ENV234H1F - Fall 2020
Environmental Biology: Structure & Function of Ecosystems
Syllabus

Is taking an online course right for you? *We will make every effort to support your learning this fall, but you may want to take a minute to reflect what online learning implies, both in terms of technology and learning environment. The University has put together the following document to help you think through this: https://onlinelearning.utoronto.ca/is-online-learning-for-me/*

If you are not sure - give it a try! *It might prove more manageable than you thought originally. Let us know if you have questions or concerns - we may be able to help. (env234.admin@utoronto.ca).*

See UofT Technology Access Service if needed: https://onesearch.library.utoronto.ca/news/curbside-pickup-now-includes-gerstein-and-downsview-books-and-technology-access-services#Tech%20Access

Time and Location

Lectures: Mondays & Wednesdays, 10:10-11am (online on *Quercus* BbCollaborate)
I will be online 10-15 min early to chat and answer questions. My office hours will follow each class (~30 min), as needed.

Labs: 1.5 h every week (online, on BbCollaborate). **Important**: Make sure you are registered in the right PRA section on ACORN by Monday Sept. 14 at noon.

**Times are Eastern (Toronto) Time - EDT until Nov. 1 at 2 am, EST after that*

PRA sections	Day	Time of PRA sessions*
0101	Tuesdays	9:10-10:30 am
0102	Tuesdays	10:40-12:00 am
0201	Tuesdays	2:10-3:30 pm
0202	Tuesdays	3:40-5:00 pm
0301	Wednesdays	2:10-3:30 pm
0302	Wednesdays	3:10-4:30 pm
0303	Wednesdays	3:40-5:00 pm
0401	Thursdays	9:10-10:30 am
0402	Thursdays	10:40-12:00 am

Course Instructor: Hélène Cyr <helene.cyr@utoronto.ca>
e-mail is best since I will be working off-campus this term

Course Administrator: Karen Williams <env234.admin@utoronto.ca>

Teaching Assistants: TBA on *Quercus*

e-Office Hours (on *BbCollaborate*, get the right one!)

- Course Administrator: Wed. & Thurs. 11 am - 12:30 pm
- Professor Cyr: Mon. & Wed. 11-11:30am (after class) and by appointment (e-mail to schedule more convenient time).
- Teaching assistants will monitor their *Discussion Boards* and hold electronic office hours weekly (schedule TBA on *Quercus*). Remember that during labs you have your TA's full attention, so make good use of that time!

Questions?

- Logistical issues, changing labs, extensions, declaring absence or not being able to hand in assignment, *Quercus* and other administrative issues: Course Administrator.
- Lecture content, general academic questions, grades: Professor Cyr. **Question box** (on *Quercus* Discussion Board) for questions we did not have time to address during class.
- Lab assignments and presentations: your Teaching Assistant on discussion board or during e-office hours.

Marking Scheme:

Weekly quizzes on lecture videos: best 20 (of 22) 20%
15 min time limit, due at 10:00 am before class (available 24h before class)

Tests: in-class, online (50 min)
Lecture tests (4 best of 5), see Lecture Schedule 40%
Lab test (during Final Assessment Period) 10%

Lab assignments: (see lab schedule) 30%

- Individual assignments (2) = 6%
- Group assignments (4) = 14%
- Oral presentation, individual grade (1) = 5%
- Participation (questions & discussions) = 5%
- Group Work Plan for each presentation (5) = 1% bonus

Teaching approach this term

This year I am taking advantage of our online course to "flip" our classroom. Before each class, I ask that you watch and understand a short lecture video (~30 min) and answer a few quiz questions (to make sure you have watched the lecture carefully). I will post the lecture slides separately and it is up to you to make sure you understand the main points of the lecture. This means we can spend class time clarifying and applying these concepts to real life examples. This approach should enhance your understanding and learning of the material, but it will work best if you come to class well prepared and if you are actively engaged in the online activities. We have some flexibility in how to cover the material during online classes, and I will ask for

feedback midterm to see if my approach works for you. We will discuss alternatives as needed.

