I. Basic course information

Professor: Dr. Christine Barbeau (cbarbeau@uwaterloo.ca)

Office hours: Mondays 1:00 PM - 2:00 PM (EV2 2028)
(*Please review LEARN’s announcement page, on Monday mornings, to see if there are any changes to office hours that week)

Class meetings: Mondays 6:30 PM - 8:20 PM in STP 105

Labs: 9 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, personal questions may be directed as follows:

Admin: You may send questions related to dropboxes, lab trips, late enrolment, and late lab reports to your Admin TA. via LEARN.

Grading: Email the TA who graded your lab report assignments using LEARN.

Lab: 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.

Lecture: Please post general questions related to lectures (content, labs, 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 Barbeau via LEARN.

**We aim to respond to forum posts and necessary emails within general workday hours (8:30 AM – 5:00 PM) and within 48hrs, except over weekends. Please allow your TAs and Professor enough time to answer your emails, not leaving your questions until right before course deadlines.

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. Essentials of Ecology (4th Ed., Wiley), by Begon, Howarth and Townsend. The online e-text version is available at the bookstore ($49.95). Alternatively, the Bookstore has paperback ($110.95) text or you can access the text on reserve at the library or in the Ecology Lab.

ii. ENVS 200 Student Lab and Field Trip Manual: FALL 2019 Edition. Available at the bookstore ($11.56 + HST). You must purchase this version because it differs from earlier ones.

Field trip fees: $15.00 + HST. You may pay with a credit card at https://university-of-waterloo.myshopify.com/collections/field-trips (“ENVS 200 Fall 2019 Field Trip Fee”), and will be emailed a receipt, which you must present to board the bus for all labs during the week of September 30th.

ENVS200 FALL 2019

Field Ecology
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).

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

**10%  In Class Exam Questions (2% Each)**

There will be 10 lectures where we will be working through exam questions to help you review lecture content, synthesize key concepts and think critically on topics from lecture. At the end of the lecture, I will present you with a short answer exam question. This question will be specific to the lecture. We will begin by discussing it as a class and then you will split into small groups/partners and discuss the best strategy for answering the question. You are to then write an answer to the question (individually, maximum length is 200 words). I will give you guidance on exact expectations for each question and you are to submit it to the LEARN dropbox (specific to that lecture) by the end of class (8:20 PM). The purpose of this exercise is to help you review course content, develop critical thinking skills, prepare you for your final exam (by developing an exam bank of possible questions) and to benefit those who attend lecture. One submission will be a freebie; therefore, you can miss one submission and still receive the full 10% (you do not need to inform me that you will be using your freebie, I will calculate that at the end of term). By the end of the term, you will have 10 exam questions, 5 of these questions will appear on the final exam. The final exam will have 8 short answer questions, so by attending lecture and working through the exam questions, you will already know 5 out of 8 questions that will appear on the final exam. You must submit in doc. or pdf. format. However, if you handwrite your notes, and are unable to type your answers, you can take a picture and submit that to LEARN. Your answers must be in your own words and cannot be copied from others. Any violation of academic integrity will be reported.

**40%  Lab activities (lab report assignments & field assessment)**

There will be four lab report assignments worth 34% and other marked activities during labs throughout the term totaling 6%. Since this is a field ecology course, attendance is important. You will be given one “freebie” lab where you are allowed to miss a lab without reason. There is no need to contact your TA or Professor to inform them you are using your freebie. Your overall attendance will be looked at, and the freebie will be applied, at the end of term. If you are missing more than one lab, you must inform your TA prior to your lab section with a doctor’s note or there will be a penalty of 5% off of your final grade per missed lab. If you are missing a lab with a marked activity and you do not attend another lab section to complete that activity, you will get a grade of zero for this lab activity. If you are going to miss a lab and do not have a doctor’s note, you have the opportunity to attend any other lab section during the week. You must email your TA and the TA’s lab section, to let them know you will be attending a different section.

**10%  Weekly quizzes in LEARN**

There will be ten weekly quizzes (indicated by an asterisk on the course schedule) and they will be worth 1.0% 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). You will have 30 mins to complete each quiz. Each quiz will include a space for you to ask a question about something you did not understand in the readings. I will compile these questions and focus on answering them in lecture.
15% Midterm exam
This exam will consist of multiple-choice questions and will take up the lecture slot (1 hour and 50 mins) 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.

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 for an “Ecology Minute” topic for lecture with a brief discussion as to why you find this interesting. If I choose yours as the being the best (i.e., connect to the week’s topic), I will discuss it in class & you give a 1% bonus on your grade in the course. (max: 1 per person).

