ERS275 FALL 2016

Natural Resources Ecology

I. Basic course information

Professor Dr. Andrew Trant (atrant@uwaterloo.ca; www.andrewtrant.com)

Office hours Friday 9:30 am-12:30 pm (or by appointment). Office: EV2-2036.

Class meetings Tuesday and Thursday 1:00-2:30 in RCH 106

Communication Please use email or LEARN Discussion Forums for course-related questions and communications. I *will aim to respond to forum posts and necessary emails within 24 hrs, except over weekends (we all need a break from technology, don't we?)*

UW-LEARN LEARN will be used for the following: course info, dropboxes for assignments, 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 Mary Power (m2power@uwaterloo.ca).

Required items There are no required items for this course. University is expensive enough without having to purchase textbooks. Instead, readings and course information will come in the form of articles, websites and handouts.

Follow me on twitter (@ajtrant) for course-related tweets (#ERS275)

II. Course overview and learning outcomes

This class explores the ecology and context of Canada's main natural resources including mining, forestry, energy and agriculture. This class will not be depressing but rather will present inspiring alternatives to status-quo approaches. This will include organic agriculture, sustainable forestry and a movement away from traditional energy. This course will be a combination of lecture, discussion and hands on exploration of topics.

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 as they related to natural resources;
ii. **demonstrate** how these principles and concepts apply to real-world situations (in context of both lectures and labs);
iii. **analyze** the elements of scientific inquiry as they apply to natural resource 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).

Learning outcome	Teaching and learning activities	Assessment methods
i. identify and explain, with examples, the main principles of ecology	readings, in-class activities, labs and office hours	exams, e-journal and labs
ii. demonstrate how these principles apply to real-world situations, including human interactions with the natural world	readings, in-class activities, labs, office hours,	exams, e-journal and lab assignments
iii. analyze the elements of scientific inquiry as they apply to natural resource ecology	readings, in-class activities, labs, office hours	lab assignments and exams
iv. evaluate ecological arguments presented in the media and elsewhere	In-class activities, e-journal, office hours, readings	e-journal and exams

5% **1-on-1 meetings**

I want to get to know you (helps me to personalize the course content) so during the second and third week of classes (see schedule), you will come by my office for a friendly 10 min (length may vary depending on number of students in the class). All you need to bring to the meeting is your e-journal (on your computer or email it to be prior to the meeting if you don't have a laptop on campus). These are REALLY easy marks for you – make sure you get them!

10% **Lab assignment 1: Documenting resource change through time**

Documenting change in the Canadian Mountain West using the Mountain Legacy Project. For this project, you will work in groups of 2 that will be assigned in class. This lab is due in class on Oct 27th.

20% **Lab assignment 2: Documenting resource change across space**

This lab has three parts: Methods and techniques, data collection and a guided data analysis. This lab will focus on a variety of ways in which we manage resources. This lab is due in class on Nov 17th.

20% **Midterm**

The midterm will focus on content from the lab and lectures. Evaluation will consist of short and long answer questions. The midterm takes place during normal class times on Oct 18th.

20% **E-journal**

You will hear way more about this in class but the idea here is to compile website/paper articles on natural resources ecology issues throughout the semester. For each article, include a short paragraph on what the natural resource being presented is, how it affects and what ecological principles are being discussed. To lighten your work load at the end of the semester, you will need to two articles a week for the entirety of the semester. Make sure cover a variety of resources – not just your favourite. This assignment is due in class on Nov 24th.

25% **Final exam**

The final exam for this course will focus on analyzing and evaluating course-content as it applies to the ecology of natural resources in Canada. An emphasis will be placed on applying knowledge gleaned in this course rather than regurgitating content. The final exam is scheduled by the registrar and will be announced by the University.

