

# ENV334H1S - Environmental Biology: Applied Ecology Syllabus (Winter 2020)

*[revised March 19, after class vote (26 students, unanimous)]*

## Time and Place:

Lectures: Mondays & Thursdays, 3-4 PM, SS2105

Labs: RW124 or CQUEST room or bus for fieldtrip (see schedule)

P0101 - Tuesdays 9-12 AM (CQUEST room is RW109)

P0201 - Wednesdays 2-5 PM (CQUEST room is RW107)

## Contacts:

Instructor (and lab coordinator):

Prof. H el ene Cyr, helene.cyr@utoronto.ca, 416-978-0975, RW414

Office hours: Thursdays, after lecture (4-5 PM). E-mail to schedule another time if needed.

\*\*\* *For all e-mail communication, make sure you put ENV334 in the title of your message or it might be deleted with the many junk messages I get every day. If you do not get an answer within 24 hours (excluding week-ends), try again; your message might have gotten lost... We do **not** accept any e-mail submission of lab reports.*

Teachings assistants: (see Quercus for TA names and contact information)

\*\* *Your TA has 1 hour per week scheduled to answer your questions using the live Bb Collaborate function on Quercus. The schedule for these electronic office hours will be posted on Blackboard. And of course, you will be seeing your TA in the lab most weeks, so use that time efficiently!*

## Marking Scheme:

Individual lab reports:	45%
Nutrient loss from agricultural soils (10%)	
River flow in urban & suburban watersheds (5%)	
Phosphorus management in Lake Simcoe (15%)	
Toxicity Bioassays (15%) - <i>replaced with essay-type assignment on same topic</i>	
Group project:	20% (possible 2% bonus)
Proposal (5%), Group meeting reports (2% bonus)	
Presentation (15%) <i>group presentations done on Bb Collaborate</i>	
Final exam (3h during exam period):	35%
<i>Replaced with open-book problem solving exam (posted April 6, due April 23)</i>	

**NOTE:** *Please hand in everything on time!! There will be a penalty of -5% per day, including week-ends, for all late lab reports. Reports will not be accepted if they are more than 5 days late.*

## Course Web page (on *Quercus*):

All course information will be stored on *Quercus* (<http://q.utoronto.ca>). You will have access to the Syllabus, Lecture Schedule, Lab Schedule, Lecture slides (pdf files) and class data sets. If you have any problem accessing the material, let me know right away so I can fix the problem (e-mail is best).

*Note that **access to the lecture slides is not a substitute for attending lectures.** The content of these slides will likely be difficult to understand without the explanations provided during lectures. Lecture slides are only used as visual aids.*

## Course Manual & Recommended textbooks:

### Required Course Manual:

The ***ENV334H1S Environmental Biology: Applied Ecology Lab Manual*** will be available at *Caversham Booksellers* in early January. It contains the syllabus, lecture and lab schedules and the lab manual. Bring the lab manual to all labs.

#### ***Caversham Booksellers***

98 Harbord St. (1.5 blocks west of Spadina)

Business hours: M-W: 9AM-6PM, Th-F: 9AM-7PM , Sat: 10AM-6PM, Sun 12-5PM

### Recommended textbooks:

Withgott, J., M. Laposata and B. Murck. 2017. *Environment: the science behind the stories*. 3<sup>rd</sup> Canadian ed. Pearson Canada, Toronto. [*short term loan, ESC Library*]

Weil, R.R. and N.C. Brady. 2017. *The nature and properties of soils*. 15<sup>th</sup> ed. Pearson, Boston. [*short term loan, ESC Library*]

Brooks, K.N., P.F. Folliott, and J.A. Magner. 2013. *Hydrology and the management of watersheds*, 4<sup>th</sup> ed. Iowa State Press, Ames, Iowa. [*electronic resource through UofT Library*]

## Labs and lab reports:

Read carefully through the lab manual before each lab to enhance your learning experience and take full advantage of your time in the lab. For most labs, you will be asked to bring or to prepare something ahead of time, and sometimes to hand it in at the beginning of lab. Make sure you read all instructions early enough so you have time to do what is asked before the lab. Also, please arrive on time since there will be important information given at the beginning of each lab.