Marking of Course Assessments:
If you have questions regarding your mark, you must first discuss this with your TA. You must email your TA with a specific concern and a written response as to why you believe you deserve more marks. The fact that you are simply not happy with your mark is not a valid reason for asking for a re-mark. If you still have questions/concerns after talking with your TA, and you would like the instructor to remark your assessment, please note, that a re-mark will be for the entire assessment - possibly resulting in a higher or lower mark. *You have 14 days from the time the mark is posted to LEARN to ask for a re-mark.*
### 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.

<table>
<thead>
<tr>
<th>Class Number.</th>
<th>Topic for class</th>
<th>Readings in textbook (See Reading Guide for Details)</th>
<th>Events in class</th>
<th>Lab/Field trip activities</th>
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</thead>
<tbody>
<tr>
<td>2. September 9th</td>
<td>Introduction</td>
<td>Ch. 1(Optional but recommended)</td>
<td>Exam Question 1</td>
<td>Lab 1A, Campus biodiversity I: Introduction to ENVS 200 field Ecology (LF)</td>
</tr>
<tr>
<td>3. September 16th</td>
<td>Evolution</td>
<td>Ch. 2.1 - 2.3</td>
<td>Exam Question 1</td>
<td>Lab 1B, Campus Biodiversity II: Indicator species: Bird identification (LF)</td>
</tr>
<tr>
<td>4. September 23rd</td>
<td>Conditions and resources; Climate and biomes</td>
<td>Ch. 3.1 - 3.3 and Ch. 4.1 – 4.3</td>
<td>Exam Question 2</td>
<td>Lab 1C, Campus Biodiversity III: Classification of organisms &amp; Tree ID (LF)</td>
</tr>
<tr>
<td>5. September 30th</td>
<td>Individuals and populations</td>
<td>Ch. 5.1 – 5.4 &amp; Ch. 14.1-14.2</td>
<td>Exam Question 3</td>
<td>Lab 2A, Succession and landscape ecology in an urban woodlot I (B)</td>
</tr>
<tr>
<td>6. October 7th</td>
<td>MIDTERM (In Class)</td>
<td>Midterm Review Assignment Review and Help</td>
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<td>7. October 14th</td>
<td>NO LECTURE/LAB: READING WEEK</td>
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<td>8. October 21st</td>
<td>Interactions</td>
<td>Ch. 6.1 – 6.3, Ch. 7.1 – 7.4 &amp; Ch. 8.3</td>
<td>Exam Question 4 Stop, Start, Continue Assignment Review and Help</td>
<td>Lab 3, Restoration: Limiting factors &amp; populations (F)</td>
</tr>
<tr>
<td>9. November 4th</td>
<td>Species richness</td>
<td>Ch. 10.1 – 10.3</td>
<td>Exam Question 6 Assignment Review and Help</td>
<td>Lab 4A, Stream ecosystem assessment I: Laurel creek tour (B)</td>
</tr>
<tr>
<td>10. November 11th</td>
<td>Flux of energy and matter</td>
<td>Ch. 11.1 – 11.5</td>
<td>Exam Question 7</td>
<td>Lab 4B, Stream ecosystem assessment II: Laurel creek sampling (LF)</td>
</tr>
<tr>
<td>11. November 18th</td>
<td>Global cycles and their alteration</td>
<td>Ch. 12 &amp; 14.3 – 14.4</td>
<td>Exam Question 8 Assignment Review and Help</td>
<td>Lab 5, Climate change and a wetland (B)</td>
</tr>
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</table>

Deadlines/Events in lab:
- Turnitin alternate declaration due September, 23rd @ 11:59 pm: see p. 6
- WHMIS completion due 11:59 pm Friday Oct. 4th
- “Introduction” Lab Report assignment due 11:59 pm on day of your lab section
- “Methods” Lab Report assignment due 11:59 pm on day of your lab section
- “Results” Lab Report assignment due 11:59 pm Nov. 11
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<tr>
<td>12.</td>
<td><em>November 25th</em></td>
<td>Conservation ecology</td>
<td>Ch. 13.1 – 13.3</td>
<td>Exam Question 9</td>
</tr>
<tr>
<td>13.</td>
<td><em>December 3rd</em></td>
<td>Final Wrap-up and exam Review</td>
<td>Ch. 14.5 – 14.7</td>
<td>Exam Question 10</td>
</tr>
</tbody>
</table>
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.

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 ENVS200 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).

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 assignments, 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. Exceptions to missed/late course material/quiz/grades will only be accommodated with documented medical/compassionate reasons, that are communicated prior to the assignment/quiz or exam in question.

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:
Please note throughout the term, and reports, designing presentations and e-commerce 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.

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 exam 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.

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. 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.