ENVS200 WINTER 2020

Field Ecology

I. Basic course information

Professor
Dr. Andrew Trant (atrant@uwaterloo.ca)

Student hour
Thursday 12:30 – 1:30pm (EV2-2026)
(*Please review LEARN’s announcement page, on Monday mornings, to see if there are any changes to office hours that week)

Class meetings
Mondays 12:30-2:20pm (RCH-301)

Communication
Please use LEARN Discussion Forums for course-related questions and communications. There are three forums: Lab, Lecture and Admin. You are expected to help your classmates, though the forums will be monitored to facilitate timely, accurate responses. If necessary, any individual, personal questions may be directed as follows:
Lab: For individual questions related to your particular lab (e.g., attendance and content) speak to your TA during lab or during office hours, or send a private email using LEARN.
Lecture: Please ask individual lecture and/or exam content questions in person during class or office hours, or send a private email to Professor Trant using LEARN.
Admin: You may send individual questions related to lab trips, Dropbox, late enrolment, late assignments and/or assignment weight to your Admin TA, Rachael Edwards, via LEARN.
We aim to respond to forum posts and necessary emails within 24 hrs, except over weekends.

UW-LEARN
LEARN will be used for the following: course info, dropboxes for lab reports, your grades, announcements, and course emails/discussion forums. 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) so that you 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
1. 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.
2. ENVS 200 Student Lab and Field Trip Manual: Winter 2020 Edition. Available at the bookstore ($11.91). You must purchase this version because it differs from earlier versions.
3. 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. 3).

Field trip fees
$17.17 (including HST). You may pay with a credit card at https://shop.uwaterloo.ca/collections/field-trips/products/envs-200-field-trip-fee-winter-2020 (‘ENVS 200 Field Trip Fee – Winter 2020’), and will be emailed a receipt, which you must present prior to boarding the bus for the first 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 ecollogically-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. analyze 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. Assessment will occur in a variety of ways to suit different learning styles. Note that the learning outcomes will be developed through regular activities in preparation for the major course assessments (e.g., midterm and final 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>Reading quizzes, clickers, exams, lab activities/report</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>Reading quizzes, clickers, exams, lab activities/report</td>
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<tr>
<td>iii. analyze the elements of scientific inquiry as they apply to ecology</td>
<td>Readings, In-class activities, Labs, Office hours</td>
<td>Clickers, exams, lab activities/report</td>
</tr>
<tr>
<td>iv. evaluate ecological arguments presented in the media and elsewhere</td>
<td>In-class activities, Office hours</td>
<td>Clickers, exams</td>
</tr>
</tbody>
</table>

### 10% iClicker participation

We will begin using iClickers in class in week 2 (Monday, January 13th). You will earn 2 points for answering in-class iClicker questions and 1 point for getting them correct (each question worth a total of 3 points). There will be no accommodation for missing iClicker questions because you can miss up to 20% of them, for any reason (e.g., forgetting to bring iClicker, iClicker 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%). For further details and to register, please see [https://uwaterloo.ca/learn-help/instructors/student-response-system-iclickerreef](https://uwaterloo.ca/learn-help/instructors/student-response-system-iclickerreef). Also see clicker policies on p. 5.

### 10% Weekly lecture quizzes in LEARN

There will be 10 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 90-minute exam will occur in class on Feb 10th. 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 5).

### 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.

### 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. See p. 5 for additional info on exam policy.
### IV. Course schedule

You must complete textbook readings and the associated LEARN LECTURE quiz by Saturday evening before class each week. This schedule is a guide only and subject to change (of which you will be notified).

