BIOL2060 DE Ecology Course Outline S'15

Course Description and Objectives

Calendar Description

This course discusses the ecology of plants, animals, fungi and bacteria as individual organisms, interacting populations, communities and ecosystems. Lectures and discussion groups are used to demonstrate the difficulty of interpreting ecological data derived from field studies. The value of laboratory-based research in ecology will also be discussed. The course will be important for anyone who wishes to understand what we know and need to know about the way ecological systems work.

Prerequisite(s): 4.00 credits including ([BIOL*1040](#) or [BIOL*1070](#))

Restriction(s): [BIOL*3110](#), [BIOL*3120](#)

Major Themes and Concepts

Ecology (BIOL*2060 DE) will introduce you to the basic concepts, theories, and evidence about ecological processes that determine the distribution and abundance of organisms. Our approach will include a mix of theory and field and laboratory techniques. We will also apply the principles you've been learning to topics related to conservation, resource use, and human impacts on the biosphere.

Emphasis will be placed on how ecologists use the scientific method, and you will have an opportunity to practice formulating hypotheses and designing experiments to test predictions in your tutorials and in Assignment 4. We will also emphasize peer assistance and interactivity in the course. You will participate in online discussions and informal peer review with your group in the tutorials.

Major Topics

Unit 1 – Introduction
- Ecology and the Scientific Method
- Global and Local Patterns of Variability
- Responses of Organisms to Environmental Variability

Unit 2 – Individuals

- Homeostasis
- Temperature Relations
- Water Relations
- Energy and Nutrient Relations

Unit 3 – Populations
- Distribution and Abundance of Populations and Species
- Population Dynamics
- Population Growth

Unit 4 – Population Interactions
- Interactions Within and Between Populations
- Competition
- Predation

Unit 5 – Communities
- Community Structure
- Food Webs
- Changes in Community Structure

Unit 6 – Large-Scale Ecology
- Geographic Ecology
- Primary Productivity and Energy Flow
- Global Change and the Distribution of Species

Learning Outcomes

By the end of the course the successful student will be able to:

1. Explain patterns observed in nature by applying fundamental ecological theories.

2. Communicate clearly about ecological systems and processes by applying appropriate ecological terminology.

3. Appreciate the historical development of the discipline and the contributions of influential scientists to our understanding of contemporary issues.

4. Begin to formulate solutions to conservation and management issues related to the distribution and abundance of species by applying ecological theory.

5. Analyze original data by navigating spreadsheets, constructing appropriate graphs, and interpreting results.

6. Critically analyze primary scientific papers on a specific ecological topic.

7. Critically evaluate primary ecological literature in the context of ecological theory.

8. Develop and present a research proposal (including a review of literature, statement of hypothesis and predictions, appropriate research methodology, and anticipated results) on an ecological topic.

In addition to the overall learning objectives, you will find detailed learning objectives in the course notes for each unit on the course website.

Course Structure and assessment

Course Structure

The course is divided into six units, with each unit taking two weeks to complete. Specific details about what will be covered in each unit can be found on the course website.

In each unit you will…

- Read the course notes and make sure that you can achieve the learning objectives. Note that the words that are highlighted can be found in the glossary for that unit, and that there are questions provided at the end of each section to guide you through the content.

- Read the assigned pages in the textbooks to expand and reinforce the information found in the course notes.

- Review the glossary of terms and use the online "Jeopardy" game to test your knowledge of the definitions.

- Answer the review questions for the unit. Note that we encourage you to try to answer the review questions yourself before seeking assistance from the other members of the class in the Review Questions discussion.

- Take the online quiz.

In addition to the quizzes, there are five tutorials and four assignments to be completed through the semester. You will find guidelines for the assignments in the Assessment portion of the course website.

Assessment

Form of Assessment	Weight (% of Final)	Due Date	Learning Outcome Addressed
Online quizzes	5 x 1% = 5%	Weeks 2 to 12	1, 2, 3, 4
Tutorials	5 x 3% = 15%	Weeks 1 to 9	6, 7, 8
Assignment 1	5%	Week 2	5
Assignment 2	15%	Week 5	6, 8
Assignment 3	5%	Week 8	5
Assignment 4	20%	Week 10	6, 8
Final exam	35%	Exam period: Thursday August 6, 2015 to Friday August 14, 2015	1, 2, 3, 4

Course Materials

Required Textbook

> Molles, M.C. and J.F. Cahill. 2014. Ecology: Concepts & Applications. Third Canadian Edition. McGraw-Hill Ryerson: Toronto.

This required textbook contains readings for each unit and will be used extensively throughout the course. Please take note that we will be using the Third Canadian edition; the page numbers in the course notes are for the Third edition with those for the Second edition in brackets for students who purchase used copies.

This textbook is available in two forms: printed, and as an E-book. Information about the E-book can be found at the McGraw-Hill - eBookstore. One copy of the textbook will also be available on 2-hour reserve at the University of Guelph Library.

Required SimUText Electronic Chapters

We will also be using three chapters of the interactive software called SimUText Ecology for the course. One copy of each of the three chapters of SimUText will be on 2-hour reserve at the University of Guelph Library.

