Course outline Winter 2017
BIOL*2060 Ecology
Department of Integrative Biology
University of Guelph

I. General Information

Course description: BIOL*2060 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 as presented in lecture and discussed in tutorials. We will also take time during lectures to apply the principles you've been learning to topics related to conservation, resource use, and human impacts on the biosphere. Discussions during lectures and tutorials and written assignments will allow you to practice working with the scientific method. 0.5 credits.

Prerequisite(s):	4.00 credits including BIOL*1040 or BIOL*1070
Restriction(s):	BIOL*3110, BIOL*3120
Course Instructors	Prof. Andrew McAdam amcadam@uoguelph.ca Prof. Merritt Turetsky mrt@uoguelph.ca
Tutorial Coordinator	Ms. Joyce Buck jbuck@uoguelph.ca (519) 824-4120 x 52743, SSC 3508
GTAs	TBA
Lectures	Tuesday/Thursday, 11:30-12:50 in MACN 105
Tutorials	Tuesday: 1:00, 2:00, 3:00 Wednesday: 11:30, 12:30, 1:30 All tutorials will be held in SCIE 3315
Midterm Exams	In class, TBA
Final Exam	TBA

II. 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 ecological issues.

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

5. Navigate spreadsheets, construct appropriate graphs, and interpret results through class discussions and tutorial group work.

6. Find electronically, read for comprehension, and critically analyze primary scientific papers on a specific ecological topic.

7. Critically evaluate primary ecological literature and interpret case studies 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.

III. Course Content
There are five major sections in the course:

SECTION I: WHAT IS ECOLOGY?

SECTION II: EFFECT OF THE ABIOTIC ENVIRONMENT ON THE DISTRIBUTION OF ORGANISMS, including climate, biogeography, and adaptation to environmental extremes

SECTION III: EFFECT OF THE BIOTIC AND ABIOTIC ENVIRONMENT ON THE ABUNDANCE OF ORGANISMS, including demography, life history, and population growth

SECTION IV: EFFECT OF SPECIES INTERACTIONS ON THE DISTRIBUTION AND ABUNDANCE OF ORGANISMS, including competition and predation

SECTION V: DETERMINANTS OF COMMUNITY STRUCTURE AND FUNCTION, including succession, top-down vs. bottom-up regulation, and keystone species

General information on lectures
- The assigned readings should be completed ****PRIOR**** to each lecture**.** This will allow us to spend our lecture time clarifying, extending, and applying the concepts from the assigned reading.
- For your convenience, drafts of slides will be posted on Courselink prior to lecture. However, please note that these drafts can differ from the final, corrected versions of the slides, which will be posted on Courselink after lecture if substantial changes are made.
- We will often ask you to confer with your neighbors during lecture. We do this because research shows that students who work with their neighbors to answer questions in class score better on exams than students who do not interact with their peers.

General information on Tutorials
- Each student will be assigned to a tutorial group with three other students and will remain with that group for the semester.
- There will be ten tutorials during the semester, and you are expected to attend them all. Each tutorial will include some or all of the following activities: i) advance preparation on an individual basis, ii) a small group discussion to answer a series of questions on a worksheet, with TA assistance, and iii) submission of the completed worksheet(s).
- Materials for each tutorial session will be available in the Tutorial Manual. Be sure to complete any assigned activities in advance of the tutorial so that you are prepared and ready to contribute to your group!

Our schedule of tutorials is as follows:

Week	Tutorial Topic
Tutorial 1	Choosing a topic and finding relevant journal articles
Tutorial 2	Reading scientific journal articles
Tutorial 3	Writing a literature review
Tutorial 4	Observations, hypotheses, predictions and experimental design
Tutorial 5	Creating effective figures using Excel
Tutorial 6	Refining the topic, choosing a gap, and possible research question
Tutorial 7	Research question and revising the literature review
Tutorial 8	Research question, hypothesis, prediction, and experimental design
Tutorial 9	Figure of expected results, expected results and significance
Tutorial 10	Writing style, in-text citations and references

IV. Course Resources

SimUText Ecology Electronic 'Textbook' Software

We will be using interactive software called SimUText Ecology for BIOL*2060. This software is **required**, but is much less expensive than a traditional textbook, and is yours to keep for life. SimUText Ecology must be purchased with a credit card and can be downloaded onto your computer. It utilizes text, videos, and interactive simulations to allow you to practice working with concepts we discuss in lecture.

Sections of seven SimUText Ecology chapters are assigned:

SECTION II: Biogeography
                Physiological Ecology

SECTION III: Life History

                Population Growth

SECTION IV: Competition

Predation, Herbivory and Parasitism

SECTION V: Community Dynamics

At the end of each SimUText section, you will have the option to submit your responses to questions. The answers to these questions will be released to provide you with feedback on your comprehension of course material, but they will not be used to calculate your grade for the course.