The due dates for lab reports are listed at the bottom of the lab schedule (see back cover of manual). When you submit your report on *Quercus*, it will be reviewed automatically by Turnitin.com for 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."

<https://www.academicintegrity.utoronto.ca/smart-strategies/plagiarism-detection-software/>

## **CQUEST labs:**

A few labs will run in the CQUEST computer lab (see lab schedule). To use the CQUEST workstations, you will need your UTORid. <http://www.cquest.utoronto.ca/>

Saving data: The CQUEST computers have a LINUX operating system that emulates Windows 2000. This means that nothing is saved between sessions, unless you save it on a USB key, or e-mail it somewhere else. Make sure you figure out how to save your work ahead of the lab.

## **Improving your Writing skills:**

Effective communication is crucial in science. The University of Toronto provides a wide range of services to help you improve your writing (see specific section on lab reports), from general advices on effective writing, to writing centers and writing courses, and a English Language Learning program (ELL) for students whose first language is not English. See <http://www.artsci.utoronto.ca/current/advising/ell> and <http://www.writing.utoronto.ca/>

## **Academic Integrity:**

You should be aware of the University of Toronto *Code of Behaviour on Academic Matters*. Also see <http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize> on *How Not to Plagiarize*. Note that it is NOT appropriate to use large sections from internet sources, and that inserting a few words here and there does not make it an original piece of writing. Be careful when using internet sources – there is no review of most online material and there are MANY errors out there. Only use internet sources from academia, government or well-recognized international organizations (e.g., UNESCO, FAO) when absolutely necessary. Make sure you read material from many sources (published, peer-reviewed, trusted internet sources) and that you write an original text using this information. Always cite your sources. In case of doubt about what constitutes plagiarism, talk to your instructor.

## Grading of Lab Reports:

We will use the following marking scheme to grade your lab reports.

	A	B	C	F
<b>Argument</b>				
Organization and Structure	Paper proceeds logically from start to finish and is coherent throughout.	Paper includes minor logical inconsistencies, but they hardly detract from the overall coherence of the argument.	Significant logical inconsistencies in parts of the paper make the overall credibility of the argument somewhat dubious.	The paper is illogical, incoherent, and as a result completely unconvincing.
Objectivity	Paper demonstrates a masterful grasp of all sides of the issue.	Paper effectively recognizes a variety of points of view.	Paper fails to deal with contrary points of view or deals with them unfairly.	The author has used the paper as a pulpit instead of performing a rigorous critical analysis.
<b>Evidence</b>				
Depth	Paper draws from excellent primary and secondary sources of information. Quantity and quality of sources exceed expectations.	Paper draws from a legitimate variety of primary and secondary sources of information. Quantity of sources meets or exceeds expectations.	While the paper might draw from a significant number of sources, the information obtained from those sources is largely superficial.	Paper is drawn largely, if not exclusively, from inappropriate material.
Synthesis	Presentation of the evidence demonstrates a masterful understanding of the topic, both specific and general.	Presentation of the evidence demonstrates a clear understanding of the topic, both specific and general.	Presentation of the evidence demonstrates a flawed understanding of the topic, either specific or general.	Presentation of the evidence demonstrates a flawed understanding of the topic, both specific and general.
Relevance	Evidence is directly applicable to the analysis throughout.	Evidence is largely applicable to the analysis throughout.	Some of the evidence is clearly tangential and detracts from the credibility of the argument.	Evidence does not contribute to a fulfillment of the goals of the assignment.
<b>Writing</b>				
Overall	Grammar, punctuation and spelling virtually flawless. Language and word choice appropriate throughout. References are properly formatted.	Minor problems with grammar, punctuation and spelling, which do not detract from the overall message of the paper. References are properly formatted.	Significant flaws in grammar, punctuation, spelling and/or word choice make the paper difficult to read. Format of references is inconsistent.	Paper is incoherent because of flaws in grammar, punctuation, spelling and/or word choice. References are not properly formatted.
<b>Graphs and Tables</b>				
Overall	Graphs and Tables are properly formatted, easy to read, represent correct data, with complete legend. Graphs contain all the elements listed in the Graph Checklist.	Graphs and Tables are properly formatted, easy to read and represent correct data. Legends are incomplete, graphs might be missing a few elements.	Graphs and Tables are not properly formatted, or are unclear and difficult to read. Correct data are presented, but without error estimates. Graphs are missing many elements.	Missing Graphs and Tables, missing legends, not representing correct data, plotting raw data instead of means.

