

School of Environment, Resources and Sustainability
Faculty of Environment
University of Waterloo

ERS 315 Environmental and Sustainability Assessment II

Wednesdays 2:30 – 4:20 pm (AL 208)

Instructor:

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Instructor Office Hours: Tuesdays 10:00 am- 12:00pm

TAs:

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Course Description:

This course builds on what was introduced in ERS 215 about the several categories of EAs used in Ontario and Canada, and the common elements of EAs used worldwide. ERS 315 will focus on the mechanisms by which information is collected, analyzed and presented to predict the future state of environmental parameters and the significance of their impacts. Tutorial work will be semi-directed and self-guided. The assumption in ERS 315 is that students are already familiar with the principles and basic design requirements of impact assessment and that they have some understanding of the role of impact assessment in planning, management, and regulation particularly for Ontario or areas under the jurisdiction of the federal government. The concepts introduced to you in ERS 215 and 315 are applied to a broader range of pursuits in the next course in the assessment series, ERS 415. ERS 215, ERS 315 and ERS 415 are all required courses for the Environmental Assessment Diploma.

Intended Learning Outcomes:

The learning outcomes of this course are intended to equip students with the skills to understand the “how” of the EA process. By the end of the course students will be familiar with various impact prediction methods (both biophysical and social) and how to determine the significance of these environmental effects.

By the end of the course students will:

1. Gain a broad understanding of the types of tools and methods for impact prediction in Canada through focusing on the “how” of EAs.

¹ When communicating via email, please identify the course (e.g. “ERS 315”) in the subject line. Make sure to use your UW account.

2. Develop critical thinking skills by analyzing various case studies examples to understand methods used to predict both biophysical and social impacts and how to evaluate the significance of these impacts.
3. Develop presentation skills through group tutorial presentations on various impact prediction methods.

Approach:

Lectures will be used to provide an overview of key topics and also to highlight important themes. Key topics and themes will be elaborated on through in-class discussions and by regular attention to case studies. Assigned readings throughout the semester are critical for providing additional depth and breadth. The final exam and assignments provide an opportunity for integrating key topics and themes, as well as for linking them with the broader scholarly literature on the methods of impact prediction and the evaluation of impact significance in the development of an environmental impact assessment.

Office Hours: Tuesdays 10:00 am – 12:00 (noon) - EV2 2028

Please limit your use of email to ask questions – most questions for this type of course are most efficiently and effectively dealt with in person during office hours, lectures and tutorials. Office hours and tutorials are there for you to ask questions or discuss issues with the instructor that you are experiencing in the course. So do come see me, and your TAs, if you require assistance or clarification. We are here to help.

Website: <http://learn.uwaterloo.ca> (LEARN, ERS 315)

You will need to access the course website frequently, as some of the course material will be made available and managed through LEARN (Desire2Learn).

Required Readings:

Weekly reading will be posted on LEARN. It is your responsibility to check LEARN regularly for these readings. The required text for ERS 215 provides many relevant materials and concepts that are built upon in ERS 315. Please refer to it as needed: Noble, B. (2015). Introduction to Environmental Impact Assessment: A Guide to Principles and Practice, 3rd Edition. Don Mills, ON: Oxford University Press.

*Additional material will be presented in class and/or made available through the LEARN website.

COMMUNICATION

Students' UW email accounts will be used for communication outside of lectures. Students are responsible to check their UW email and 'Learn' accounts regularly. All course announcements will be posted to LEARN. An effort will be made to deal with email requests within two business days of receipt. The instructor does not respond to email outside of regular working hours (M-F ~8AM-6PM). Questions regarding the course material are usually most efficiently and effectively dealt with in person rather than using email.

Course and University Policies

Attendance:

Attendance in class is HIGHLY RECOMMENDED, but it is at your discretion. There is often extra content in the notes displayed in class vs. the notes posted on the course webpage (e.g., discussion points or questions asked of the class, graphics-heavy images such as maps or diagrams), and all in-class discussions are valid “testable” material. In addition, all A/V materials (e.g., DVDs screened in class) are valid, “testable” materials, so complete notes should be taken for each lecture and each video screened.

Missed Examinations:

All exams are mandatory, and thus, students are expected to be present at the time of each exam. If you miss an exam you must provide reasonable documentation explaining the reason for your absence, degree of incapacitation, dates covered by the note to be considered for an alternative arrangement. Please make a copy of this note and give the copy to your instructor by hand or scanned and sent by email (email to cbarbeau@uwaterloo.ca)

Requests for Extensions for Assignments: Regular Deadline and Extended Deadline

There is an extended deadline available to you for your final assignment. You have **7 calendar days** past the assignment due date to submit your assignment with a **10% late penalty (off the final mark of your assignment)**. This extended deadline is available to everyone and therefore you do not need to ask me for an extension. However, after the 7 day extended deadline assignments will no longer be accepted and No further extensions will be granted.