***You will receive an email with instructions for purchasing SimUText. The instructions will also be posted on the Biol 2060 Courselink site. ***

Top Hat

To facilitate interactions and discussions in and out of lecture, we will be using Top Hat. Top Hat software allows you to answer questions from your smartphone, tablet, or laptop. You will be able to review the questions that you answered on Top Hat, and your marks will be uploaded to the Courselink gradebook at the end of the semester (see **V. Methods of assessment**, below, for more details).

***You will receive an email with instructions for purchasing Top Hat. The instructions will also be posted on the Biol 2060 Courselink site. ***

Tutorial Manual

The BIOL*2060 Tutorial Manual (white cover/Forest) is required for the course and will be available for sale for $15.00. Dates and times that they will be sold will be posted on the course website and in the Science Complex. Please bring your Tutorial Manual with you to every tutorial.

Spreadsheet and Word Processing Software

The assignments will involve creating effective figures and 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. They are also installed on the laptops available at the University of Guelph Library and on the desktops in the CBS computer laboratories.

V. Methods of assessment

Assessment		Due Date
Tutorial Worksheets	10%	Weekly (Learning outcomes #5, 6, 7)
Assignment 1	10%	October 13 (Learning outcomes #6, 7)
Midterm Exam #1	10%	October 24 (Learning outcomes #1, 2, 3, 4, 5, 7)
Assignment 2	20%	November 17 (Learning outcomes #1, 2, 6, 7, 8)
Midterm Exam #2	15%	November 21 (Learning outcomes #1, 2, 3, 4, 5, 7)
Top Hat Questions	5%	All semester (Learning outcomes #1, 2, 3, 4, 5, 7)
Final Exam	30%	TBA (Learning outcomes #1, 2, 3, 4, 5, 7)

Tutorial Worksheets

Weekly tutorials will take you step by step through the skills needed to complete the two assignments.

Tutorial Worksheets 1, 2, and 4 will be completed as a group, and all members in your group will get the same grade. Tutorial Worksheets 3, 5, 6, 7, 8, 9, and 10 will be completed on an individual basis in advance of the tutorial, and they will be discussed and submitted individually. If you didn't complete your individual Tutorial Worksheet then you won't get credit for the work that you did with your group that week. Each tutorial worksheet will be worth 1% of your grade for the semester. Questions about tutorial grades must be emailed to Joyce Buck within one week of the return of the Tutorial Worksheet.

Assignments

The assignments will allow you to explore how science is done, including searching for primary research journal articles using online databases, summarizing and critically evaluating journal articles in a literature review, and writing a research proposal.

Top Hat Questions

Top Hat will be used to test your comprehension of the assigned readings, stimulate participation in class discussions, and enhance your understanding of course content.

Midterms and Final Exam

The exams will include a selection of multiple choice and (on the final) short answer questions

based on all material presented and discussed in lectures, tutorials, assignments, and the assigned portions of the SimUText Ecology chapters. The emphasis of these questions is on comprehension and application of knowledge, not regurgitation of memorized facts. Students are advised to discipline themselves to stay on top of the course material so as to be best prepared for the exams. The questions discussed in lecture will be similar to the kinds of questions that will appear on exams.

VI. Course Policies

Academic Consideration

If you are unable to complete any of the Writing Assignments by the deadline for documented medical, psychological, or compassionate reasons, please contact Joyce Buck in advance of the deadline to make arrangements for a short extension.

If you are sick or otherwise unable to attend a tutorial for a valid medical, psychological or compassionate reason, please contact Joyce Buck by email in advance. You may be able to attend a different tutorial section that week or complete the work on an individual basis. If so, be sure to add your regular tutorial day and time beside your name on the Tutorial Worksheet so that you can get credit for your work.

If you are absent for a midterm exam for documented medical, psychological, or compassionate reasons, you should contact your program counsellor within five working days of the missed exam and seek academic consideration. Students who miss a midterm exam for documented reasons will have the final exam reweighted.

See the undergraduate calendar for information on regulations and procedures for Academic Consideration:

http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Academic Integrity

You are encouraged to discuss the course with your peers, but all work for the Writing Assignments MUST be your own.

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.

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: http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08- amisconduct.shtml

Accessibility

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 Student Accessibility Services as soon as possible. For more information, contact SAS at 519-824-4120 ext. 56208, email sas@uoguelph.ca, or see the website: http://www.uoguelph.ca/csd/

Asking Questions in the Online Discussions

If you have any questions about the course you should post them in one of the discussions on the Courselink website. Prof. Turetsky or McAdam will answer questions about lectures in the Main Class Discussion, and Ms. Joyce Buck will answer questions about tutorials and writing assignments in the Tutorials and Assignments Discussion. Questions of a personal nature (e.g. illness) should be emailed to the appropriate person, i.e. Prof. Turetsky or McAdam regarding lectures and exams, and Joyce Buck regarding tutorials and assignments.

