

ENVIRONMENTAL BIOLOGY

ENV234H1F (Fall 2014)

I. COURSE SYLLABUS

1. TEACHING TEAM

<u>Professor</u>	<u>Dept.</u>	<u>E-mail</u>	<u>Office</u>	<u>Telephone</u>
S. Wadgymer (<i>team leader</i>)	EEB	susana.wadgymer@mail.utoronto.ca	ES3054	416-978-5807
J. Bollmann	Earth Sciences	bollmann@es.utoronto.ca	ES4115	416-978-2061
J. Eckenwalder	EEB	james.eckenwalder@utoronto.ca	RW301	416-978-3544

Administrative Coordinator

S. Wadgymer EEB susana.wadgymer@mail.utoronto.ca ES3054 416-978-5807

Teaching Assistants see course website (Blackboard)

a. Whom to contact

<i>TYPE OF QUESTIONS</i>	<i>CONTACT</i>
Logistical questions about the course, grades, changing labs, extensions, doctor's notes	Susana Wadgymer (<i>Administrative Coordinator</i>)
Questions about a specific field trip or lab, data entry, lab reports	Your Teaching Assistant (TA)*
Scientific content of specific lectures	Individual professor
General academic questions, any concern about the course, all other questions	Susana Wadgymer (<i>Team Leader</i>)

**Note: Teaching assistants are ONLY available during field trips and labs and during their office hours. Please be considerate and do not contact them outside these hours – they are students too! Instead, make sure you use the time allotted to labs and office hours efficiently. Professors do not have set office hours, but will be happy to talk with you outside of class time. Just contact us to make an appointment (e-mail is usually best).*

b. E-mail policy

For all e-mail communication, make sure you put ENV234 in the title of your message. If your message is not titled properly, it might be deleted with the dozens of junk messages we get every day. If you do not get an answer within 48 hours (excluding week-ends), try again; your message

might have gotten lost... We **do not** accept e-mail submission of any assignment or lab report.

2. COURSE WEBSITE (on Blackboard)

<http://www.portal.utoronto.ca> [use your **UTORid** and **password**, go to **MY COURSES**]

All course information will be stored on Blackboard. You will have access to the Syllabus, Contact information for the teaching team, TA office hours, Lecture Schedule, Lecture Slides (pdf files), Lab Schedule, Pre-lab quizzes, and Class Data Sets (Google doc links/Excel files). You will also be able to sign up for the Joker's Hill field trip. *If you have any problem accessing the material, let Susana know right away so that she can fix the problem (e-mail is best).*

3. LECTURES (*see detailed schedule on the inside front cover of the manual*)

a. **Time:** Monday & Wednesday, 10:00am -11:00am

Location: McLennan Physical Labs, Room 103

b. **Philosophy on lecture attendance:**

The lectures are a vital component of this course. Although we will post lecture slides on the course website, this material is not a substitute for coming to lectures. Lecture slides are meant to support and illustrate the points made during lecture, but the emphasis and main conclusions may not be clear without comments from the lecturer. Each instructor will use his/her web notes differently. Some professors will post material before lectures and expect you to bring the notes to class. Others will post material after the lecture.

c. **Lecture Schedule:** [*see inside front cover*]

d. **Required & Supplementary textbooks:**

Required:

1) **Environmental Biology 234H1F Course Manual (Fall 2014)** will be available in early September at Scholar House Productions, 100 Harbord St. (west of Spadina). This contains the syllabus, lecture and lab schedules, important general information and the lab manual for the course. *PLEASE read the laboratory manual and fill out the online Pre-lab Quiz (on Blackboard) before arriving at each field trip or lab.* This will enhance your learning experience and will ensure that you work efficiently and finish the work in time. There may also be instructions in the course manual on material to bring with you or work you need to do before the field trip or lab. Bring the lab manual to all labs and field trips.

