

ADVANCED POPULATION ECOLOGY

BIOC59H3F Autumn 2019

Course Instructor: Dr. Joanna Zigouris, joanna.zigouris@utoronto.ca, SW 542
Office hours: Wednesday 11:00 – 1:00 or by appointment

Teaching Assistant: Sara Campbell, sarae.campbell@mail.utoronto.ca, SY360
Office hours: Immediately following the Lab or by appointment

Class meeting time: Lecture Wednesday 9:10 – 11:00, IC 326
Laboratory Thursday 12:10 – 15:00, SW 323

Course Text: C.J. Krebs (2009) *Ecology: The Experimental Analysis of Distribution and Abundance* 6th edition. Benjamin Cummings; Chapters 1-17: Parts 1 to 3

Prerequisites: BIOB50
Exclusion: EEB319H, (BGYC59H3), (BIO319H)

Email Policy: Before emailing, please check the BIOC59 Quercus webpage. We may have already answered your question there. When you email, include a subject line that includes "BIOC59" and that summarizes your question. Please use your UofT e-mail account or the email tool in Quercus to ensure that your message is not spam-filtered accidentally.

Course Description

Population ecology is the study of the mechanisms that influence the abundance and distribution of organisms. This course will examine theoretical and applied approaches to population ecology. Experimental labs will include the quantification of community structure, estimation of population abundance, and identifying life history trade-offs.

Learning Outcomes

At the end of this course, students should be able to...

1. Recognize the importance of population ecology as a discipline and how it is used
2. Recognize factors that limit populations
3. Apply knowledge of population abundance and dynamics to data sets
4. Collect, manage, and analyze ecological data
5. Critically review research results/theories and formulate new questions
6. Communicate scientific results orally and in written form

Course Homepage

Available through UTSC homepage: Quercus Portal. All communication will be done via this mechanism. Check it weekly and more often near due dates for assignments. Lecture slides, data files, essay writing tools, news items, etc. will be posted.

Announcements

It is YOUR responsibility to be aware of announcements made in class. Be sure to CHECK the homepage on lecture days to read the announcements.

Marking Scheme

Task	Grade Value
Midterm Exam	30%
Laboratory Assignments	25%
Essay	10%
Essay Seminar	5%
Participation	5%
Final Exam	25%

Students are responsible for all material that is presented in lecture and laboratory. If you miss a class, you are strongly advised to obtain the notes and assignments from another student. Participation in lecture and laboratories will be an important factor in determining borderline grades. Attendance and participation are strongly advised.

Lab Sessions and Lab Assignments

Lab Sessions are mandatory and there are **NO MAKEUP LABORATORIES**. Instructions for lab work will be provided in advance, students are expected to have read this material and be fully prepared for the lab. All students are to participate fully in lab exercises. Your participation grade is based on lab attendance and lab participation.

Lab Assignments are due at the START of the indicated lab day (see lab schedule below). All lab assignments must be **handed in as paper/hard copies** for grading. Missed submission deadlines will result in late penalties.

Essay and Seminar Presentations

All essay topics must be cleared with your professor. See the handout specifically on this assignment. The essay will be **due at the start of lecture on November 20th (no exceptions! 10% per day late penalty)** and the seminars will be presented on November 21st and November 28th (half the class presenting each time).

Late Penalties

Any lab reports received after the start of the lab sessions *or* essay papers received after the start of class as per the schedule will be considered late. Late submissions will be subject to a 10% penalty per day.

Lab Reports and Essay Papers will not be accepted if more than THREE days late.

Turnitin.com

Students will be required to submit their assignments to **Turnitin.com** for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site. The assignments in this course must be submitted as a single hard copy as well as via the Turnitin.com website in digital format (a single file). Procedures for submitting to Turnitin.com will be provided during the course.

Academic Honesty

All work in this course is covered by the University of Toronto's policies on Academic Misconduct (see below hyperlink), which outlines the behaviours that constitute academic dishonesty, as well as the processes for addressing academic offences. The University treats cases of cheating and plagiarism very seriously, so please **REVIEW THIS MATERIAL** as you are expected to be familiar with it.