> **Population Growth**
> **Predation, Herbivory and Parasitism**
> **Competition**

You will receive an email with instructions for purchasing SimUText. The instructions will also be posted on the course website.

Spreadsheet and Word Processing Software

The assignments and review questions will involve handling and analyzing data, as well as writing reports. You will need access to spreadsheet and word processing software that is compatible with Microsoft Word and Excel. These programs are available to download for free from the Computing and Communication Services (CCS) website.

Course Content

Please see the **Schedule** page on the course website for a description of dates, textbook and SimUText readings, activities, and deadlines.

Course Policies

Student Responsibilities

This course requires a minimum of six hours of online access per week, and you are expected to check the course News, Main Class conference, and Tutorials and Assignments conference regularly; you are responsible for all announcements, feedback, and other course material distributed online. When interacting with the instructor and other students, you must maintain a professional tone. Please provide your feedback in a positive, encouraging, and constructive manner.

Asking Questions

Questions of a general nature about course policies, content, quizzes, tutorials, and assignments should be posted in the Main Class conference on the course website. This conference will be monitored by the instructor on a daily basis, Monday to Friday (excluding holidays) during normal working hours. Questions of a personal nature such as requests for extensions or re-grading of assignments should be emailed to the instructor.

Academic Integrity

You are encouraged to discuss the course with your peers, <u>but all work submitted for grading must be your own</u>. Plagiarism has serious consequences as outlined in the University of Guelph Undergraduate Calendar: [Undergraduate Calendar - Academic Misconduct](#)

Resources

<u>If you are concerned about any aspect of your academic program:</u>
- Make an appointment with a program counsellor in your degree program. [B.Sc. Academic Advising](#) or [Program Counsellors](#)

<u>If you are struggling to succeed academically:</u>
- There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. [The Learning Commons](#)

<u>If you are struggling with personal or health issues:</u>
- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. [Counselling Services](#)

- Student Health Services is located on campus and is available to provide medical attention. [Student Health Services](#)

- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. [Stress Management and High Performance Clinic](#)

<u>If you have a documented disability or think you may have a disability:</u>
- The Centre for Students with Disabilities (CSD) can provide services and support for students with a documented learning or physical disability. They can also provide information about how to be tested for a learning disability. For more information, including how to register with the centre please see: [Centre for Student with Disabilities](#)

Submission of Assignments

All assignments must be saved in Word 2003 (.doc file format compatibility mode). Instructions for saving in .doc format are provided in a short video accessed through the course website.

Bonus questions and assignments will be submitted electronically in the appropriate folder on the Dropbox page on the course website by 11:45 pm on the due date. If you encounter technical problems when submitting your bonus questions and assignments, please email the assignment to the instructor in advance of the deadline in order to avoid late penalties.

Submission Checklist

Here is a submission checklist that you can use to help you avoid common submission problems that can cost you marks!

☑ Is my work complete? Have all required elements been included?

☑ Do I have a back-up copy of the work?

☑ Have I used the appropriate Submission Form? (No other cover page is required.)

☑ Have I saved my file in Word 97-2003 (.doc file format compatibility mode)?

☑ Have I named my file with my surname, given name, and assignment number, e.g. "Hincks Sheri Assignment 1.doc"?

☑ Have I submitted my file in the correct folder on the Dropbox page?

☑ Have I submitted the correct file? **Hint:** You can download the file after it has been submitted to double-check for empty files, incomplete files, or incorrect files.

☑ Have I submitted it well in advance of the 11:45 pm deadline to avoid late penalties? **Hint:** If you are still working on the assignment close to the deadline, you should submit one copy before 11:15 pm and then re-submit closer to the deadline. We will grade the version that is submitted closest to the deadline.

☑ Have I received a Dropbox Submission Receipt by email? **Note:** You should retain this email in case it is needed to verify that your submission was received. If you don't get a Submission Receipt then your submission has not been successful and you should try again.

☑ Have I checked my email the day following an assignment due date? **Note:** If we haven't received your submission on the day that your assignment is due, we will send you a "Courtesy Notice" to your U of Guelph email address the next day asking you to submit it by 11:45 pm that night for a 10% late penalty.

Assignment of Grades

Clarification about the assignment of grades is provided in the University guidelines on Grading Procedures. See Resolution 1: Grading Procedures

Re-grading of Assignments

If you wish to have an assignment re-graded, then you should email the instructor. Be aware the entire assignment will be re-graded, which could result in an increase, decrease, or no change to your mark. All requests for re-grades MUST be made within one week of the return of the assignment.

Late Policies

Online quizzes, tutorial postings, and assignments will be due at 11:45 pm on the due date. There will be a 14-minute grace period to take into consideration any delays due to occasional slowdowns experienced by the system accepting the submissions.

All online quiz submissions and tutorial postings must be received by 11:45 pm on the due date and submissions received on or after 12:00 am the following day will NOT be accepted and will receive a grade of zero.

