



**The University of Manitoba  
Faculty of Agricultural and Food Sciences**

**COURSE TITLE: Project in Agroecology**

**Course Number AGEC 4550**

**Academic Session**      Fall 2011-Winter 2012

**Credit Hours = 6**

**Prerequisites and how they apply to this course**

Prerequisite: AGEC 3510. A literature review completed in AGEC 3510 normally forms the background for the 4<sup>th</sup> year project.

**Classroom Location:** Ellis Building Room 344

**Meeting Days and Class Hours:** Alternate Fridays 2:30-5:00pm

**Lab Location:** None    **Lab Hours:** None

**Department Office location:** Ellis Building 362

**Phone Number:** 474-8153

**Course Web Page (if applicable):** JUMP webpage for notes and notices

**Instructor Information**

**Name & Title:** Dr. Brian Amiro, Co-Chair B.Sc. Agroecology Program and Head, Department of Soil Science

**Office Location:** Ellis Building Room 364

**Office Phone Number:** 474-9155

**Office Hours:** By appointment or drop-in if available, contact me or the Administrative Assistant, Department of Soil Science at 474-8153

**Email Address:** brian\_amiro@umanitoba.ca

**Additional:** Project Advisors direct the independent research projects. These Advisors are normally identified when the student takes the AGEC 3510 course.

**Course Philosophy**

**Students' Learning Responsibilities**

Students are expected to attend all classes and to participate actively in discussions. Students are expected to communicate regularly with their project mentor and complete all tasks on time.

**Why this course is useful?**

This course gives the B.Sc. Agroecology student experience at doing independent research, which includes project planning, completing experiments/analyses, writing a report and presenting their findings orally. It also provides a forum for discussing topics related to future careers, such as discussions with

employers and about ethics.

### **Who should take this course?**

This course is targeted to students in the B.Sc. Agroecology program.

### **How this course fits into the curriculum**

This is a core compulsory course for the B.Sc. Agroecology degree. Students typically take this course in the fourth year of their program.

## **Course Description/Objectives**

### **Undergraduate Calendar Description**

Independent research project on an Agroecological topic. Students perform research and meet regularly with advisors. Progress reports are required, and final results are presented in written and verbal reports. Classes are held on professional topics. Not to be held with AGEC 4540 (or 065.454). Prerequisite: AGEC 3510 (or 065.351).

### **Instructional Methods**

Lectures/presentations and independent study.

### **Course Objectives**

Students will learn:

- how to organize and bring to fruition a major independent research project
- how to sustain a self-disciplined and concerted effort on a single project over an extended period of time, the completion of which requires the meeting of multiple deadlines and fruitful interaction with advisors, resource personnel, and fellow students

Students will gain experience on:

- accessing, evaluating and synthesizing information from the primary literature and other credible relevant sources
- improving oral and written communication skills

### **Learning outcomes**

At the end of this course, students will be able to:

- **Evaluate** relevant scientific literature in the context of an original investigation
- **Design and manage** an independent research study
- **Examine** a scientific issue and **set up** a plan to address it.

**Description of Examinations:** None.

### **Description of Assignments and Assignment Due Dates**

**Report Outline: By 18 November 2011 at 230pm**, students must email to both the Project Advisor and the Instructor a 1-2 page outline of their project report. The outline should identify the proposed sections and subsections of the report and provide an initial list of references. The Project Advisor should provide feedback to the student on the outline no later than **5 December 2011**.

**Draft Project Report: By 10 February 2012 at 230pm**, students must email to both the Project Advisor and the Instructor a draft of the project report so that they can receive feedback from their Project Advisor no later than **27 February 2012**. The project report should identify the sections and subsections in the report, and as a minimum provide a point-form indication of the contents of sections and include a list of references

**Final Project Report: Deadline for submission of the final report is Friday 6 April 2012.** The final report must be emailed to both the Project Advisor and the Instructor on or before the deadline date. Late submission of the final report will result in a reduction of 10% per day from the total potential mark for the report.

**Oral Presentation:** Oral presentations will be on **March 30, 2012**. An oral report of 15 minutes duration is required using visual aids such as Powerpoint.

