

ENVS200 Spring 2018

Field Ecology

I. Basic course information

Professor	Dr. Brendon Larson (www.brendonlarson.com)
Office hours	i. Professor. <u>Through June 14:</u> Thursdays, 3-4pm. <u>No office hours the week of June 18-22,</u> when I will be away teaching a field course. <u>Starting the week of June 25:</u> Mondays, 11-12am (<u>except</u> July 2 holiday). Or by appointment (send email via LEARN). <u>Office:</u> EV2-2016. ii. TAs. <u>Starting the week of June 25:</u> Monday through Friday 12-1pm. <u>Office:</u> EV1-356.
Class meetings	Mondays 2:30-4:20 in RCH-101
Labs	11 lab sections in EV1-131; see your course schedule for days and times.
Communication	If you have a question that applies to other students, please use the appropriate LEARN Discussion Forum: Admin, Lab, or Lecture. One of your classmates may answer your question, though we will monitor to facilitate timely, accurate responses. You may choose the 'anonymous' option for your posts (Connect/Discussions), as long as decorum is maintained. If necessary, <u>personal</u> questions may be directed as follows: <u>Admin:</u> You may send questions related to dropboxes, lab trips, late enrolment, and late lab reports to your Admin TA, Rachael Edwards, via LEARN. <u>Grading:</u> Email the TA who graded your lab report using LEARN. <u>Lab:</u> For questions related to your particular lab (e.g., attendance and content) speak to your TA during lab or during office hours, or send an email to him/her via LEARN. <u>Lecture:</u> Please post general questions related to lectures (content, clickers, Wiley-Plus, exams) to the Lecture Forum or you may ask questions in person during class or in office hours. For more personal questions, send an email to Professor Larson via LEARN. <i>We aim to respond to forum posts and necessary emails within 24hrs, except over weekends.</i>
UW-LEARN	LEARN will be used for the following: announcements, emails, discussion forums, dropboxes for lab reports, grades, lab and lecture quizzes, and supplemental lab resources. Course emails will be sent through LEARN, which will forward to your uwaterloo account. Please check that your email address on WatIAM is either your uwaterloo account or a current personal account (https://watiam.uwaterloo.ca/idm/user/login.jsp) to receive course emails. If you are registered in the course and have checked your UW-ID and WatIAM and still cannot access LEARN, please email learnhelp@uwaterloo.ca . Note: if you register in the course in Quest, it is normally processed within 24hr, but it could take up to 48hr to add you to LEARN.
Required items	i. <i>Essentials of Ecology</i> (4th Ed., Wiley), by Begon, Howarth and Townsend. The WileyPlus version, with online e-text (ISBN 9781119218548), is available at the bookstore for special, negotiated price: \$49.95. You have already been <u>pre-registered</u> for WileyPLUS: You can login using your username@edu.uwaterloo.ca address (with username as password) at www.wileyplus.com/class/640880 (rather than by searching for ENVS200 on the site). Alternatively, the Bookstore has paperback text + WileyPlus/etext (\$130.95) and paperback text alone (\$110.95) or you can access the text on reserve at the library or in the Ecology Lab. ii. <i>ENVS 200 Student Lab and Field Trip Manual: Spring 2018 Edition.</i> Available at the bookstore (\$12). You must purchase this version because it differs from earlier ones. iii. Physical iClicker and/or REEF digital access (which allows responses with your phone). Available at the bookstore for as little as \$14 (full options to be presented in class). You can opt out of this purchase (see p. 5).
Field trip fees	\$23.27+HST. You may pay with a credit card at https://university-of-waterloo.myshopify.com/collections/field-trips ("ENVS 200 Spring 2018 Field Trip Fee"), and will be emailed a receipt, which you must present to board the bus for the field trip in Week 5.