Note for Students with Disabilities:

The Office for Persons with Disabilities (OPD), 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 the OPD at the beginning of each academic term.

Religious Observances:

Student needs to inform the instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and assignments.

Academic Integrity:

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. See (www.uwaterloo.ca/academicintegrity).

Students who are unsure what constitutes an academic offence are requested to visit the on-line tutorial at: <http://www.lib.uwaterloo.ca/ait/>.

Discipline:

A student is expected to know what constitutes academic integrity, to avoid committing academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71 - Student Discipline, <http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm>. For typical penalties,

check Guidelines for Assessment of Penalties,
<http://www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm>

Grievance:

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

Appeals:

A decision made under Policy 70 - Student Petitions and Grievances (other than regarding a petition) or Policy 71 – (Student Discipline) may be appealed, A student who believes he/she has a ground for an appeal should defer to Policy 72 (Student Appeals) <http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm>

Consequences of Academic Offences:

Students are strongly encouraged to review the material provided by the university's Academic Integrity office. See (<http://www.adm.uwaterloo.ca/infoacad/Students/index.html>) .

University Policies: Plagiarism

Please familiarize yourself with the University of Waterloo's policy dealing with plagiarism. Be especially careful when using materials from the internet, and be aware that software available to instructors can be used to check student submissions for plagiarism (e.g. www.Turnitin.com). Plagiarism offences are normally treated quite seriously by the University and can result in significant penalties being assessed (e.g. failing grade on an assignment, repeating a course, suspension or expulsion).

Definition of Plagiarism: *"The act of presenting the ideas, words or other intellectual property of another as one's own."* - Source: University of Waterloo, Policy 71.

To Avoid Plagiarism

The use of other people's work *must* be properly acknowledged and referenced in all written material such as take-home examinations, essays, research papers, laboratory reports, work-term reports, design projects, statistical data, computer programs and research results. The properly acknowledged use of sources is an accepted and important part of scholarship. Use of such material without complete and unambiguous acknowledgement, however, is an offence under Policy 71.

Quoting, paraphrasing, and summarizing (source: <http://owl.english.purdue.edu/owl/resource/563/1/>)

These three ways of incorporating other writers' work into your own writing differ according to the closeness of your writing to the source writing.

- **Quotations** must be identical to the original, using a narrow segment of the source. They must match the source document word for word and must be attributed to the original author with page number.
- **Paraphrasing** involves putting a passage from source material into your own words. A paraphrase must also be attributed to the original source. Paraphrased material is usually shorter than the original passage, taking a somewhat broader segment of the source and condensing it slightly.
- **Summarizing** involves putting the main idea(s) into your own words, including only the main point(s). Once again, it is necessary to attribute summarized ideas to the original source. Summaries are significantly shorter than the original and take a broad overview of the source material.

Turnitin:

Plagiarism detection software (Turnitin) will be used to screen assignments in this course. Turnitin is primarily a plagiarism detection tool, but can also be used to help students understand academic integrity in written assignments. Turnitin generates ‘originality reports’ on student submissions, which can provide instructors with information about plagiarized sources, but the reports can also be used to help students understand the proper use of quotation marks, how to cite sources properly, and how to paraphrase.

Students will be given an option if they do not want to have their assignment screened by Turnitin. In the first week of the term, details will be provided about arrangements and alternatives for the use of Turnitin in this course. NOTE: any student not wishing to submit materials for Turnitin detection must contact the instructor by **September 20th**, to arrange for an alternative assignment.

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](#).

EVALUATION:

Your final grade will be based on two in-class tests, your group presentation in your tutorial section, tutorial attendance and participation and a final individual assignment. The professor determines the content and establishes the grading rules for all assignments, course components and the exam. The teaching assistants will assist the instructor with grading course work. The tests will be based on material covered in lectures, including guest lectures and readings. When determining a student's final grade in the course, the instructor will examine the record of each individual student's achievement; the final grade may be adjusted to take into account extenuating and compassionate circumstances and the student's general pattern of achievement in the course.