### **Grade Evaluation:**

**Attendance (10% of total grade):** attendance and active participation at class meetings and individual meetings with the Project Advisor will be assessed by the Instructor with input from the project advisor.

**Report Outline (5% of total grade):** evaluated by the Project Advisor and marking verified by the Instructor to ensure fairness among students

**Draft Project Report (5% of total grade):** evaluated by the Project Advisor and marking verified by the Instructor to ensure fairness among students

**Final Project Report (60% of total grade):** evaluated by the Project Advisor and marking verified by the Instructor to ensure fairness among students

**Oral Presentation (20% of total grade):** evaluated by the Instructor and assigned Markers (selected by the Instructor from a pool of Faculty members and knowledgeable graduate students)

### **Letter Grade Equivalency:**

A+ =>90%; A=80-89%; B+=75-79%; B=70-74%; C+=65-69%; C=60-64%; D=50-59%; F=<50%.

### **Important Dates**

First Day of Classes (Fall Term): Sept 8, 2011

Last Day of Classes (Winter Term): April 5, 2012

Voluntary Withdrawal date for spanned (2 term) course: Mar. 16, 2012.

### **Texts, Readings, Materials**

#### **Textbook(s) – Authors, Titles, Edition**

There is no required textbook for this course.

#### **Supplementary Reading**

Reading resources may be identified by the student's project advisor but the student has the main responsibility for identifying and obtaining literature appropriate for their project. Where students encounter difficulties getting important items of literature, they should consult with their advisor about possible means of obtaining the items.

### **Course Policies**

#### **Late Assignments**

Penalties for late submission of Assignments are 10% per day late (i.e., a report that is 10 days late will be marked as zero).

#### **Missed Assignments**

Missed assignments will be marked as zero.

#### **Missed Exams**

No Exam.

### **Academic Integrity**

Plagiarism or any other form of cheating in examinations, term tests or academic work is subject to serious academic penalty. Cheating in examinations or tests may take the form of copying from another student or bringing unauthorized materials into the exam room. Exam cheating can also include exam impersonation. A student found guilty of contributing to cheating in examinations or term assignments is also subject to serious academic penalty. Students should acquaint themselves with the University's policy on plagiarism, cheating, exam impersonation and duplicate submission (see Section 7, p. 29 in the University of Manitoba Undergraduate Calendar 09/10).

### **Some Specific Potential Issues for this Course:**

A independent study with a written report is an important part of this course. Students need to discuss potential plagiarism issues with the Instructor and Project Advisor to ensure that they understand the appropriate method for citation, and what constitutes plagiarism in a scientific document. If in doubt, check with an instructor!

### **Use of Third Party Detection and Submission Tools**

Electronic detection tools may be used to screen assignments in cases of suspected plagiarism.

### **Group Work Policies:**

The project is an independent study. Students are encouraged to discuss their work openly with other students and faculty, but they are responsible for completing the report independently.

## **Course Content**

### **Background**

The course represents the completion of a process begun in AGEC 3510. In AGEC 3510, a topic and Project Advisor for an independent research project are selected, and a literature review is written. In AGEC 4550, the research project is conducted and reported upon. Research topics may include empirical field or laboratory research, development of a scenario, or exploration of the properties of a model. While projects often exhibit a disciplinary focus, they must also demonstrate how the project research relates to the environmental, agricultural, and socioeconomic areas that have been encountered in the Agroecology program.

Students normally complete the AGEC 3510 component of their project in December of their third academic year. AGEC 4550 is intended to be a fourth year course taken in the final complete session in which students are registered. Depending upon the nature of the project, the schedules of student and Project Advisor, and whether or not they are involved in the Co-op program, students may begin the work for AGEC 4550 immediately after the completion of AGEC 3510 or may defer their project start until fall term. Students are expected to be working on their project throughout both terms of their final complete session, and a major function of the activities in AGEC 4550 is to assist them in an orderly development and completion of the project during that time period.