<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf>

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. All submitted material for grading **MUST** be your own. You may not copy from anyone's report or make up facts. Referenced sources are to be cited. If you have questions regarding appropriate academic behaviour, research practices, or citation methods, seek out additional information on academic integrity from Dr. Zigouris or from other institutional resources (<http://academicintegrity.utoronto.ca/>).

Readings

Textbook Chapters that should be read in support of lecture material are outlined on the course schedule. You should ensure that you **UNDERSTAND** everything you read and can follow the examples given. For exams, concentrate on learning material presented in lectures and related material in your text. I recommend you do the readings weekly as this is the best way to ensure you understand the material. Work through examples at end of the chapters. **To succeed in this course, you should **KNOW** the lecture material and be sure you **UNDERSTAND** the **TEXT** and readings.**

Exams

Each exam will consist of definitions of basic concepts, short answer, and 2-3 essays. The latter will require you to synthesize concepts from the lecture/text and support them with examples from the lecture/text. When I discuss techniques, make sure you understand and can apply them. Material for the midterm will

include all lecture material to that point. The final will be comprehensive, but stress the new lectures (2/3s) and key concepts that integrate material.

One week 'Statue of Limitations'

Grading questions about exams, lab reports, essays, seminar presentations etc., must be addressed within one week of the scores being posted online or handed out. After this time, no changes will be made to existing grades unless there is a calculation error. It is essential that you check your grades regularly and contact your TA or instructor within one week if you feel an error has been made or if you are unsure why you lost points.

Accessibility

We welcome students with diverse learning styles and needs at this University and in this course. If you require some sort of accommodation, please see me or contact the AccessAbility Services Office (see below links) as soon as possible. We will work with you to ensure that you are able to meet the course learning objectives successfully. The UTSC AccessAbility Service staff are available by appointment to assess your specific needs, provide referrals, and to arrange appropriate accommodations. All enquiries are confidential.

UTSC AccessAbility: ability@utsc.utoronto.ca, (416) 287-7560, AA142

BIOC59 - Lecture Schedule (tentative - subject to change at discretion of instructor)

Week	Date	Lecture Topic	Reading (Krebs)
1	Sept. 4	Definitions & Scope of the Field Regulation of Population Size	Chapters 1 - 3 part of Chapter 14
2	Sept. 11	Population Demography & Growth	Chapter 8
3	Sept. 18	Population Growth	Chapter 9
4	Sept. 25	Species Interactions: Competition	Chapter 10
5	Oct. 2	Species Interactions: Competition & Predation	Chapters 10 & 11
6	Oct. 9	Species Interactions: Predation	Chapter 11
7	Oct. 14 - 18	READING WEEK	
8	Oct. 23	MIDTERM EXAM (NOTE: 3 hours, starts at 8am and ends at 11am)	
9	Oct. 30	Regulation of Population Size Analyzing Geographic Distributions	Chapter 14 Chapter 4
10	Nov. 6	Factors That Limit Distributions I: Biotic	Chapter 5
11	Nov. 13	Factors That Limit Distributions II: Abiotic	Chapter 6
12	Nov. 20	Relationship between Distribution & Abundance Essay Due - at start of lecture	Chapter 7
13	Nov. 27	Applied Problems: Pest Control	Chapter 16

BIOC59 - Lab Schedule (tentative - subject to change at discretion of instructor)

Week	Date	Lab Topic
1	Sept. 5	Forest Walk and Talk - tree identification
2	Sept. 12	Field Trip: Vegetation Lab **
3	Sept. 19	Goldenrod Lab: weighing of specimens and data input
4	Sept. 26	Vegetation Lab: data input and analysis
5	Oct. 3	Goldenrod Lab Due - at start of lab Monitoring Wildlife & Small Mammal Field Trip - trap set up
6	Oct. 10	Small mammal trapping
7	Oct. 14 - 18	READING WEEK
8	Oct. 24	Vegetation Lab Due - at start of lab Small mammal trapping, discussion of data and assignment
9	Oct. 31	No Lab
10	Nov. 7	Small Mammal Lab Due - at start of lab
11	Nov. 14	How to Present a Seminar Session
12	Nov. 21	Seminar Presentations (first half of class)
13	Nov. 28	Seminar Presentations (second half of class)

**** The Vegetation Lab Field Trip is quite intensive and will take more than 3 hours to complete!**