2) **Eyles, Nick. 2004. *Toronto Rocks: The geological Legacy of the Toronto Region.*** Fitzhenry & Whiteside. Markham.

Supplementary textbooks: These texts may be useful for additional background reading and as aids in writing lab reports.

Bush, M.B. 2003. *Ecology of a Changing Planet* 3rd ed. Prentice Hall.

Carlson, D., Hammersley, L., Plummer, C. *Physical Geology*. 14th ed. McGraw Hill, MA.

Chapin, F.S. III, P.A. Matson and H.A. Mooney. 2002. *Principles of terrestrial ecosystem ecology*. Springer-Verlag, NY.

Enger, E.D. and B.F. Smith. 2008. *Environmental science: a study of interrelationships*, 12th ed. McGraw Hill, MA.

Krebs, Charles. 2008. The ecological world view. CSIRO Publishing. [*electronic resource, UofT library*]

Raven, P.H., R.F. Evert and S.E. Eichhorn. 2005. *Biology of Plants*, 7th ed. W.H. Freeman & Company, NY. [*for students unfamiliar with Plant Biology*]

Raven, P.H., L.R. Berg and D.M. Hassenzahl. 2008. *Environment*. John Wiley & Sons.

Reynolds, Stephen J. 2010. *Exploring Geology*. McGrawth/Higher Ed. 2nd ed.

Roots, B.I., Chant, Donald E. and Heidenreich, C.E. (eds.) 1999. *Special Places: The Changing Ecosystems of the Toronto Region*. [*on reserve in the ESC library*]

Valiela, I. 2006. *Global Coastal Change*. Blackwell Publisher, MA.

Valiela, I. 1995. *Marine ecological processes*, 2nd ed. Springer, NY.

Withgott, J., S. Brennan and B. Murck. 2013. *Environment: the science behind the stories*. 2nd Canadian ed. Pearson Canada, Toronto. [*on reserve in the ESC library*]

Williams, M.A.J., Dunkerley, D.L., DeDeckker, P., Kershaw, A.P., Stokes, T. 1998. *Quaternary Environments*, Arnold, London.

4. LABS & FIELD TRIPS *see detailed schedule on back cover of the manual*

a. General information:

Attendance at all laboratories, field trips and the Joker's Hill day trip is **COMPULSORY**. You **MUST** attend the laboratory section that you are enrolled in. You will receive a mark for the lab assignment only if you have attended the field trip or laboratory that you are registered in. Absence without **DUE CAUSE** will result in loss of marks. Please see Susana if you miss any lab for any reason. Changes to your lab time after the first day of class must be made through Susana, not on ROSI.

BE ON TIME!!! Important information and instructions are given at the beginning of field trips and labs, so it is important that you be on time. It is your responsibility to budget enough time for travel:

Field trips start promptly at 9:00AM and 2:00PM at the field site. *We allow 30 min of lab time for travel at the end of morning field trips and at the beginning of afternoon field trips.*

Indoor labs start promptly at 9:00AM and 1:30PM.

All field sites are within walking distance from a subway station or bus stop. Check ahead of time where you are going and allow enough time to get to the site on time. You can plan your trip using the TTC website (http://www3.ttc.ca/Trip_planner). If you prefer to ride your bicycle, check the City of Toronto Cycling map (<http://www.toronto.ca/cycling/map/>). We will not wait for late comers. If the group has left it is your responsibility to catch up with them.

b. Lab Schedule and Marking Scheme: [see inside back cover]

(i) Lab sections and meeting day:

*P0101: Week 1 – Tuesday 9:00 to 12:00

*P0201: Week 1 – Tuesday 1:30 to 4:30

P0301: Week 1 – Wednesday 1:30 to 4:30

P0401: Week 1 – Thursday 9:00 to 12:00

P0102: Week 2 - Tuesday 9:00 to 12:00

P0202: Week 2 - Tuesday 1:30 to 4:30

P0302: Week 2 – Wednesday 1:30 to 4:30

P0402: Week 2 – Thursday 9:00 to 12:00.