IV. Course schedule

NO CLASS: Sept 6, Oct 11 (University of Waterloo Study Day)

Week	Topic	Readings	Details	Deadlines
1				
Sept 8	Introduction & overview		Lecture, sign-up for meetings	**Sign-up for meetings**
2				
Sept 13	Primer on ecology principles	2	Lecture	
Sept 15	1-on-1 meetings with me		Meetings will be held during class times	
3				
Sept 20	1-on-1 meetings with me		Meetings will be held during class times	
Sept 22	Resource ecology through time	2	Lecture	
4				
Sept 27	Changing resources (Lab)		**Lab 1A:** *Documenting resource change I*	
Sept 29	Resource ecology across space	2	Lecture	
5				
Oct 4	Changing resources (Lab)		**Lab 1B:** *Documenting resource change II*	
Oct 6	Threats to resources: biotic	2	Lecture	
6				
Oct 13	Threats to resources: climatic + review	2	Reminder: No class on Oct 11	
7				
Oct 18	Midterm (20%)		Includes all lab and lecture info	
Oct 20	Managing resources	2	Lecture	
8				
Oct 25	Management resources (Lab)		**Lab 2A:** *Methods and techniques*	
Oct 27	Management resources (Lab)		**Lab 2B:** *Data collection*	**Lab 1 due (10%)**
9				
Nov 1	Management resources (Lab)		**Lab 2C:** *Data collection*	
Nov 3	Interpreting patterns and processes	2	Lecture	
10				
Nov 8	Management resources (Lab)		**Lab 2D:** *Data analysis*	
Nov 10	Indigenous perspectives	2	Lecture	
11				
Nov 15	Alternatives and new pathways	2	Lecture	
Nov 17	Resources through space		Student presentations	**Lab 2 due (20%)**
12				
Nov 22	Organic agriculture		**Guest lecture:** Tarrah Young @ Green Beings Farm	
Nov 24	Moving forward	2	Lecture and discussion	**E-Journal due (20%)**
13				
Nov 29	Synthesis		Lecture and discussion	
Dec 1	Exam review		Want ever you want – you guide this	

V. Readings/Listenings

I want to keep this super current when possible so every Friday, I will post (on LEARN) the readings for the next week. With this dynamic model, readings can better reflect our conservations and discoveries throughout the semester. For each reading, you should be able to summary the finds, the ecology of the particular nature resource and understand how they vary across space and through time (when relevant).

VI. Assignments

Lab assignment 1: Documenting resource change through time (10%)
Documenting change in the Canadian Mountain West using the Mountain Legacy Project. For this project, you will work in groups of 2 that will be assigned in class. This lab is due in class on Oct 27th. Details on this assignment will be discussed in class on Sept 13nd.

Lab assignment 2: Documenting resource change across space (20%)
This lab has three parts: Methods and techniques, data collection and a guided data analysis. This lab will focus on a variety of ways in which we understand how resources vary across space. This lab is due in class on Nov 17th. On this day, students will give a short presentation (5 min) on their findings. Overall mark for Lab 2 is: written (15%) and presentation (5%). Details on this assignment will be discussed in class on Sept 13nd.

E-journal (20%)
You will hear way more about this in class but the idea here is to compile website/paper articles on natural resources ecology issues throughout the semester. For each article, include a short paragraph on what the natural resource being presented is, how it affects and what ecological principles are being discussed. To lighten your work load at the end of the semester, you will need to two articles a week for the entirety of the semester. Make sure cover a variety of resources – not just your favourite. This assignment is due in class on Nov 24th.

VII. 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 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.

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.

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://uwaterloo.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, 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, Stephanie Barr (s2barr@uwaterloo.ca), to be received by January 10, 2016, 11:55pm. 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

Fried, C. B. (2008). In-class laptop use and its effects on student learning. *Computers & Education* 50: 906–914.

Taneja, A., Fiore, V. and Fischer B. (2015). Cyber-slacking in the classroom: Potential for digital distraction in the new age. *Computers & Education* 82: 141-151.