

Environmental Impact Assessment

ENST/GEOG 4004

Fall Term 2023

Course Information

Class Schedule:

Wednesday 14:30-17:30

Professor: Andrew Heffernan

Email: Andrew.Heffernan@UOTTAWA.CA

Office Hours: Following class (or by appointment as needed)

Before emailing a question, please *fully* read this syllabus and explore the associated resources. The answers to many questions can be found in this document and students may be referred back to the syllabus if the answer is already available. Please allow at least **two (2) business days** for responses to inquiries before pursuing another route of communication.

Course Description: Principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view; range of environmental issues, with emphasis on Canadian case studies. The EIA process is at once scientific, legal and political, so we will explore the process from all of these different perspectives. Each week readings and in-class activities will provide an opportunity to develop an integrated understanding of the different steps in impact assessment.

The course is also organized as a seminar with the expectation that most learning will happen in class through discussion between students, discussion between the instructor and students, and through in-class activities.

Prerequisite(s): GEOG 3022 or ENST 3022. Fourth-year Honours standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.

Learning Objectives: Participation in this course provides students an opportunity to:

*Understand the process of EIA in theory and practice;

*Gain familiarity with the history and multi-legal frameworks of EIA

Indigenous Affirmation

ANISHINÀBE

*Ni manàdjiyànàniḡ Màmìwininì Anishinàbeg, ogog kà nàgadawàbandadjig iyo akì eko weshkad.
Ako nongom ega wikàd kì mìgiwewàdj.*

Ni manàdjiyànànig kakina Anishinàbeg ondaje kaye ogor kakina eniyagizidjig enigokamigàg Kanadàng eji ondàpinangig endàwàdjìn Odàwàng.

Ninisidawinawànànig kenawendamòdjig kije kikenindamàwin; weshkinìgidjig kaye kejeyàdizidjig.

Nigijeweninmànànig ogor kà nìgàni sòngideyedjig; weshkad, nongom; kaye àyànikàdj.

[Listen to the audio file](#)

ENGLISH

We pay respect to the Algonquin people, who are the traditional guardians of this land. We acknowledge their longstanding relationship with this territory, which remains unceded.

We pay respect to all Indigenous people in this region, from all nations across Canada, who call Ottawa home.

We acknowledge the traditional knowledge keepers, both young and old.

And we honour their courageous leaders: past, present, and future.

Textbook

There is no textbook for this course. Required readings are available through the library website or online.

Assignment Submission Guidelines

This is a paperless course – all assignments will be submitted, graded, and returned electronically through Brightspace. All assignments must be submitted as a **Word Document**, no other format will be graded.

Assessment Policies and Expectations

Critical analyses [Worth 20% of your mark (10% each)]

Throughout the semester students will have the option to submit up to 3 critical analyses of a specific class's readings. Only 2 will count toward your final grade but you have the option to submit up to 3 and have only your best 2 count. These must be submitted through Brightspace at least one-hour prior to the beginning of whichever class's readings you decide to write on.

During each course we will discuss these readings so once the class has started if you have not submitted it, it will not be graded, and you will have to write on a subsequent class's readings.

These critical analyses will be 1 page single-spaced and will provide an analytical argument about a specific theme that comes from all of that class's readings meaning each should be cited within the paper. This will not be a summary of what was read but you will instead tell me something interesting about what you think about one of the topics and develop and forward a clear argument about the relative importance of that week's component of an EIA. While these are short analytical papers, approach them as a mini formal essay, with an introduction and

argument, proper citations, page numbers, and a bibliography as well as formal essay language. This will be discussed further in class.

Class Participation (10%)

You are expected to attend class having read the assigned texts with sufficient attention to engage in consistent, robust, and thoughtful participation. This grade will reflect your global level of participation, and passive attendance will not suffice to succeed on this grading component.

- 0 – absent without leave
- 4 – present in the discussion
- 7 – limited participation, or limited interaction with fellow students’ comments
- 9/10 – high participation, interacting with fellow students’ comments, with quality interventions supported by course materials.