II. Course overview and learning outcomes

Ecology is the study of the relationship of organisms with their environments (including other organisms). In this sense, this course is neither more nor less than getting to know the basic principles by which the organisms that share our planet—including ourselves—live their lives and interact with one another. It is a course about life on Earth. Such knowledge, called ecoliteracy, will provide a critical basis for your engagement in the 21st century, the “century of the environment”—not least because so many of the environmental issues we face derive in part from a limited understanding of how we are embedded within and dependent upon ecological systems. Field ecology necessarily harbours an ethical component both because of our natural affinity for life (or ‘biophilia’) and because questions of ecological ‘impact’ and ‘quality’ are necessarily value-laden.

ENVS200 will not be a passive lecture-style course but an engaging series of student-centered mini-lectures interspersed with group and individual activities (including weekly labs). There will be quizzes about your weekly readings prior to each lecture, so that we can spend our time together working on problem areas and going further with the material. This is a university level course, so I want you to become engaged in the issues rather than focusing on ‘knowing all the answers.’ My aim is to introduce you to the worldview of ecology so that you can be more aware of the beauty, diversity and complexity of life around us and thus better appreciate its importance.

By the end of this course, you should be on a path to life-long learning as an **ecologically-literate citizen**. More specifically, you should be able to do the following (our course learning outcomes):

- i. **identify** and **explain**, with examples, the main principles of ecology;
- ii. **demonstrate** how these principles apply to real-world situations (in context of both class meetings and labs), including human interactions with the natural world;
- iii. **articulate** the elements of scientific inquiry as they apply to ecology; and
- iv. **evaluate** ecological arguments presented in the media and elsewhere (e.g., for application within your future career).

These course learning outcomes will not only prepare you to be an informed citizen and member of the community of life on earth, but also provide the basis for knowledge, humility, and wisdom in your dealings with ecological problems in your daily life and eventual career.

III. Course assessment

I have designed the course so that assessment aligns with our learning outcomes as indicated in the following table. Teaching and assessment will occur in a variety of ways to suit different learning styles. The learning outcomes will be developed through regular activities in preparation for major course assessments (i.e., midterm, lab report, and exam).

Learning outcome	Teaching and learning activities	Assessment methods
i. identify and explain, with examples, the main principles of ecology	Readings, In-class activities, Labs, Office hours	Weekly quizzes, clickers, exams, lab activities/report
ii. demonstrate how these principles apply to real-world situations, including human interactions with the natural world	Readings, In-class activities, Labs, Office hours	Weekly quizzes, clickers, exams, lab activities/report
iii. articulate the elements of scientific inquiry as they apply to ecology	Readings, In-class activities, Labs, Office hours	Clickers, exams, lab activities/report
iv. evaluate ecological arguments presented in the media and elsewhere	In-class activities, Office hours	Clickers, exams

10% Clicker/REEF participation

We will begin using clickers/REEF in class in week 2 (Monday, May 14). You will earn 2 points for answering in-class questions and 1 point for getting them correct. There will be no accommodation for missing questions because you can miss up to 20% of them, for any reason (e.g., forgetting to bring clicker, clicker not working, absence from class), and you still have the opportunity to receive 10% (i.e., the grade will be adjusted so that 80% = 100%). To begin getting points, follow the instructions at <https://uwaterloo.ca/learn-help/iclickerreef-polling-students> and see the FAQ under LEARN/Course Materials/Content. Also see clicker policies on p. 5.

10% Lab activities (in-lab and field assessment)

One lab report quiz worth 3% (see p. 4). Other marked activities during labs during the term (7%).

15% Weekly quizzes in LEARN

There will be ten weekly quizzes (indicated by an asterisk on the course schedule) and they will be worth 1.5% each. The quizzes will cover the readings for the next lecture (see next page). They will be available in LEARN by noon each Wednesday, and you must complete them by the Saturday evening (11:59pm) prior to lecture (see p. 5 for submission policy). Each quiz will include a space for you to ask a question about something you didn't understand in the readings: I will choose the 'best question' each week to address in class and if yours is chosen you will obtain a 1% bonus on your grade in the course (max: 1 per person).