### **Class meetings**

The class will meet at 2.30PM in Room 344 Ellis Building on Fridays, on the dates shown:

Date	Activity (tentative presenters)
16 September 2011	Organizational meeting (B. Amiro)
7 October 2011	Brief progress reports from students (students)
21 October 2011	Careers in Agroecology: graduates' stories (TBA)

4 November 2011	Research Stories (TBA)
18 November 2011	Ethics in scientific research (B. Amiro) Progress Report #1 (students)
2 December 2011	Careers in Agroecology: the employer's point of view (TBA)
13 January 2012	How to write a research report (B. Amiro)
27 January 2012	Progress Report #2 (students)
10 February 2012	Marking pointers for reports and presentations (B. Amiro) Power answer technique (B. Amiro)
2 March 2012	How to give a scientific presentation (B. Amiro)
16 March 2012	Communicating research results to the public (TBA)
30 March 2012	Final oral presentations (students)

In these progress report presentations, students should define the hypothesis they are seeking to test, explain what they have done and what they still have left to do, outline any problems they are having, and describe how they plan to analyse and interpret their results. The class members and instructors will discuss the points raised by the presenting student in an effort to help solve any problems being encountered.

Other classes are designed to provide students with information they may find useful during the project or their subsequent careers. In some of these classes, other students in the agroecology program may be invited to attend.

***In addition to formal class meetings, students should arrange a regular schedule of meetings with their advisor to discuss and facilitate their project progress.***

### **Final written report**

The final report should present an in-depth account of the research or scenario exploration, including methods, assumptions, results, analysis of results, and interpretation of the results. Recommendations and conclusions should be provided where appropriate. Where appropriate, reference should be made to the literature reviewed in the AGEC 3510 portion of the project; however, marks will not be awarded for portions of the report that effectively duplicate the portion marked in AGEC 3510. A minimum of 20 pages of text (not including references, tables of data, or other supporting items) is expected. The full report (including all material) must not exceed 40 pages. The submission should be double-spaced and typed in WORD (preferred), or alternatively submitted as a PDF file.

### **Report Format:**

**Abstract** (maximum 300 words): describe the rationale, objectives, methods, results and impact of the study.

**Introduction:** Set the scene and include relevant literature, state objectives and hypotheses and explain the overall approach. Imbed your citations in the text as shown here (Badenov and Fatale 2008).

**Methods:** Identify site location (for field studies), describe the experimental design, treatments, methods employed and instrumentation/techniques. Someone needs to be able to repeat this from your description.

**Results:** Use Tables and Figures to present data. Describe the data and show statistics to address your hypotheses.

**Discussion:** Discuss your results and interpret your findings. Incorporate the literature to help explain your interpretation. Do not introduce new results from your study. Explain how your study relates to previous studies.

**Conclusions:** Clearly explain the most important conclusions from your study. Put these in a larger context.

**References:** Use a recognized journal format, such as:

Badenov, B. and N. Fatale. 2008. More problems with moose and squirrel. *Journal of Lower Pottsylvania* 23: 46-58.

Tables and Figures: These should be placed within the document following the section where they are first mentioned. They should be identified as Table 1, Table 2, etc. or Figure 1, Figure 2, etc. They require a caption that describes the Table or Figure.

The **marking template** used in the course asks the marker to evaluate the final report in relation to the following areas:

- *Quality of research performed or scenario exploration.* Was work carried out carefully and effectively? Is the approach rigorous and are results valuable and reliable?
- *Quantity of research performed or scenario exploration.* Given the amount of time available to the student for this project, was amount of work done sufficient?
- *Advance of knowledge over that in AGEC 3510 component.* Has the student acquired new information beyond that in the earlier paper, or is there undue duplication of the earlier work?
- *Introduction.* Is there an adequate introduction which sets the scene and includes relevant literature, states objectives and explains overall approach.
- *Methods.* Are the methods used in the research or scenario exploration clearly and fully explained? Are any underlying assumptions clearly identified?
- *Results.* Are the results accurately and clearly portrayed, using tables, text and graphics in appropriate ways?
- *Analysis of results.* Given students' limited statistical and mathematical knowledge, have appropriate statistical or other analyses been carried out and reported appropriately?
- *Discussion.* Are the results discussed and interpreted in a logical manner that neither downplays nor overextends the worth of the results?
- *Recommendations and conclusions.* Are there recommendations and conclusions that are well founded on the information acquired during the project?
- *Integration with the field of Agroecology.* Is there a demonstration of how the project relates to the environmental, agricultural, and socioeconomic areas that have been encountered in the Agroecology program?
- *Summary.* Is there a summary which accurately depicts the major findings of the project in a concise and clear way?
- *Rhetorical effectiveness.* Were arguments well developed and discussion and conclusions logically based?
- *Organization of major sections.* Were major sections appropriate in content and order, were headings used where appropriate?
- *Organization of paragraphs and sentences.* Were paragraphs and sentences logically ordered and in the appropriate major section?
- *Grammar and spelling.* Is the writing generally free from grammatical and spelling errors?
- *References and citations.* Did citations and references correspond, and was reference and citation style consistent and adequate?
- *Were the instructions followed?* Minimum 20 pages text, double spaced, printed or typed, two copies