Course Component and Due Dates	Percentage
Midterm Test (October 17th)	25%
Group Tutorial Methods Presentation (Presented in the Weeks of October 22nd and October 29th Tutorials)	15%
Final Assignment (<i>Individual Assignment</i>) (November 14th)	25%
Final Test (November 28th)	25%
Tutorial Attendance and Participation	10%

Numeric grades on a scale from 0-100 are used in grading all assignments at the University of Waterloo. The following list will give you an idea of the basis upon which numeric grades are assigned:

- >90%** Work that shows a high level of initiative and is clearly above and beyond what is expected. Referencing, style, grammar/spelling, content and the development of ideas are all superior. (similar to A and A+ in the previous system)
- 80-89%** Work that shows good initiative and is above what is expected. Referencing, style, grammar/spelling, content and the development of ideas are all good. (Similar to B+ and A- in the previous system)
- 70-79%** Work that shows initiative and is about what is expected, but one or more problems are evident in referencing, style, grammar/spelling, content and/or the development of ideas. (Similar to B- and B in the previous system)

- 60-69%** Work that does not demonstrate initiative, has a series of problems in referencing, style, grammar/spelling, content and/or the ideas, and overall, does not fully convince the reader that the topic has been well considered (Similar to C-, C and C+ in the previous system)
- 50-59%** Work that is substandard/sloppy in places, has many problems in referencing, style, grammar/spelling, content and/or the development of ideas, and overall, raises more questions in a reader's mind than the work answers. (Similar to D-, D and D+ in the previous system)
- 40-49%** Work that is of consistently poor quality, demonstrates gaps in comprehension of the assigned material, and/or indicates that not enough time was taken to properly address the assignment. (Similar to F and F+ in the previous system)
- <40** Work that is clearly of poor quality, demonstrates a lack of comprehension of the assigned material, shows little attempts at a personal development of ideas or efforts to back up arguments with suitable evidence, and/or indicates that the work was completed 'at the last minute'

Requirements, Late assignments, Grade Penalties and Special Considerations:

Readability and Clarity:

Students are expected to present well organized, and properly written work. Penalties of up to **25%** may be applied in cases where readability and/or clarity are inadequate.

Lateness penalty:

All assignments are due on the date set by the professor. There is an extended deadline available to you for each assignment. You have 7 calendar days past the assignment due date to submit your assignment with a 10% late penalty (off the final assignment mark). This extended deadline is available to everyone and therefore you do not need to ask me for an extension. **However, after the 7 day extended deadline assignments will no longer be accepted.** *No further extensions will be granted.*

Please ensure that you are diligent in ***backing up computer files*** and making ***draft copies*** of all assignments, as computer/disk failures, printer problems, etc, will **not normally be considered a valid reason to waive the late assignment deadline.** NOTE: Perhaps the easiest way to prevent computer file loss is to send to yourself an email attachment of your assignment after each significant work session.

Course Notes: Information for Students Using LEARN

LEARN is a web-based course management system that enables instructors to manage course materials (posting of lecture notes, etc.), interact with their students (drop boxes for student submissions, on-line quizzes, discussion boards, course e-mail etc.), and provide feedback (grades, assignment comments etc.). The degree to which LEARN is utilized in a particular course is left to the discretion of the instructor and therefore, you may find a large variance in how LEARN is being used from one course to another.

Logging Into LEARN

Since LEARN is a web-based system, you will need a browser. Minimum requirements include:

PCs running Windows:

- Internet Explorer 7 or 8 ([Download Version 8](#))
- Firefox 2 or 3 ([Download Firefox](#))

MACs running OS X:

- Firefox 2 or 3 ([Download Firefox](#))

Once you have started up your browser, type in the following URL: <http://learn.uwaterloo.ca>. Provide your Quest/UWdir userid and password (case sensitive). Once you have logged in, you should see a list of your LEARN courses under the Courses header bar. Clicking on the course name will take you to that course.

Downloading Notes

About 70% of the content of any given day’s lecture is posted on LEARN in PowerPoint format (in the “Content” section of the webpage), normally by 9:00 am on the day of lecture. It is recommended that you print off these notes ahead of each class, and bring these to class regularly so you can add the remaining 30% of content (guest lectures, discussion notes, additional points, off-the-cuff examples given in class, etc).

Multimedia Notes (DVDs, Videos, in-class internet-based videos, etc).

Approximately 15% of course content is delivered through multi-media materials (DVDs, online audio or video clips), and ALL of this material is valid testing/quiz material. Therefore, each student should attend regularly and take comprehensive notes. If you miss a day when this material is shown, please arrange to obtain the notes from a classmate, and if possible, discuss these notes briefly with the note-taker. Most materials shown are the personal property of the instructor and some are available on the internet.