Note: You may wish to utilize WileyPlus for practice questions. *If you have any problems with Wiley Plus, please go to www.wileyplus.com/support, where you can access their support, including live chat.*

15% Midterm exam

This 60-minute exam will consist of multiple-choice questions. The midterm tests knowledge and application of material from all classes, labs, and textbook readings up to and including the last class and labs before the midterm (through week 4, not including readings for week 5).

25% Lab report

You will submit a draft report (10%) and then a final report (15%). The rubrics for these reports are available in your lab manual and will be discussed further in lab.

25% Final exam

This 2.5-hour exam will consist of multiple-choice questions, true-false, fill-in-the-blank, and short answer questions. It will cover all classes, labs, and textbook readings, but will emphasize material introduced after the midterm exam. Though the exam will have a multiple-choice component, it will not focus on trivia; instead, the exam will assess the learning outcomes for the course as a whole. The final exam is scheduled by the Registrar and will be announced by the University and in class. See p. 5 for further detail on exam policy.

1% Bonus

By the Friday prior to each lecture, please send me a link to a song and explain how it connects to ecology. If I choose yours as the best (i.e., connect to the week's topic), I will play it in class & you get a bonus.

IV. Course schedule

You must complete textbook readings and the associated quiz in LEARN by the Saturday evening (11:59pm) prior to each lecture indicated by an asterisk. It is critical that you review the course “reading guide” in LEARN before reading because you are not responsible for all textbook sections and vocabulary.

Week Number. Week begins and class meets on Monday, ...	Topic for class	Readings in textbook (* = this reading will be covered in LEARN quiz)	Events in class	Lab/Field trip activities L = in lab (EV1 134), B = by bus (Ring road, EV2), F = on foot	Deadlines/ Events in lab
1. May 7	Introduction	Ch. 1 [<i>optional, but recommended</i>]		<u>Lab 1.</u> Introduction to ENVS200 field ecology lab (LF)	Turnitin alternate declaration due: May 20, 11:59pm (see p. 6)
2. May 14	Evolution	*Ch. 2.1-2.3 ¹		<u>Lab 2.</u> Indicator species: Bird identification & taxonomy (LF)	
3. Tues., May 22	Conditions and resources; Climate and biomes	*Ch. 3.1-3.3 <u>and</u> Ch. 4.1-4.3	Review	NO LABS	Complete WHMIS in LEARN (see lab manual, p. 9)
4. May 28	Individuals and populations	*Ch. 5.1-5.4		<u>Lab 3.</u> Restoration: Limiting factors and populations (F)	Pay field trip fee prior to bus trip (see p. 1)
5. June 4	Interspecific competition	*Ch. 6.1-6.3	Midterm (1st hr)	<u>Lab 4.</u> Ecosystem assessment: Laurel Creek Part I (B)	
6. June 11	Diverse interactions	*Ch. 7.1-7.4 <u>and</u> Ch. 8.3		<u>Lab 4.</u> Ecosystem assessment: Laurel Creek Part II (LF)	
7. June 18	Communities: Dr. Andrew Trant	*Ch. 9 ²		<u>Lab 4:</u> Ecosystem assessment: Laurel Creek Part III (L)	
8. June 25	Species richness	*Ch. 10.1-10.3	Guest: Dr. Simron Singh, SEED	<u>Lab 5.</u> Tree identification and succession (LF)	Lab report quiz
9. July 2	NO LECTURE			<u>Lab 6.</u> Succession and landscape ecology: A woodlot (B)	Draft lab report due: 11:59pm on day of your lab section
10. July 9	Flux of energy and matter	*Ch. 11.1-11.5		<u>Lab 7.</u> Conservation ecology and our urban environment (B)	
11. July 16	Global cycles and their alteration	*Ch. 12	Guest: Dr. Bill Annable, Civil & Env. Engineering	<u>Lab 8.</u> Climate change – Spongy Lake (B)	
12. July 23 Wed., July 25	Conservation ecology	*Ch. 13.1-13.3		No labs	Final lab report due: 11:59pm on Wed., July 25 ³
	Wrap-up	Ch. 14	Review and course evaluation	No labs	

¹ You do not need to read Ch. 2 sub-section on “Sympatric speciation.”