The four out-of-class assignments must be submitted before 11:45 pm on the due date. Late assignments received on or after 12:00 am the following day will be accepted with a penalty of 10% per 24 hour period, i.e., those received by 11:45 pm the next day = 10% deduction. Assignments received more than 24 hours after the deadline will NOT be accepted and will receive a grade of zero.

Technical Requirements

For adequate interaction with the course website please make sure that your computer system meets the Minimum Requirements.

If you do not have these technical requirements, consider either upgrading your personal computer, or using a machine on-campus. Trying to use someone else's computer for the course may prove to be frustrating and difficult.

Please follow the online System Check to determine if you have the right set-up. (Results will be displayed in a new browser window).

Policies and Resources

Distance Education and Open Learning Program Handbooks

Degree Credit Students: Please ensure that you have reviewed the DE Handbook. In particular, ensure that you review the sections that pertain to Assignment Submissions and Returns, Online Quizzes or Tests and Final Examinations.

Open Learning Program Students: Please ensure that you have reviewed the Open Learning program Handbook for the specific procedures and policies related to your studies through Open Learning and Educational Support.

Email Communication

Degree Credit Students: As per university regulations, all students are required to check their uoguelph.ca e-mail account regularly: e-mail is the official route of communication between the University and its students.

Open Learning Program Students without a University of Guelph email account: Check your email account (the account you provided upon registration) regularly for important communications, as this is the primary conduit by which the Open Learning and Educational Support will notify you of events, deadlines, announcements or any other official information.

When You Cannot Meet Course Requirements

Degree Credit Students: When you find yourself unable to meet an in-course requirement due to illness or compassionate reasons, please advise your course instructor **in writing,** with your name, ID number and email contact. See the Undergraduate Calendar for information on regulations and procedures for Academic Consideration.

Open Learning Program Students: Please refer to the Open Learning program Handbook.

Drop Date

Degree Credit Students: The last date to drop one-semester courses, without academic penalty, is indicated in the **Schedule** section of this course website. See the Undergraduate Calendar for regulations and procedures for Dropping Courses.

Open Learning Program Students: Please refer to the Open Learning program Handbook.

Copies of Assignments

Keep paper and/or other reliable back-up copies of all assignments: you may be asked to resubmit work at any time.

Accessibility

Degree Credit Students: The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible. For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: Centre for Students with Disabilities.

Open Learning Program Students: Students with disabilities requiring special accommodation for tests during the semester or for final exams shall contact the Open Learning and Educational Support Program Counsellor at counsellor@OpenEd.uoguelph.ca, before the end of the first week of classes to ensure that appropriate support can be arranged. If contact is not made by this time, support may be delayed. Students will be asked to provide documentation from a health professional or from their home institution. Please note all information provided is held in confidence.

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar.

Acceptable Use

The University of Guelph has an [Acceptable Use Policy](), which you are expected to adhere to.

Copyright Notice

All content within this course is copyright protected. Third party copyrighted materials (such as book chapters and articles) have either been licensed for use in this course, or have been copied under an exception or limitation in Canadian Copyright law.

The fair dealing exemption in Canada's Copyright Act permits students to reproduce short excerpts from copyright-protected materials for purposes such as research, education, private study, criticism and review, with proper attribution. Any other copying, communicating, or distribution of any content provided in this course, except as permitted by law, may be an infringement of copyright if done without proper license or the consent of the copyright owner. Examples of infringing uses of copyrighted works would include uploading materials to a commercial third party web site, or making paper or electronic reproductions of all, or a substantial part, of works such as textbooks for commercial purposes.

Students who upload to CourseLink copyrighted materials such as book chapters, journal articles, or materials taken from the Internet, must ensure that they comply with Canadian Copyright law or with the terms of the University's electronic resource licenses.

For more information about students' rights and obligations with respect to copyrighted works, see [Fair Dealing Guidance for Students]().

Resources

Degree Credit Students: The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations, which apply to undergraduate, graduate and diploma programs. [See Academic Calendars]().

Open Learning Program Students: The [Open Learning program Handbook]() is the source for information about policies and regulations.

Problems, Questions, Comments

Course Instructors

Sheri Hincks (Primary)
519-824-4120 ext. 56010
shincks@uoguelph.ca
Office SCIE 3509; office hours by appointment

Joyce Buck
519-824-4120 ext. 52743
jbuck@uoguelph.ca
Office SCIE 3508; office hours by appointment

Course TAs

TBA

Distance Education

Technical Support
Centre for Open Learning and Educational Support
University of Guelph
Room 211 Day hall
help@open.uoguelph.ca
Toll Free: (Can. & USA) 1-866-275-1478
Monday – Friday 8:30 am to 8:30 pm
Saturday 10:00 am to 4:00 pm
Sunday 12:00 noon to 12:00 midnight

General Inquiries
Centre for Open Learning and Educational Support
University of Guelph
Room 160 Johnston Hall
info@coles.uoguelph.ca
(519) 824-4120 ext. 55000

Open Learning Program Counsellor
Mickey Smart
(519) 824-4120 ext. 56050
msmart@open.uoguelph.ca