Assignment of Grades

Assignments will be marked on the basis of the criteria outlined in the Undergraduate Calendar. Clarification about the assignment of grades can be found under Grading Procedures at:

http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-grds- proc.shtml

Copies of Writing Assignments

Keep paper and/or other reliable back-up copies of all your Writing Assignments, as you may be asked to resubmit work at any time.

Course Evaluation Information

CCS now provides the U of G Course Evaluation System in a secure, online environment. End of semester course and instructor evaluations provide students the opportunity to have their comments and opinions form part of the information used by Promotion and Tenure Committees in evaluating the faculty member's contributions in the area of teaching.

Course evaluations are now conducted through this web site. Login with your central email account login ID and password:

https://courseeval.uoguelph.ca/CEVAL_LOGIN.php

Instructors do NOT receive evaluations until the end of exam period. Furthermore, evaluations are anonymous, unless you specifically indicate you want to acknowledge your comments.

Drop Date

The last date to drop one-semester courses, without academic penalty, for Fall 2016 is November 4th. For regulations and procedures for dropping courses, see the Undergraduate Calendar:

http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08- drop.shtml

E-mail Communication

As per university regulations, all students are required to check their <username@mail.uoguelph.ca> e-mail account regularly. E-mail is the official route of communication between the University and its students.

Recording of Materials

Presentations which are made in relation to course work—including lectures and tutorials—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Re-grading of Assignments

If you wish to have an assignment re-graded, then you should email Joyce Buck. In order for a re-grading request to be considered, provide a justification for why the grade should be changed based on the assessment criteria found in the grading rubric. All requests for re-grading MUST be made within one week of the return of the assignment. Be aware that the entire document will be re-graded, which could result in an increase, decrease, or no change to your mark.

Resources

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: http://www.uoguelph.ca/registrar/calendars/index.cfm?index.

Student Responsibilities

You should plan on spending a minimum of ten hours per week working on this course, in addition to time spent in lectures and tutorials. This time includes reading the required sections of the electronic textbook, reviewing and/or rewriting lecture notes, preparing questions on any material with which you need help, preparing for the tutorials, and working on your writing assignments. The Instructor, Tutorial Coordinator, and TAs will offer as much assistance as possible. However, remember that this is your learning experience, and you will get as much out of this class as you put into it.

Submission of Assignments and Late Policies

Weekly Tutorial Worksheets must be submitted before the end of each tutorial period to Dropbox. Late submissions will NOT be accepted.

The two Writing Assignments should be saved in Word (.doc file format compatibility mode) and submitted electronically in the correct folder on the Dropbox page in D2L by 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. Late submissions will be accepted for up to 24 hours after the assignment deadline with a 10% late penalty. If you encounter technical problems when submitting your writing assignments, please email the assignment to Joyce Buck in advance of the deadline to avoid late penalties.

Please be sure to follow the guidelines in the Submission of Assignments Checklist in order to avoid common problems that could cost you marks.

Submission of Assignments Checklist

✓ Have I got a back-up copy of my assignment saved on a USB key or in the cloud?

✓ Is my work complete?

✓ Have all required elements been included?

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

✓ Have I saved my file in Word (.doc file format compatibility mode)?

✓ Have I named my file with my surname, given name, and assignment number, e.g. "Buck Joyce 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.

VII. Campus Resources

If you are concerned about any aspect of your academic program:

- make an appointment with a program counsellor in your degree program.

http://www.bsc.uoguelph.ca/index.shtml or https://www.uoguelph.ca/uaic/programcounsellors

If you are struggling to succeed academically:

- 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. http://www.learningcommons.uoguelph.ca/

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. https://www.uoguelph.ca/counselling/
- Student Health Services is located on campus and is available to provide medical attention. https://www.uoguelph.ca/studenthealthservices/clinic
- 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. http://www.uoguelph.ca/~ksomers/

If you have a documented disability or think you may have a disability:

- Student Accessibility Services (SAS) 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: https://www.uoguelph.ca/csd/

VII. Additional Course Information

We expect you to

- take responsibility for your own learning
- prepare for and attend class and tutorials regularly
- participate enthusiastically in class activities and tutorials
- set high standards for your performance in the course
- treat others in the course respectfully
- turn in work on time

- stay informed about course information distributed online
- maintain academic integrity

You can expect us to

- help you become a better learner
- create interesting and challenging ways for you to learn about ecology
- set high standards for the class
- treat you with fairness and respect
- promptly respond to your questions and concerns about the course. Please do not expect responses outside of business hours
- take an interest in your development as a biologist
- be excited and knowledgeable about the course material -grade and hand back your work promptly