*Students in lab sections P0101 (Tuesday AM) and P0201 (Tuesday PM) will have alternative meeting times for lab 5 due to fall break on November 18. These alternative arrangements will be announced on blackboard during the middle of the course – keep an eye out for this information.

c. Safety

(i) What to bring on field trips:

- **ENV234 Course Manual** with written directions and/or map of how to get to and from the field site. Make sure that you check the schedule so that you go to the correct location. Check your e-mails for any last minute change. Getting lost will not be taken as an excuse for missing the exercise.
- **Check** the Environment Canada **weather forecast** for Toronto
- **Pencils** (*Best to use a pencil to record your field notes as ink can run. Bring an extra, just in case...*)
- Water bottle, hat and sunscreen lotion.
- Long pants, socks and strong closed walking shoes are recommended so that your body is protected from thorny plants, poison ivy and biting insects. Shorts and sandals are not

advisable. If rain is forecast, rubber boots and rain gear is advisable. If the forecast is for cold weather, bring hat, scarf and mittens. We go out regardless of the weather. Come prepared.

- Backpack with space for samples, which you may be asked to carry back to the van.
- If you are unable to attend a field trip you must contact Susana prior to the trip.

(ii) Field safety:

Any field trip involves some risks of personal injury. We will be working in urban parks and ravines, on uneven terrain that may be littered with dangerous material (e.g. broken glass, rusty pieces of metal, garbage). We will do everything we can to keep you safe on these field trips. In turn, we ask you to act responsibly while in the field. Do not take risks, travel and work in groups and report any concern you have, incident or accident to your instructor. Your TA is there to help you. *Please report any allergy or medical problem to your instructor at the beginning of the field trip.*

(iii) Lab Safety & Policy: (This does not replace the detailed instructions provided during labs)

FIRST AID: Tell your instructor of any emergency!

- First aid kit is available on all field trips and in lab room 122.

HEALTH AND SAFETY:

- * Lab coats are compulsory for ALL wet labs for all Biology courses.
- * Wear the protective equipment which is supplied (e.g. gloves, goggles).
- * MSDS sheets are available on the front table for the chemicals used in the labs.
- * Do NOT discard chemical waste into the sink. Chemical waste containers are provided.
- * Wash your hands before you leave the lab.
- * Absolutely no food or drink can be consumed in the lab.

EQUIPMENT:

- * Report broken or damaged equipment to your TA and describe the nature of the problem as best you can. We need to know that something is broken in order to fix it!
- * Report spills in/on equipment immediately to your TA – some chemicals will permanently damage the equipment if not cleaned up properly and quickly.

GLASSWARE:

- * Please do NOT write on the printed white labels on any glassware – it is very difficult and time consuming to remove. You MAY write on the smooth glass surface using a Sharpie marker.

d. Data and Lab Reports

(i) Submitting Field/Lab Data:

For several labs, you will need to share your data with the rest of your group or with the whole class. Your TA will give you instructions on where to enter your data, usually in GoogleDoc. Please submit your data promptly so we can post the full class data set as early as possible, giving you maximum time to analyze data and write your lab reports. Class data sets will be available on the course website on Blackboard.

(ii) Submission of Lab reports & Turnitin

A hard copy of all lab reports must be handed in to Susana no later than 4:00 PM on the DUE date (see inside back cover). See the ENV234 web page for her office hours. We encourage you to print all assignments on both sides of the page to save paper. E-mailed or faxed assignments will NOT be accepted. Contact Susana if you are unable to hand in your assignment on time. Extensions will be granted only when students present compelling reasons for their inability to meet a deadline with satisfactory documentation to support the request. Documentation should be submitted to Susana for consideration.