PowerPoint Viewer

The web addresses for Microsoft PowerPoint viewers (for those who do not have PowerPoint on their computers) is: <http://www.microsoft.com/download/en/details.aspx?id=13>

Course Schedule (Note: topics might span more than one class and are subject to change):

**** There will be additional required readings uploaded onto LEARN you are responsible for this material also****

Each lecture will address a key method of impact prediction and a discussion on the evaluation of impact significance. Interactive exercises, case studies and guest lectures will be utilized throughout the term.

Date	Topic	Required Readings	Tutorials (Fridays)
Week 2 September 12th	Course Outline and Expectations Review of Key Concepts from ERS 215.	1. Read the Course Syllabus Posted to LEARN	First Week of Tutorials Determine groups for your methods presentation
Week 3 September 19th	*Overview of Assessment Tools Methods for monitoring and predicting biophysical impacts: <i>Water, Air, Vegetation and Soil</i>		
Week 4 September 26th	Methods for monitoring and predicting biophysical impacts: <i>Birds, Fish and Mammals</i>		
Week 5 October 3	Methods for monitoring and predicting biophysical impacts: <i>Amphibians, Reptiles and Invertebrates</i>		

Week 6	October 10th <i>*No Class: Study Day for Midterm Test</i>	No Class – Study Day		**No Tutorials**
Week 7	October 17 th	In-class Midterm Test		
Week 8	October 24 th	Methods for monitoring and predicting social impacts: <i>Indigenous Impacts</i>		
Week 9	October 31 st	Methods for monitoring and predicting social impacts: <i>Sustainability Impacts</i>		Group Methods Presentation
Week 10	November 7 th	Methods for monitoring and predicting social impacts: <i>Economic Impacts</i>		Group Methods Presentation
Week 11	November 14 th	The Future of Impact Prediction and Monitoring	*Final Assignment Due	
Week 12	November 21 st	Review Class		
Week 13	November 28 th	In-Class Final Test		No Tutorials

****Please check LEARN for marking criteria for all your assignments as well as additional resources ****

METHODS GROUP PRESENTATION (15% OF FINAL GRADE)

Presented the Weeks of October 31st and Nov. 14th in your tutorial sections.

You will pick your groups and sign up for your presentation week in the first week of tutorials.

This will be a **group presentation**, you will work in **groups of 3** and give an approximately 10 minute presentation in your tutorials. For your presentation, you will select a case study based on a completed environmental assessment and present two impact prediction methods that were used in the EA **one method that was used to measure a social impact** and **one method that was used to measure a biophysical impact**. You will then present these two methods to your tutorial section. Each group member must speak during your presentation. There will be time given in your tutorials to work on your presentation further.

FINAL ASSIGNMENT (25% OF FINAL GRADE)

Due November 14th on LEARN by 11:59 PM

Your final assignment is worth 25% of your final grade. For your final assignment, you will explore a controversial case study in Ontario. The Ontario Ministry of Transportation (MTO) has recently initiated an environmental assessment under the Ontario Environmental Assessment Act for a high-speed rail project aimed at connecting the city of London, Ontario to the Kitchener/Waterloo region eventually reaching Toronto. You will have the opportunity in your tutorials to explore this controversial project further. For your final assignment, you are to complete the following:

1. *Select five valued ecosystem components (VECs)* that are likely to be selected based on this proposed project. Use the literature and news articles to help you select what you feel will likely be chosen as VECs by the stakeholders of this project. Make sure to reference and justify these selections. You must include at least one social and one biophysical VEC in your selection since you will need one of each for Part #3 below.
2. *Complete a simple interaction matrix* for the high-speed rail project (assuming the project will run from Toronto to London) using the five VECs selected above. Make sure you use the literature and news articles to help you determine and justify the likely potential for impact. Examples of interaction matrices will be discussed in tutorials and posted to LEARN.
3. *Select one social and biophysical impact and discuss a method for each* that you would use to determine the magnitude of the impact. Again, your discussion of these methods must be supported by the literature.
4. Using the magnitude of these two impacts (social and biophysical) that you discussed in Part #3 *determine the importance (value) placed on the two VECs and then discuss the significance* of the likely impacts.

See LEARN for Assignment Resources.

