNSC 1200 or HNSC 1210	Food: Facts and Fallacies Nutrition for Health and Changing Lifestyles	3
PLNT 2500	Crop Production	3
PLNT 2520 or BIOL 2500	Genetics Genetics 1	3
PLNT 3540	Weed Science	3
PLNT 4270	Plant Disease Control	3
SOIL 3600	Soils and Landscapes in Our Environment	3

Restricted Electives

Four courses from Group 1 - Integrated Systems	12
Two courses from Group 2 - Land Science	6
One course from Group 3 - Policy and Economics	3
Two courses from Group 4 - Agrology	6

Free Electives

30 credit hours ²	30
Total Hours	120

- Students can hold CHEM 2100 (Organic Chemistry 1: Foundations of Organic Chemistry) in place of CHEM 1130 (Introduction to Organic Chemistry).
- Students can apply for the Cooperative Education Program. Two work terms are required to graduate with Co-op designation. Co-op courses (3 credit hours each) are used towards free electives.

Restricted Electives

Group 1 – Integrated Systems

Course	Title	Hours
AGRI 2300	Indigenous Issues in Food Systems	3
ANSC/PLNT 4410	Grassland Agriculture: Plant, Animal and Environment	3
PLNT 3560	Organic Crop Production on the Prairies	3
PLNT 4510	Advanced Cropping Systems	3
SOIL 4400	SOIL ECOLOGY	3

Group 2 – Land Science

Course	Title	Hours
SOIL 3XXX	Any 3000 level SOIL (Soil Science) courses	
SOIL 4XXX	Any 4000 level SOIL (Soil Science) courses	

Group 3 – Policy and Economics

Course	Title	Hours
ABIZ 2XXX	Any 2000 level ABIZ (Agribusiness) course	
ABIZ 3XXX	Any 3000 level ABIZ (Agribusiness) course	
ABIZ 4XXX	Any 4000 level ABIZ (Agribusiness) course	

Group 4 - Agrology

Course	Title	Hours
ABIZ XXXX	Any ABIZ course	
AGRI 2300	Indigenous Issues in Food Systems	3
ANSC XXXX	Any ANSC course	
BIOE 3100	Agricultural Engineering Fundamentals for Agronomists	3
ENTM XXXX	Any ENTM except the following:	
ENTM 3162	Manitoba's Insect Fauna	
ENTM 4280	Aquatic Entomology	
ENTM 4500	Insect Taxonomy and Morphology	
FOOD XXXX	Any FOOD course except the following:	
FOOD 4100	Current Issues in Food and Human Nutrition	
FOOD 4230	Food Research	
PLNT XXXX	Any PLNT course except the following:	
PLNT 3140	Introductory Cytogenetics	
PLNT 4380	Plant Science Thesis	
SOIL XXXX	Any SOIL course	

Progression Plan

Course	Title	Hours
Year 1		
ABIZ 1000	Introduction to Agribusiness Management	3
AGRI 1600	Introduction to Agrifood Systems	3

BIOL 1020	Biology 1: Principles and Themes	3
BIOL 1030	Biology 2: Biological Diversity, Function and Interactions	3
CHEM 1100	Introductory Chemistry 1: Atomic and Molecular Structure and Energetics	3
CHEM 1110 or CHEM 1130	Introductory Chemistry 2: Interaction, Reactivity, and Chemical Properties or Introduction to Organic Chemistry	3
ECON 1010	Introduction to Microeconomic Principles	3
HNSC 1200 or HNSC 1210	Food: Facts and Fallacies or Nutrition for Health and Changing Lifestyles	3
Free Electives		6
Hours		30
Year 2		
ABIZ/ECON 2390	Introduction to Environmental Economics	3
AGEC 2370/ BIOL 2300	Principles of Ecology	3
AGRI 2030	Technical Communications	3
AGRI 2400	Experimental Methods in Agricultural and Food Sciences	3
ANSC 2500	Animal Production	3
PLNT 2500	Crop Production	3
PLNT 2520/ BIOL 2500	Genetics	3
SOIL 3600	Soils and Landscapes in Our Environment	3
Restricted/Free Electives/Co-op		6
Hours		30
Year 3		
BIOL 3312	Community Ecology	3
PLNT 4270	Plant Disease Control	3
ENTM 3170	Crop Protection Entomology	3
PLNT 3540	Weed Science	3
Restricted/Free Electives/Co-op		18
Hours		30
Year 4		
AGRI 4100	Current Issues in Agricultural Systems	3
Restricted/Free Electives/Co-op		27
Hours		30
Total Hours		120

Cooperative Education Program

Co-operative Education is a process that alternates periods of academic study with periods of paid work experience relating to the co-op student's area of study. Through the Co-operative Education Program, full-time, paid work terms provide the students with practical experience and provide guidance for further career specialization or further academic study.

Students secure full-time, paid co-op work placements with a faculty-approved employer(s) that are each a minimum of 420 hours, to be completed within 4 months. The faculty supports students on both a group and individual basis to determine their learning goals for the work placement. Students are expected to attend an orientation session as well as participate in a series of self-evaluations under the guidance of a sessional instructor. Prior to starting each work term, students will register in AGRI 2002 (first placement), AGRI 3002 (2nd

placement), and AGRI 4002 (3rd placement) within the term that their co-op placement will take place and pay the fees. Students must submit a reflective written report at the end of the work term and are evaluated for both overall participation and the report on a Pass/Fail basis.

Degree Program

Admission: Students who have been admitted to an undergraduate program within the faculty are eligible to apply to the Co-operative Education Program. Students are advised that satisfying the entrance requirements does not guarantee a place in the Co-operative Education Program. Full admission into the Program is dependent upon a student's ability to secure a work term placement. Normally, the first work term would take place at the end of the second academic year allowing students to pursue professional development activities in year one. However, with approval of the Faculty and employer, the first work term could commence after the first year of a four-year or second-degree program. Students admitted into the Program must maintain good academic standing (minimum DGPA of 2.0).

Employment Term Requirements: The Co-operative Education Program requires the student to secure two full-time, paid co-op work terms (minimum of 420 hours each) with a faculty approved employer(s). A third work term is optional. Prior to starting the work term, students are required to register in the appropriate Agricultural and Food Sciences Co-operative Education Work Term Course within the set deadlines and pay the fee. Successful completion of a work term includes participating in a mid-work term interview with the Co-op Coordinator and completion of a written work term report at the end of each work term. Students who receive a passing grade on the work term reports for all required work terms graduate with the Co-operative Education designation acknowledged on their parchment.

During a work term, a co-op student may take a maximum of one additional course worth up to six credit hours for a total of nine (9) credit hours. Co-op credit hours earned can be used towards free elective requirements in any degree program.

Diploma Program

Admission: To be considered for admission in the Cooperative Education Program, a first year diploma student must have a minimum Degree GPA of 2.0, and have completed at least 24 credit hours of studies by the end of the academic year of application.

Students are advised that satisfying the entrance requirements does not guarantee a place in the Cooperative Education Program. Full admission into the program is dependent upon the student receiving a job placement through the Cooperative Education Office.

Employment Term Requirements: The student will receive three credits for completing the Cooperative Education Program. Students are required to register in the employment term course and pay the fee prior to starting the employment term.