Online Etiquette & Tips

Here are a few pointers we can all use to help remote meetings run smoothly and pleasantly for everyone.

- **Ensure that your technology works correctly**. Join online session early and test your equipment setup before the meeting starts.
- **Personal privacy: check behind you.** Position your computer so it faces a blank wall or hang a sheet behind you to preserve privacy of your working area and of people or pets who might be walking behind you during online meetings. Background movement is also distracting to the rest of us. BbCollaborate does not give the option of adding a digital background screen so you'll have to find your own way to do this.
- **Raise your hand to talk** and state your name before you start talking, (especially if you are not visible to the others in the meeting), e.g., "Hi, this is Sue, and I just wanted to say..."
- **Mute your microphone** when you are not speaking, to avoid contributing background noise and echos.
- **Adjust lighting** so we can see you well - this might mean turning on/off additional lights. Also try to look into the camera when you are talking - it will look more natural to others if you focus your eyes on your computer's camera instead of the screen.
- **Pay attention.** It's easy to let your concentration drift when you are not in the same room as the others.

Lab attendance (online, synchronous, mandatory): You are expected to attend all labs and to have a microphone and a camera to communicate with your TA and peers. These lab sessions will not be recorded (for privacy reasons).

Make sure to join your PRA section on time - your TA will do a roll call at the beginning of each session. We expect you to attend the lab section you are registered in. All work will be done in groups and each group will be working on a unique project, so if you crash into the wrong PRA session you will be asked to leave. Make sure you are registered into a PRA section before noon on Monday Sept. 14 so we can assign you a project before the first lab. Contact our Course Administrator (env234.admin@utoronto.ca) if you have any question about your PRA section.

Submit all lab assignments on *Quercus*. Lab assignments will be presented and discussed during lab so late submissions will NOT be accepted. Marking rubrics for lab assignments and oral presentations are posted under Labs in *Quercus*.

If you have any questions about marking of assignments or tests see the Course Administrator as soon as possible, but within 4 weeks of the assignment or test grade being posted.

Let the Course Administrator know before the due date if you cannot attend a PRA

session and/or if you cannot hand in an assignment and promptly record your absence on ACORN. Workloads, malfunctioning computer equipment, lack of access to data and texts, and failing to know your due date are not legitimate reasons for not handing in an assignment.

Course Website

All course materials will be available via *Quercus* at q.utoronto.ca. It is important to check both the website and your UTORmail regularly, for lecture videos, lecture and lab material, lab group assignment, announcements and any changes or clarification on assignments and due dates.

Important: ***Lectures and course materials*** *prepared by the instructor are considered by the University to be an instructor's intellectual property covered by the* Copyright Act*, RSC 1985, c C-42. Course materials such as PowerPoint slides and lecture recordings are made available to you for your own study purposes. These materials cannot be shared outside of the class or "published" in any way. Posting recordings or slides to other websites without the express permission of the instructor will constitute copyright infringement.*

E-mail Policy

All email messages to the Course Administrator or to the professor must include ENV234 in the subject line; otherwise your message may be deleted. Note that TAs do NOT have enough hours to answer individual e-mails, but please make use of their discussion board and weekly e-office hours. Discussion board are not monitored constantly - TAs will answer questions as needed, during their e-office hour. If you need an answer quickly, please consult the course syllabus and other information on *Quercus* – you will most likely find the information there.
We do not accept email submission of any assignment.

Supplementary textbooks

There is no required text for this course. I list below supplementary textbooks, which are all available electronically through the UofT library and may be useful for additional background on topics we will cover in class and in the labs. The UofT library has a rich source of electronic material - do not hesitate to browse!

Chapin, F.S., Matson, P.A. & Vitousek, P.M. 2011. *Principles of terrestrial ecosystem ecology*. 2nd ed. Springer, New York, NY.

Coleman, D.C. 2010. *Big ecology: the emergence of ecosystem science*. University of California Press, Berkeley, CA.

Day, J.W., B.C. Crump, W.M. Kemp & A. Yáñez-Arancibia. 2012. *Estuarine Ecology*, 2nd ed. Wiley-Blackwell

del Giorgio, P.A. & P.J. le B. Williams. 2005. *Respiration in aquatic ecosystems*. Oxford University Press, Oxford, UK.