Students are also required to submit all lab reports by the due date 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. Grades will not be released until this is done, and may eventually be lost (i.e., a mark of zero will be assigned) if the report is not submitted to Turnitin. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin website (www.teaching.utoronto.ca/teaching/academicintegrity/turnitin/conditions-use.htmDocument4). Turnitin.com is most effective when it is used by all students; however, if and when students object to its use on principle, we offer a reasonable offline alternative. We will then ask the student to meet with the professor in charge of that lab to outline and discuss the lab report.

Marked assignments can be picked up from Susana's office. Look for an announcement on Blackboard to tell you when assignments are ready for pick up. If you have any questions about marking see Susana as soon as possible, but within 4 weeks of the assignment or test being available for pick up.

5. MARKING SCHEME

a. **Summary of DUE dates and Marking Scheme** [*see the back cover*]

b. **Grades online (Blackboard)**

Grades will be posted on Blackboard as soon as they are available. Once the marks are posted assignments are available for pick up. Contact Susana if you have questions about your posted grades.

c. **Penalties for late submission**

Assignments are due no later than 4:00 PM on the due date, after which it will be considered late. Turnitin can provide a copy of your report with a time stamp in the unlikely event that your report is lost, but we need a hard copy of your report (also handed in on time) for your TA to grade. There will be a penalty of 5% per day for late assignment up to a maximum of 5 days. **Assignments more than 5 days late will not be accepted**, unless there are extenuating circumstances (e.g. medical reasons with a medical certificate). Let Susana know before the due date if you cannot hand it in. Workloads, malfunctioning computer equipment, lack of access to data and texts are not legitimate reasons for late submission.

d. Missed Term Test

Students who miss the midterm test for reasons entirely beyond their control may submit a written request for special consideration explaining the reason for missing the test to Susana within one week of the missed test. Students must attach appropriate documentation, such as the official University of Toronto medical certificate (www.illnessverification.utoronto.ca).

6. 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 centers and writing courses. Take advantage of these!

7. 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> on *How Not to Plagiarize*. Note that it is NOT appropriate to use large sections from internet sources, and inserting a few words here and there does NOT make it an original piece of writing. Be careful in using internet sources – there is no review of most online material and there are MANY errors out there. Use only academic or government internet sources 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 plagiarism, talk to your instructor.

8. DISABILITY SERVICES

Students with diverse learning styles and needs are welcome in this course. Please feel free to approach Susana or Accessibility Services so that we can assist you in achieving academic success in this course. (<http://www.accessibility.utoronto.ca/index.htm>)

For students already registered with Accessibility Services, please provide Susana with a copy of your accommodation letter as early as possible.

ENV234H1F-Lecture Schedule (Fall 2014)

Month	Date	Prof.	Lecture Topic	Labs
September	8	SW	Introduction	
	10	JB	Why is Geology important for ecology and evolution?	
	15	JB	Climate and environmental change over the last million years	
	17	JB	Glacial landforms: Oak Ridges Moraine	Lab 1
	22	JB	Paleoenvironmental reconstruction: methodology, terrestrial examples and limitations	
	24	JB	Paleoceanography: examples and limitations	
	29	JB	Paleoenvironmental reconstruction: the tropical arctic	
October	1	JB	Climate forcing factors	Lab 3
	6	JB	Earth History	
	8		Midterm (during lecture)	
	13		THANKSGIVING (no lecture)	
	15	JE	Soils: interface between biology and geology	Lab 4 (I - II)
	20	JE	Biodiversity: biota vs biomes: vegetation zonation	
	22	JE	Synusia: life forms & forest structure	
27	JE	Syndromes: pollination & seed dispersal		
29	JE	Speciation: specialization and niches		
November	3	JE	Biodiversity: gradients of true plants	Lab 4 (I - II)
	5	JE	Communities: forests, facts & factors	
	10	SW	Water budget & water resources	
	12	SW	Basic structure of aquatic ecosystems	
	17		FALL BREAK (no lecture)	
	19	SW	Microbes: so small and so important	Lab 5
	24	SW	Global N cycle	
26	SW	Global P & S cycles		
December	1	SW	Global C cycle: Primary producers feed the world	
	3	SW	Food webs, sustainability, and a changing climate	

ENV234 - Lab & Field Trip Schedule, Due Dates & Marking Scheme (Fall 2014)

Lab 1: pre-lab and post-lab reports due on site. Submit pre-lab report to Turnitin before lab.