# ENV334H1S

## Environmental Biology: Applied Ecology

### Lecture Schedule (Winter 2020)

*Monday & Thursday 3-4 PM in SS2105*

Jan. 6	Brief introduction to course; Managed and natural ecosystems
Jan. 9	Neolithic (agricultural) Revolution: worst mistake in human history?
Jan. 13	The Green Revolution
Jan. 16-20	Intensive agriculture and its effects: (1) Soil erosion & depletion of organic matter
Jan. 23	(2) Nutrient imbalances & soil biodiversity
Jan. 27	(3) Salinization
Jan. 30	(4) Pesticides and pesticide resistance
Feb. 3	Towards sustainable agriculture
Feb. 6-13	Land use affects hydrological processes and water quality in rivers
Feb. 17-21	<i>FAMILY DAY HOLIDAY &amp; READING WEEK (no lectures)</i>
Feb. 24-Mar. 2	Dams and their effects
Mar. 5	Ecosystem management: Lake Simcoe (case study)
Mar. 9	Adaptive management: dealing with ecosystem complexity
Mar. 12-16	Bioaccumulation & Biomagnification; POP Transport
Mar. 19	How to measure anthropogenic impacts: Bioassays & Bioindicators
Mar. 23-30	Restoration Ecology; Ecosystem restoration, rehabilitation, reclamation
Apr. 2	Bio-remediation

# ENV334H1S - Environmental Biology: Applied Ecology

## Lab Schedule (Winter 2020)

Tuesdays 9-12 AM, Wednesdays 2-5 PM

<u>Date</u>	<u>Where</u>	<u>Topic</u>
Jan. 7/8	-----	<b>NO LAB</b>
Jan. 14/15	RW124	Management/Restoration/Reclamation group project <i>Introduction, group assignments, initial group discussions</i>
Jan. 21/22	RW124	Lab 1 - Nutrient loss from agricultural soils
Jan.28/29	RW124	Management/Restoration/Reclamation group project <i>Meet with your TA to discuss proposal (15 min appointments)</i>
Feb. 4/5	CQUEST*	Lab 2 - River flow in urban & suburban watersheds
Feb. 11/12	(RW124)	Management/Restoration/Reclamation group project <i>(TA available by appointment during lab period)</i>
Feb. 18/19	-----	<b>READING WEEK (no labs)</b>
Feb. 25/26	CQUEST*	Lab 3 - Phosphorus management in Lake Simcoe (Part 1)
Mar. 3/4	CQUEST*	Lab 3 - Phosphorus management in Lake Simcoe (Part 2)
Mar. 10/11	(RW124)	Management/Restoration/Reclamation group project <i>(TA available by appointment during lab period)</i>
Mar. 17/18	RW	Lab 4 - Water Quality in the Don River Watershed (field trip) <i>** note bus departure/arrival times **</i>
Mar. 24/25	RW124	Lab 5 - Toxicity Bioassays
Mar 31/Apr 1	RW124	Management/Restoration/Reclamation project – <i>presentations</i>

\* meet in CQUEST room RW109 (Tuesday labs) and RW107 (Wednesday labs)

### **DUE DATES for Proposal & Lab Reports** [submit on Quercus before 11:59pm]

Jan. 28/29	Group Proposal (bring a hard copy at meeting with your TA)
Feb. 4/5	Nutrient loss report
Feb. 25/26	River flow report
Mar. <del>17/18</del> <u>24/25</u>	P management in Lake Simcoe report - <u>extended DUE date</u>
Apr. <u>30</u>	Toxicity bioassays report - <u>extended DUE date</u>