Dighton, J. & J.A. Krumins. 2014. *Interactions in Soils: Promoting Plant Growth*. Springer Science, Dordrecht, Netherlands.

Dodds, W.K. 2002. *Freshwater Ecology: Concepts and Environmental Applications*. Academic Press, San Diego.

Gilvear, D.J., M.T. Greenwood, M.C. Thoms & P.J. Wood. 2016. *River Science: Research and Management for the 21st Century*. John Wiley & Sons, Hoboken, NJ.

Le B. Williams, P.J., D.T. Thomas & C.S. Reynolds. 2002. *Phytoplankton Productivity: Carbon Assimilation in Marine and Freshwater Ecosystems*. Blackwell Science, Oxford, UK.

Lukac, M., P. Grenni & M. Gamboni. 2017. *Soil Biological Communities and Ecosystem Resilience*. Springer International Publishing, Cham, Switzerland.

Müller, F, C. Baessler, H. Schubert & S. Klotz. 2010. *Long-Term Ecological Research: between Theory and Application*. Springer, Dordrecht, Netherlands.

Rhoads, B.L. 2020. *River Dynamics: Geomorphology to Support Management*. Cambridge University Press, New York, NY.

Valiela, I. 2015. *Marine ecological processes*, 3rd ed. Springer, NY.

Wall, D.H. et al. 2012. *Soil Ecology and Ecosystem Services*. Oxford University Press, Oxford, UK.

Academic Integrity

Academic integrity is one of the cornerstones of the University of Toronto. It is critically important both to maintain our community, which honors the values of honesty, trust, respect, fairness and responsibility, and to protect you, the students within this community, and the value of the degree towards which you are all working so diligently.

According to Section B of the University of Toronto's **Code of Behaviour on Academic Matters** (http://www.governingcouncil.utoronto.ca/policies/behaveac.htm), which all students are expected to know and respect, it is an offence for a student:

- To use someone else's ideas or words in your own work without acknowledging that those ideas/words are not your own with a citation and quotation marks, i.e., plagiarism.
- To include false, misleading or concocted citations in your work.
- To obtain or provide unauthorized assistance on any assignment.
- To falsify or alter any documentation required by the University (e.g. doctor's notes).
- To submit your own work for credit if it has been submitted in another course.

There are other offences covered under the Code, but these are the most likely in this course. Please respect these rules and the values that they protect.

Also see http://advice.writing.utoronto.ca/using-sources/how-not-to-plagiarize on *How Not to Plagiarize*. Always cite your sources. In case of doubt about plagiarism, talk to your instructor.

Accessibility Services

Students with diverse learning styles and needs are welcome in this course. Please feel free to approach Prof. Cyr, the Course Administrator and/or Accessibility Services so

that we can assist you in achieving academic success in this course: https://studentlife.utoronto.ca/department/accessibility-services/ Students requesting accommodation for course assessment must be registered with Accessibilities Services. However, Accessibility Services does not provide us with information about individual students, so you must tell us (as early as possible) if you need special consideration with lectures, quizzes/tests, PRA session activities or assignments.

Academic Counseling

We understand that life sometimes throws us curve balls. If you are struggling with any of your courses for any reason (material too hard, family/life/medical challenges, balancing work and school, etc.) **please contact us, and your college registrar, sooner rather than later**. We often hear from students after an exam or assignment is due, when it is too late to help with accommodations, assistance, or referral.

Improving your writing skills

Effective communication is crucial in science. The University of Toronto provides services to help you improve your writing (http://www.writing.utoronto.ca), from general advice on effective writing, to writing courses and workshops, and (free) quality English language instruction. Take advantage of these!