Lab 2, Part I & II: reports due at 10AM in class, submit to Turnitin by 4PM.

Labs 3-5: hand in report to Penelope Gorton and submit to Turnitin by 4PM.

	Marks	Cycle 1						Cycle 2					
		Tuesday AM& PM		Wednesday PM		Thursday AM		Tuesday AM & PM		Wednesday PM		Thursday AM	
		P0101 & P0201		P0301		P0401		P0102 & P0202		P0302		P0402	
		Lab Date	Due Date	Lab Date	Due Date	Lab Date	Due Date	Lab Date	Due Date	Lab Date	Due Date	Lab Date	Due Date
Lab 1- (short report) Soil Stratigraphy at the Don Valley Brickyard	5	Sept 16	<i>Sept 16</i> (on site)	Sept 17	<i>Sept 17</i> (on site)	Sept 18	<i>Sept 18</i> (on site)	Sept 23	<i>Sept 23</i> (on site)	Sept 24	<i>Sept 24</i> (on site)	Sept 25	<i>Sept 25</i> (on site)
Lab 2- (Part I & II) All Day Field Trip to the Koffler Reserve at Joker's Hill	15	Fri. Sept 26 or Sat. Sept 27	<i>I) Oct 20*</i> or <i>II) Nov 24*</i>	Fri. Sept 26 or Sat. Sept 27	<i>I) Oct 20*</i> or <i>II) Nov 24*</i>	Fri. Sept 26 or Sat. Sept 27	<i>I) Oct 20*</i> or <i>II) Nov 24*</i>	Fri. Sept 26 or Sat. Sept 27	<i>I) Oct 20*</i> or <i>II) Nov 24*</i>	Fri. Sept 26 or Sat. Sept 27	<i>I) Oct 20*</i> or <i>II) Nov 24*</i>	Fri. Sept 26 or Sat. Sept 27	<i>I) Oct 20*</i> or <i>II) Nov 24*</i>
MIDTERM	20	Wednesday October 8 (1h test, during class)											
Lab 3- (short report) Ecosystem Management: Oak-Savannah in High Park	5	Sep 30	<i>Oct 7</i>	Oct 1	<i>Oct 8</i>	Oct 2	<i>Oct 9</i>	Oct 7	<i>Oct 14</i>	Oct 8	<i>Oct 15</i>	Oct 9	<i>Oct 16</i>
Lab 4- Part I Human Impacts on Soil Properties	-	Oct 14	-	Oct 15	-	Oct 16	-	Oct 21	-	Oct 22	-	Oct 23	-
Lab 4- Part II (short report) Human Impacts on Soil Properties	7.5	Oct 28	<i>Nov 11</i>	Oct 29	<i>Nov 12</i>	Oct 30	<i>Nov 13</i>	Nov 4	<i>Nov 19</i>	Nov 5	<i>Nov 19</i>	Nov 6	<i>Nov 20</i>
No labs on November 12th, 13th, and 18th.													
Lab. 5- (short report) Production/Respiration Balance in Aquatic Ecosystems	7.5	*Nov 11	<i>*Nov 19</i>	Nov 19	<i>Nov 26</i>	Nov 20	<i>Nov 27</i>	Nov 25	<i>Dec 2</i>	Nov 26	<i>Dec 3</i>	Nov 27	<i>Dec 3</i>
Final Exam	40	2h exam during Final Exam Period (set by Arts and Science)											
Total	100												