

BIOC61: Community Ecology and Environmental Biology

Fall 2015

Welcome to *Community Ecology*!

As *Homo sapiens*, we are active participants in ecological communities every day. Community ecology is the ecology of interactions, of biodiversity. It is the scale at which we can observe ecology in action! In this course, I hope to share not only the science of community ecology, but also to increase awareness of the communities in which we live and our influence on them. As the convergence among many scales in ecology, community ecology is important to understanding, synthesizing, and applying many universal concepts in ecology.

Goals for the Course:

- 1. Describe the processes that affect ecological community structure including species interactions and spatial structuring of communities**
- 2. Characterize the structure of ecological communities**
- 3. Describe and predict how anthropogenic perturbations (habitat fragmentation, climate change, etc.) will affect ecological communities**
- 4. Develop analytical, writing, and verbal presentation skills**

Professor: Dr. Robin Marushia

Contact: rmarushia@utsc.utoronto.ca,

Office Hours: 1 – 2:30 pm Mon. SW563B, and by appt.

TA's: TA's are available by email throughout the term. Office hours only by special appointment.

Please see Blackboard for TA contact information.

The Course:

Lecture: MW160, Mondays, 3 – 5 pm (NO CLASS THANKSGIVING HOLIDAY, OCT.12, 2015)

The midterm and final exam will be based on lecture material. Lecture material is the material delivered during in-class lecture. Slides posted online may not contain all the material delivered during lecture!

WebOption is not offered for this course, either as a supplement or as a separate section.

The textbooks for this course (suggested as study guides and supplemental reading)

Mittelbach, G. 2012. *Community Ecology*. Sinauer Associates, Inc.; 1st ed.

I also use excerpts from: **Morin, P.G. 2011. *Community Ecology*, 2nd ed.. Wiley Blackwell, Oxford, UK.**

The text is available at the Bookstore. A copy will be under Course Reserves at the UTSC library. *Morin is also available as an e-book if you are within the UofT server system – please see BlackBoard for a link!*

Tutorial: SW309, Wednesdays, 2 – 5 pm (MANDATORY)

The tutorial is **required** for this course. The tutorial is treated not only as a discussion section, but assignments and final project work take place during the tutorial. Marks for this course are distributed among both lecture and tutorial material, so your participation in both is required.

Please note that *you will alternate weeks to attend tutorial after the first week!* Pay special attention to tutorial scheduling so you know when to come!

BlackBoard and Intranet

We will post most of the resources, links, marks, and other important course materials to BlackBoard. Please check it regularly. Modifications to this syllabus (lecture topics) will be posted there.

Marking policies:

- Late assignments are docked 10% each day they are late, up to 5 days (*including* weekends), after which they are not accepted.
- The midterm is held during classtime on Oct. 19, 2015. A make-up exam is allowed only with a UTSC Health Centre doctor's note. In the event of significant illness or other event which prevents you from taking the midterm, you must inform Dr. Marushia within **3 days** and provide the UTSC doctor's note (for illness) or other convincing documentation (TBD) within 1 week. Students with valid reasons for missing the midterm will be given a new make-up exam (NOT the same exam as given to the class) to cover the first portion of the course.
- The final exam is NOT comprehensive, and will test material from the midterm to the end of term. The final exam will be held in the examination period. Anyone absent from the final exam must petition the registrar's office to take a deferred exam.

Classroom Policies:

- 1) Please refrain from using your cell phone during class.
- 2) As advanced students, participation and respectful behaviour are expected. Please minimize distractions and give your instructors and fellow students your full attention.
- 3) Some materials will be provided online as lecture notes – these are intended to facilitate note-taking and enable learning during lectures, not to replace attendance to lecture.

Academic Honesty Policy:

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- Using or possessing unauthorized aids.
- Looking at someone else's answers during an exam or test.
- Misrepresenting your identity.

In academic work:

- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from Dr. Marushia or from other institutional resources (see <http://www.utoronto.ca/academicintegrity/>).