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic for class</th>
<th>Readings in textbook</th>
<th>Lab/Field trip activities</th>
<th>Deadlines</th>
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</thead>
<tbody>
<tr>
<td>1. Jan. 6</td>
<td>Introduction</td>
<td>Ch. 1 (optional, but recommended)</td>
<td>Lab 1. Introduction to labs (L,C)</td>
<td>Turnitin alternate declaration due January 13, 2020, 11:59pm (see p. 6)</td>
</tr>
<tr>
<td>2. Jan. 13</td>
<td>Evolution</td>
<td>*Ch. 2</td>
<td>Lab 2A. Winter Ecology I: Bird identification-Indicator Species (L,C)</td>
<td>Identification charts 2%</td>
</tr>
<tr>
<td>3. Jan. 20</td>
<td>Conditions and resources; Climate and biomes</td>
<td>*Ch. 3 &amp; Ch. 4</td>
<td>Lab 2B. Winter Ecology II: Road salt use and wildlife tracking (L,C)</td>
<td></td>
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<tr>
<td>4. Jan. 27</td>
<td>Individuals and populations</td>
<td>*Ch. 5 &amp; 14.1-14.2</td>
<td>Lab 2C. Winter Ecology III: Classification of organisms/Tree identification (L,C)</td>
<td></td>
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<tr>
<td>5. Feb. 3</td>
<td>Interactions</td>
<td>*Ch. 6, 7 &amp; 8.3</td>
<td>Lab 3A. Succession &amp; Landscape Ecology I: A Woodlot (B)</td>
<td>WHMIS completion due 11:59pm Friday February 7</td>
</tr>
<tr>
<td>6. Feb. 10</td>
<td>Midterm (in class)</td>
<td></td>
<td>Lab 3B. Succession &amp; Landscape Ecology II: Soil Analysis (L)</td>
<td>“Intro” Lab Report due 11:59pm on day of your lab section (Group project: 10%)</td>
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<tr>
<td>7. Feb. 17</td>
<td>Reading week (Feb 17th-21st)</td>
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<tr>
<td>8. Feb. 24</td>
<td>Communities</td>
<td>*Ch. 9</td>
<td>Lab 4A. Stream Ecosystem Assessment I: Laurel Creek tour (B)</td>
<td>“Methods” Lab Report due 11:59pm on day of your lab section (Individual project: 8%)</td>
</tr>
<tr>
<td>9. Mar. 2</td>
<td>Species richness</td>
<td>*Ch. 10</td>
<td>Lab 4B/C. Stream Ecosystem assessment II: Laurel Creek sampling (L,C)</td>
<td></td>
</tr>
<tr>
<td>10. Mar. 9</td>
<td>Flux of energy and matter</td>
<td>*Ch. 11</td>
<td>Lab 5. Conservation Ecology &amp; Our Urban Environment (B)</td>
<td>“Results” Lab Report due 11:59pm on day of your lab section (Data collection: 2%; Group project: 8%)</td>
</tr>
<tr>
<td>11. Mar. 16</td>
<td>Global cycles and their alteration</td>
<td>*Ch. 12, &amp; 14.3-14.4</td>
<td>Lab 6. Climate Change – Spongy Lake (B)</td>
<td>Vegetation transect 2%</td>
</tr>
<tr>
<td>12. Mar. 23</td>
<td>Conservation ecology</td>
<td>*Ch. 13</td>
<td>Reserved for cancelled labs</td>
<td>“Discussion” Lab Report assignment due 11:59pm on day of your lab section (Individual project: 8%)</td>
</tr>
<tr>
<td>13. Mar. 30</td>
<td>Wrap-up / course evaluation</td>
<td>*Ch. 14.5-14.7 Quiz = exam review</td>
<td>Reserved for cancelled labs</td>
<td></td>
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</tbody>
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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 affected course elements, 0 on the course, suspension, and expulsion.

If you believe that a decision affecting some aspect of your university life has been unfair or unreasonable, you 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 for details. A decision made or penalty imposed under Policy 70 or Policy 71 may be appealed if there is a ground (see Policy 72 – Student Appeals, www.adm.uwaterloo.ca/infosec/Policies/policy72.htm).

AccessAbility
AccessAbility Services (https://uwaterloo.ca/disability-services), located in Needles Hall—Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term.

Assignment submission
Please see your lab manual for detailed instructions on submission of lab assignments, and see above (p. 3) for deadlines for weekly lecture quizzes in LEARN.

Attendance and preparation
You are strongly encouraged to attend class meetings because they will be interactive in nature and develop the course material. Thus, please come to class prepared to discuss and engage, which will be reflected not least in your iClicker grade (see above). 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 (above) 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://www.adm.uwaterloo.ca/inforeg/exams/ExamRegs.pdf.

Definition of grades
Please see the following link for descriptions of the standards required for different grades: https://uwwaterloo.ca/environment/current-undergraduate-students/student-handbook#exams.

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 (e.g., Fried 2008; Taneja et al. 2015). Accordingly, please turn your cell phone off 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. Therefore, I request that those of you who must use a laptop sit in the back half of the class. If you have a special learning need that requires a laptop and sitting closer to the front of the room, please document it with AccessAbility Services and we will find an agreeable solution.
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
Except as below, plagiarism detection software (TurnItIn) will be used to screen assignments in this course. This is being done to verify that materials and sources in assignments are appropriately documented. For further information on UW’s TurnItIn guidelines, see https://uwaterloo.ca/academic-integrity/node/3/guidelines-instructors. TurnItIn submissions will be stored on a server in the United States, so if you choose not to use TurnItIn you must make an Alternate Declaration in an email to the administrative TA, Rachael Edwards (r7edwards@uwaterloo.ca), to be received by January 13, 2020, 11:59pm. Students not using TurnItIn must provide alternative documentation submitted to the admin TA with a paper copy of the lab report or project by the assignment due date and time. The alternative documentation to be submitted is (as applicable): 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. Additionally, an electronic copy of the final report is to be uploaded to UW-LEARN by the assignment due date and time.

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 Centre works across all faculties to help students clarify their ideas, develop their voices, and write in the style appropriate to their disciplines. Writing Centre staff offer one-on-one support in planning assignments and presentations, using and documenting research, organizing and structuring papers, and revising for clarity and coherence. You can make multiple appointments throughout the term, or drop in at the Library for quick questions or feedback. To book a 50-minute appointment and to see drop-in hours, visit www.uwaterloo.ca/writing-centre. Group appointments for team-based projects, presentations, and papers are also available.

Please note that writing specialists guide you to see your work as readers would. They can teach you revising skills and strategies, but will not proof-read or edit for you. Please bring hard copies of your assignment instructions and any notes or drafts to your appointment.

References