- **IMPORTANT:** You should present your paper in an academic research paper format, based on adequate and appropriate reading and reflection, and it must acknowledge intellectual indebtedness through proper citations. Use the "Writing Effective Essays and Reports" booklet by Rob de Loë as guidance: http://www.environment.uwaterloo.ca/u/rdeloe/writing_booklet/twopage_format.pdf (also posted on LEARN)

Required format for your final assignment:

- Submit in **.pdf** format
- **Length:** maximum page length is 6 pages double spaced (excluding title page, reference list page and impact matrix).
- Your assignment must have a plain title page with the title of your assignment, your name (or name of all group members), course number (ERS 315), the date, your student number (or student numbers for all group members), the term, your TA's name and the instructor's name.
- Include your name & student ID number on each page (inserting this into a 'header' is the easiest way to go!).
- Please number all pages
- Typed/word-processed, with 1" margins.
- For this assignment you will need to draw heavily on literature and news articles. There is no set minimum for references. This is a third-year class and you should not be concerned with the number of references, however know that you will need to support all the information you gather. Therefore, you will have an extensive reference list. The **APA reference** format should be used for all references, including websites (for info on using the APA style, see [http://www.okanagan.bc.ca/Assets/Departments+\(Administration\)/Library/PDFs/apa.pdf](http://www.okanagan.bc.ca/Assets/Departments+(Administration)/Library/PDFs/apa.pdf))
- Failure to follow these requirements can result in up to a 5% overall mark reduction per assignment

Signed Assignment Checklist

Make sure you read and sign the assignment checklist form (at the end of this document) and include it with your assignment.

Grading for your Final Assignment

- Evaluation of assignments takes into account organization, structure, style and presentation, research and quality of analysis/critique, as well as proper referencing style and in-text citation. Writing quality and content are both considered in grading.
- Students are expected to present well organized and properly written work. Penalties of up to **20%** may be applied in cases where writing quality, readability and/or clarity are considered inadequate.
- Any questions regarding your mark or any feedback on your assignment are to be directed towards your TA. Any concerns after talking with your TA can then be sent to the instructor.
- **Any requests for remarking of an exam question and/or an assignment must be submitted in writing to the instructor within *two weeks* of the release of the mark for the exam/and or assignment in question**
- **Your request for a remark must be specific and you must be able to clearly state what questions or component you feel were mis-marked and why.**

Handing in your Assignments:

- You are responsible for making sure that your professor receives your work. Both assignments are to be submitted via LEARN dropbox using the course website.
- ***Lost or misplaced assignments:*** It is your responsibility to make more than one electronic copy of your work. Excuses are not accepted in the case of crashed computer and lost or misplaced work.

Tips/Hints:

- Seek out help from your TAs – they are there to help you
- Begin well in advance of the deadline – last minute work is usually obvious to markers.
- As you write, use the concepts, language and ideas presented in lecture materials as a source of inspiration/discussion in your assignment.
- Create sub-headings for each of the main sub-sections (you can remove these or keep these later...they are intended as a guide to writing to ensure you address each sub-section!).
- Cite all materials/information you obtain from sources other than your own personal knowledge. The ***APA reference*** format should be used for all references, including electronic sources.
- Don't forget to include personal knowledge and 'brainstorming' in your analysis – it's a very powerful way to personalize your writing.
- Proofread and spell-check your work before submission, please.

Unclaimed Work

- 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.

TUTORIAL ATTENDANCE AND PARTICIPATION (10% OF FINAL MARK)

Meaningful participation is not just about showing up, although attending class and tutorials is a pre-requisite. For that matter, showing up and having many opinions does not necessarily constitute meaningful participation either. Quality is more important than quantity. In the context of this course, meaningful participation enriches the immediate environment—makes it more interesting and thought-provoking. It is based on a collaborative learning approach where no one person has a monopoly on the answers or available discussion time. Participants are informed through reading, observing, listening, 'ground-truthing' and thinking. Those engaged in meaningful participation recognize the power dynamics in the room; respect the opinions and world views of others by listening carefully with an open-mind and by acknowledging those views.

Tutorial participation: any missed tutorials will receive a .5% reduction for each class missed unless you have a documented exception or a permissible conflict (discuss this with your TA ***prior*** to any tutorial you might miss) Always check ahead with your TA. If you are present and contributing as stated above you will receive a mark of .5% per tutorial. If you are present but not contributing then your mark for the tutorial will be .25% of your final mark (there are 9 tutorials). You will be given one free pass on missing one tutorial.

The following student signed Checklist was developed by the University of Waterloo Secretariat as a means of emphasizing the importance of attribution of referenced work and reducing plagiarism.

Please read, sign, and hand in your tutorial prior to your presentation.

Group Work

Please read the disclosure below following the completion of your group presentation. Once you have verified these points, hand in this signed disclosure with your group assignment.

- 1. All team members have referenced and footnoted all ideas, words or other intellectual property from other sources used in the completion of this presentation.
- 2. A proper bibliography has been included, which includes acknowledgement of all sources.
- 3. Each student has identified his or her individual contribution to the work submitted such that if violations of academic integrity are suspected, then the student primarily responsible for the violations may be identified. Note that in this case the remainder of the team may also be subject to disciplinary action.

Date: _____

Name (print)	Signature	Contribution