### **Oral presentation**

An oral report of 15 minutes duration is required. The oral presentation should be in the style of a scientific presentation, with an introduction, statement of objectives, summary of methodology, presentation and interpretation of results, discussion of results and their broader implications, and summary of conclusions or recommendations. The oral presentation should use Powerpoint (or similar presentation software). Following the presentation, there will be a short question period, and class discussion of the issues raised by the presentation. Project content is largely marked in the written report, and so marks for the oral presentation will focus on effectiveness of communication of the major findings of the project and on ability to respond to relevant questions. Markers are asked to evaluate presentations according to the following criteria:

- *Language, voice* (clarity, volume, inflection, flow, speed)

- *Body language, movements* (posture, eye-contact, use-of-hands, body position)
- *Media materials* (legibility, variety, organization, ease of handling)
- *Attitude* (interested, enthusiastic, bored, nervous)
- *Structure/Organization* (logical structure, well organized, sections well defined and identified, summary?)
- *Comprehension* (good understanding of material, good background info, well researched)
- *Depth* (too superficial, too deep, just right; too long, too short)
- *Effectiveness* (quality explanations, interpretations, got message across clearly)
- *Demonstration of relevance* (student relates project topic to environmental, agricultural, and socioeconomic areas that have been encountered in the Agroecology program)

## **Policy on Changing Agroecology Project Advisors Between AGEC 3510 and AGEC 4550**

### **Preamble**

Normally, there will not be changes in the Project Advisor during the course of the 19 months between project choice in the first weeks of AGEC 3510 and final report presentation in the final weeks of AGEC 4550. It is expected that students will gradually deepen their knowledge of the project topic area through continued supervised activity throughout and between the two courses. Changes in Advisor are likely to be detrimental to this expectation and to the quality of the resulting work. Nevertheless, from time to time, a student may feel that they cannot work effectively with their Advisor or have drastically changed their area of interest (perhaps because of a summer assistant position), and that a change of Advisor is a better option than continuing with the same Advisor. Alternatively, circumstances may arise that prevent an Advisor from completing the supervision of the student in the project. This policy, which has been approved by the Agroecology Program Committee, is intended to set out the process by which project Advisor changes may occur, when initiated by the student, or when initiated by the Advisor or other instructor.

### **Change initiated by the student**

1. Normally, a student who is considering requesting a change of advisor should first consult with one of the academic counsellors or Chairs of the Agroecology program.
2. If the student decides to proceed to request a change in advisor, that request must be made in writing to the Agroecology Program Chair.
3. The student will be required to sign an acknowledgment that the marking of their fourth year portion of the project will be as rigorous as that of any other student, and that this may work to their disadvantage.
4. The assignment of a new project advisor will be made by the Agroecology Program Chair, after consulting with the student and the potential advisor.
5. The process of assigning a topic shall be as a result of discussion between the student and the advisor. The ultimate decision must meet the approval of the new advisor.

### **Change initiated by instructor(s)**

1. If an advisor is no longer able to supervise a student, they will bring this problem to the attention of the Agroecology Program Chair.
2. The program chair shall negotiate with the student to find an appropriate course of action and an appropriate new advisor.
3. Where a student is forced to change topic, and this is not a result of the student's actions, the marking of the fourth year components of the project shall take this into account.