² You do not need to read Ch. 9 sub-sections on “Using k-value analysis” and “Population and community stability and food web structure.”

³ Students in Thursday and Friday labs may instead submit their final lab report on the day of their lab section, though note that July 26th and 27th are “pre-examination study days.”

V. Course policies

This syllabus is a contract between us, so you must abide by the policies and schemes laid out here (as will I, for my part). If you have any questions or concerns, please speak with me as soon as possible.

Academic integrity and offences

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility (<http://uwaterloo.ca/academicintegrity/Students/index.html>). You are expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for your actions. If you are unsure whether an action constitutes an offence, or need help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration, please complete the tutorial at <http://www.lib.uwaterloo.ca/ait> and seek guidance from the course professor, your Undergraduate Advisor, or the office of the Associate Dean – Undergraduate. *Note, in particular, that using someone else’s iClicker is misconduct.*

When misconduct has been detected, disciplinary penalties will be imposed under Policy 71 – Student Discipline (<http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm>). For information on categories of offences and types of penalties, refer to Policy 71. Within the Faculty of Environment, those committing academic offences (e.g. cheating, plagiarism) will be placed on disciplinary probation and will be subject to penalties that may include a grade of 0 on the affected course element, 0 in the course, suspension, and expulsion.

AccessAbility

AccessAbility Services (<https://uwaterloo.ca/accessability-services>), located in Needles Hall – Room 1401, collaborates with all academic departments to arrange appropriate accommodations for students who require them without compromising the academic integrity of the curriculum. Note that in ENV5200 there will be field trips off-path in forests, fields, wetlands and on hilly and uneven terrain. If you require accommodation for any reason, please discuss with AccessAbility Services and register at the beginning of each academic term.

Appeals and grievance

A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 – (Student Discipline) may be appealed if there is a ground. A student who believes they have a ground for an appeal should refer to Policy 72 (Student Appeals) www.adm.uwaterloo.ca/infosec/Policies/policy72.htm

A student who believes that a decision affecting some aspect of their university life has been unfair or unreasonable may have grounds for initiating a grievance. See Policy 70 - Student Petitions and Grievances, Section 4, www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please contact your Undergraduate Advisor.

Attendance and preparation

You are strongly encouraged to attend class meetings because they will be interactive in nature and develop the course material. Please come to class prepared to discuss and engage, which will be reflected not least in your clicker grade. The lab manual outlines specific policies regarding lab attendance (including lateness): you may miss one lab for any reason without penalty; for each additional lab absence, you will receive a penalty of 5% of your final grade.

Availability for exams

Supplemental exams are only set for those with medical or similar problems. You are expected to be present for scheduled examinations, so please see the course schedule for the midterm exam and consult UW’s final examination timetable before making travel plans. No ‘make-up’ examinations are provided to accommodate you for leaving campus early. For the UW policy on exams, see <http://ugradcalendar.uwaterloo.ca/page/Regulations-Overview>. Under certain conditions, you may qualify for exam relief (<https://uwaterloo.ca/registrar/final-examinations/relief-information>).

Clickers

Registering your clicker will be considered opting in; otherwise, this grade component will be transferred to your final exam, but this is discouraged because a clicker is meant to facilitate your in-class learning. It is your responsibility to ensure your clicker is working, so please follow directions and check grades when they are posted.

Communications with instructor and Teaching Assistants

All communication with students must be through either the student’s University of Waterloo email account or via LEARN. If a student emails the instructor or TA from a personal account they will be requested to resend the email using their personal University of Waterloo email account.