AccessAbility Statement

Students with diverse learning styles and needs are welcome in this course! In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff (located in SW302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations (416) 287-7560 or ability@utsc.utoronto.ca.

BIOC61: *Community Ecology and Environmental Biology Schedules, 2015*

Lecture Schedule (subject to change – Blackboard postings are the final word)

	Lecture				Reading
Week	Date	Subject 1	Subject 2	Subject 3	<i>all Readings Mittelbach</i>
1	7-Sep	none - Labour Day			<i>unless specified otherwise</i>
1	9-Sep	Limiting Resources	Adaptations	Community Ecology	Ch. 1
2	14-Sep	NO CLASS - Dr. Marushia Absent. Lecture held during Tutorial on Sept. 9 - see above.			
3	21-Sep	Measures of Abundance	Spatial Diversity	Temporal Diversity	Ch. 2, Morin Ch. 1
4	28-Sep	Interactions: +/-	Niche Partitioning	Competition	Ch. 8 and 9
5	5-Oct	Density Dependence	LV Model	R* Model	Ch. 4 and 7
6	12-Oct	NO CLASS - READING WEEK			Ch. 5 and 6
7	19-Oct	MIDTERM			
8	26-Oct	Predation	Predation Models		
9	2-Nov	Ecological Networks	Food Webs	Top-Down vs. Bottom-Up	Ch. 10 and 11
10	9-Nov	Metapopulations	Metcommunities	Patchy Environments and Refuges	Ch. 12
11	16-Nov	Tradeoffs	Succession	Assembly Theory	Morin Ch. 13 & Ch. 9
12	23-Nov	neutral theory & Null models	phylogenetics	Trait Diversity	Ch. 13, Ch. 15 pp. 324-333
13	30-Nov	Disturbance	Alternative Stable States	Diversity-Stability	Ch. 14
14	3-Dec	Biological Invasions	Restoration Ecology	(catch up)	TBD or none
		Final			

Tutorial Schedule

Week	Date	Activity
1	9-Sep	LECTURE 1. Tutorial Intro and organization.
2	16-Sep	Group 1 - Intro to Figure Interpretation Assignment
3	23-Sep	Group 2 - Intro to Figure Interpretation Assignment
4	30-Sep	Group 1 - Tutorial Activity 1
5	7-Oct	Group 2 - Tutorial Activity 1
6	14-Oct	READING WEEK
7	21-Oct	Group 1 - Tutorial Activity 2. FI Assignment Due.
8	28-Oct	Group 2 - Tutorial Activity 2. FI Assignment Due.
9	4-Nov	Group 1 - Final Project Peer Review
10	11-Nov	Group 2 - Final Project Peer Review
11	18-Nov	G1 - Presentations. G1 final projects due.
12	25-Nov	G2 - Presentations. G2 final projects due.
		No Tutorial December 2!

Grading Scheme

Midterm		20 (4 weeks)
Final Exam		35 (7 weeks)
Results/Discussion Assignment		10
Tutorial Activity 1		5
Tutorial Activity 2		5
Final Project		20
Presentation Feedback		5
		100

Options for Final Project (Full Assignments Posted on Blackboard):

- 1) Presentations*: current areas of research in community ecology.
 - a. Maximum: ~20 students
 - b. Topic suggestions given, although proposals considered.
 - c. Synthesis of a *recent, key topic* in the science of community ecology
 - d. Marks consist of a 10-minute presentation to the class and a 3-page concise summary with a list of no less than 20 citations.
 - e. Fellow students required to critique presentations (for marks!).
- 2) “Take a Hike!”: Assessing local communities
 - a. No max students
 - b. Options for local communities/areas to visit given, proposals considered
 - c. A topical analysis of the major species, patterns, and processes that constitute the community.
 - d. Requires at least one visit to the community to document the species and patterns observed via a photo journal.
 - e. 8 – 12 page paper summarizing the attributes of the community, important research and findings from the community, and threats or aspects of current human use / future status.

***Only 10 students may do a Presentation!** Presentation & Paper option is first-come, first-served.
Sign up with your TA during Tutorial on Sept. 16 or 23rd (depending on your Group).