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Online Lecture Schedule

*ET: Eastern Time (Toronto time) - EDT until Nov. 1 at 2 am, EST after that

LEC	Date	Lecture Topic *(watch lecture video & do quiz before class)*	Online Class *10:10-11 am ET**
1	Sept. 14	Introduction: Scope of the course & logistics	Q&A
2	Sept. 16	Soils: Interface between geology and biology	
3	Sept. 21	Soils: Texture, structure, density	
4	Sept. 23	Soils: Organic matter, ion exchange capacity	
5	Sept. 28	Soils: Buffering capacity & acidification	
6	Sept. 30	Terrestrial Ecosystems: Light, temperature effects	**TEST** (LEC 2-5)
7	Oct. 5	Terrestrial Ecosystems : Water, nutrient effects	
8	Oct. 7	Terrestrial Ecosystems : *The World is Green* hypothesis	
-	Oct. 12	**Thanksgiving Holiday (no lecture)**	
9	Oct. 14	Aquatic Ecosystems: Water density, stratification	
10	Oct. 19	Aquatic Ecosystems: Ecological impacts of stratification	
11	Oct. 21	Aquatic Ecosystems: Other important properties of water	
12	Oct. 26	Global water budget & water resources	**TEST** (LEC 6-11)
13	Oct. 28	Ecological succession: Communities are dynamic	
14	Nov. 2	Biological diversity and what drives it	
15	Nov. 4	Patterns of diversity: Why do we (should we) care?	
-	Nov. 9-13	**Fall Reading Week (no lectures)**	
16	Nov. 16	Microbes: so small and so important	
17	Nov. 18	Microbes: the Tower of Life	
18	Nov. 23	Global N cycle (1)	**TEST** (LEC 12-17)
19	Nov. 25	Global N cycle (2)	
20	Nov. 30	Global P cycle	
21	Dec. 2	Global S cycle	
22	Dec. 7	Global C cycle: Foodwebs	
23	Dec. 9	Global C cycle: Sustainability	
24	Dec. 10 *(makeup)*	-	**TEST** (LEC 18-23)
	Final Assessment Period (1h each, total 2h)		**LAB TEST** & **TEST** (LEC 2-23)

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Lab Schedule

Lab	Dates	Lab Topic	*To Do* / **DUE before lab**[1]	**% of grade**
	Sept. 10	***NO LAB** (make-up Thursday on Dec. 10)*	-	-
1	Sept. 15-17	Intro & sound/camera check with your TA; Meet your Working Group (30 min)	*Read handouts*[2]	-
2	Sept. 22-24	Data Management & Effective Presentation; Group meeting (20 min)	*Install Excel 2016 on your computer*[3]	-
3	Sept. 29-Oct. 1	**Oral presentations**: Intro to your Research Site	**PowerPoint** (group)	3.5
4	Oct. 6-8	Environmental Factors; Group meeting (30 min)	*Read handouts*[2]	-
5	Oct. 13-15	**Oral presentations**: Environmental Factors	**Graph(s)** (individual)	3.5
6	Oct. 20-22	How to communicate effectively with graphs Group Assessment (20 min)	**Peer Review** (individual)	2.5
7	Oct. 27-29	Primary Productivity; Group meeting (30 min)	*Read handouts*[2]	-
8	Nov. 3-5	**Oral presentations**: Primary Productivity	**PowerPoint** (group)	3.5
-	Nov. 9-13	**Fall Reading Week (no labs)**		
9	Nov. 17-19	Decomposition & Energy Use; Group meeting (30 min)	*Read handouts*[2]	-
10	Nov. 24-26	**Oral presentations**: Decomposition & Energy Use	**PowerPoint** (group)	3.5
11	Dec. 1-3	Diversity & Foodwebs; Group meeting (30 min)	*Read handouts*[2]	-
12	Dec. 8-10	**Oral presentations**: Diversity & Foodwebs	**PowerPoint** (group)	3.5
Presentation (each student gives one oral presentation & answers questions; individual)				5
Participation (lab discussions, questions following presentations; individual)				5
Lab Test (during Final Assessment Period)				10
TOTAL				**40**

[1] Submit all assignments on *Quercus* before lab. You will present and discuss your assignments during lab so **late assignments will NOT be accepted**.

[2] Lab handouts will be posted on *Quercus* under "Labs"

[3] Free-of-charge to UofT students through Information Commons (Windows & Mac versions)