Deadlines

There is a penalty of 5% per day for late submission of both draft and final lab reports, to a maximum of four days; after that, the grade will be 0. Please see above (p. 3) regarding weekly quizzes in LEARN. If you do not complete a weekly quiz on time, your grade will be 0, with the only exception being documented medical/compassionate reasons.

Digital distraction

Recent research has demonstrated that students cannot focus effectively on classroom activities and discussions if others around them are using laptops or electronic devices—and their grades, as well as those of their classmates, suffer from multi-tasking (e.g., Taneja *et al.* 2015. Cyber-slacking in the classroom: Potential for digital distraction in the new age. *Computers & Education* 82: 141-151). Accordingly, *please silence your devices before class*. Further, this course involves extensive oral and listening participation (e.g., clickers), in addition to note-taking, so laptops will not be used regularly during class.

Lecture handouts and intellectual property

I will post my Powerpoint lecture prior to lecture, but it will not be complete. I will not include all information (to encourage you to be active note-takers), all images (for copyright reasons), or all clicker questions (so everyone sees them at the same time). These slides are meant to be a template for your note-taking: they will not replace careful attention, note-taking and participation. These are important skills to develop for your future study and career. After lecture, I will post the clicker questions.

You should be aware that this course contains the intellectual property (IP) of the instructor, TA, and/or the University of Waterloo. IP includes items such as lecture content, both spoken and written (and any audio/video recording thereof); lecture handouts, presentations, and other materials in the course (e.g., PowerPoint slides); and questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams). Course materials, and the IP contained therein, are used to enhance a student's educational experience. However, sharing this IP without the owner's permission is a violation of IP rights. For this reason, you must ask for permission before uploading and/or sharing the IP of others online (e.g., to an online repository). Permission is also necessary before sharing the IP of others from completed courses with students taking the same/similar courses in subsequent terms/years. Please alert the instructor if you become aware of IP belonging to others (past or present) circulating, either through the student body or online. The IP rights owner deserves to know (and may have already given their consent).

Note that recording devices during lectures are prohibited without my explicit permission.

Mental health

Along with the University of Waterloo and the Faculty of Environment and its Departments, I consider your well-being to be extremely important. We recognize that many students face health challenges, physical and/or emotional. *Please note that help is available*. Mental health is a serious issue for everyone and can affect your ability to do your best work. Counselling Services (www.uwaterloo.ca/counselling-services) is an inclusive, non-judgmental, and confidential space for anyone to seek support. They offer confidential counselling for a variety of areas including anxiety, depression, grief, relationship issues, sexuality, stress management, substance use, and much more.

Religious observances

Please email me at the beginning of term if you require special accommodation for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

TurnItIn

Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, and are subject to the USA PATRIOT ACT, 2001; therefore, students must be given an alternative (e.g., scaffolded assignment or annotated bibliography) if they are concerned about their privacy and/or security. If you choose not to use TurnItIn you must make an Alternate Declaration in an email to the administrative TA, Rachael Edwards (see p. 4). You must still submit to the admin TA a paper copy of the lab report or project by the assignment due date and time, along with the following: a plagiarism disclaimer form as in the lab template, complete raw data, a rough draft, an extended annotated bibliography for each citation, and original articles or materials used in preparation of the report.

]Unclaimed assignments

Unclaimed assignments will be retained until one month after term grades become official in Quest. After that time, they will be destroyed in compliance with UW's confidential shredding procedures.

Writing

The Writing and Communication Centre (WCC) works with students as they develop their ideas, draft, and revise. Writing and communication specialists offer one-on-one support in planning assignments, synthesizing and citing research, organizing papers and reports, designing presentations and e-portfolios, and revising for clarity and coherence. You can make multiple appointments throughout the term, or you can drop in at the Library for quick questions or feedback. To book a 25- or 50-minute appointment and to see drop-in hours, visit uwaterloo.ca/wcc.

Please note that communication specialists guide you to see your work as readers would. They can teach you revising skills and strategies, but will not change or correct your work for you.