Asynchronous Participation (15%)

There will be weekly discussion questions posted on Brightspace ahead of class, which you should consider while you do the readings. Students will be expected to come to class prepared to discuss the questions synchronously, and then following class you will also be asked to write a short, informal reflection expanding on what we discussed and adding points you may not have had the opportunity to share in class. Reflections should be roughly 200-300 words and are due for each weeks’ readings and must be submitted prior to the next class (i.e. responses to the reading for September 13 will be due prior to the September 20th class, and September 20 class prior to September 27 class and so on.). These will be posted as a reply to the questions on Brightspace, not submitted as an assignment. As you have all week to complete these, no late submissions will be accepted, so be sure to plan accordingly and set reminders if needed.

- 0 – Incomplete
- 3 – Minimal completion, very short, unrelated to course material
- 7 – Complete, somewhat related to/grounded in course materials and discussions
- 9/10 – Well thought out intervention that builds on course discussions and material, demonstrating analytical thought and supported by evidence.

Reading Introduction (10%)

Students must sign up for a week to introduce the readings throughout the term (link to be provided). Students will need to add their names to a class date, failure to do so will result in a grade of zero for this assignment. This is on a first come first served basis. If you do not plan on taking this course or if you decide to drop it at any time, PLEASE remove your name from this google doc and let your group mates know so they can plan accordingly and no one is penalized as a result.

Presentations should be approximately 10 minutes per student. They should include a brief overview of the readings, including situating them in the broader course themes, and discussing the authors and their positionality. Beyond this, however, and more importantly, the presentations

should focus on analysis of the readings, and linking them to recent news stories or major issues relating to environmental impact assessment here in Canada or elsewhere in the world. Tell us why we read this and how it relates to what we are studying, what it can tell us about the world, how it applies to your news story/case etc.

Final Project - EIA (45%)

For the final project students will be expected to choose a project and conduct a thorough EIA based on the learnings from the semester. A list of projects on which to conduct an assessment will be provided, though should students wish to choose a project not on the list this may be possible with prior permission from the professor. Final projects will be 2500-3000 words per student + graphs, tables, figures, references, etc. Projects can be done in groups of 1, 2, or 3 students. Further instructions will be provided during the first class meeting. The final project will be due December 15 by 23:59.

Components of Final Mark

Evaluation format	Weight	Date
Synchronous participation	15%	All semester
Asynchronous participation	10%	All semester
Critical analyses (must submit 2, can submit 3 and drop lowest grade)	20%	At least 1 by reading week November 22 last chance
Reading introduction	10%	Once throughout semester
Final EIA	45%	December 15 (1% bonus per day handed in early up to 5% max)

Attendance

Class attendance is necessary to successfully complete this course.

COVID 19:

We continue to live in challenging and changing times. If you are sick, have been in close contact with someone who is sick or has tested positive, or think you might be positive or sick with anything, please do not come to class. Let me know by email and we will work with the situation presented to us.

Grading Assessment Inquiries

Students who think there is an error in the correction of an assessment in one of the course graded items may request a re-correction. Those requests must be submitted to the professor by email (and not during office hours directly) no earlier than 24 hours after the publication of the grade on Brightspace (as students need time to review and digest the grades they receive) and no

later than 7 days from the first day the graded item is available for review. Submissions before the first 24h and after 7 days will not be considered. Also, to request a re-correction, students must have a **valid reason** and expose it in the email sent to the professor. Without a valid reason, the item will not be considered for re-correction. Please include in the email the question number(s)/aspect(s) that you think was (were) not assessed properly. However, students should be advised that the whole graded item will be put up for revision and that the new score could be lower, the same, or higher than the original score. Once an item has been regraded, the decision is final. Assignments or tests that have been altered in any way will be forwarded to the academic fraud committee.

Time Commitment

In order to succeed in a 3-credit course, alongside the standard 3 hours of in-class instruction, students should expect to spend a minimum of 6 hours per week outside of the classroom engaged in activities related to the course, e.g. homework, reading, studying, etc., and should expect a minimum time commitment of 9 hours per week per course (on average).

Language Expectations

This course is delivered in English, and in class interactions, including the online discussion boards, and feedback will also be managed in English. As part of your evaluation will be on your writing abilities, it is recommended to take the appropriate measures to avoid mistakes such as spelling, syntax, punctuation, inappropriate use of terms, etc. You may be penalized up to 15% for poorly written materials, to the professor's discretion.

Food in class

We all have busy schedules but please try to eat prior to or following class as needed so as to avoid disrupting students around you.

Mobile Devices

Unless explicitly requested, please refrain from using mobile devices during class. As in class time is quite limited, I would ask that you prioritize using this time to engage with class discussions and other content-related activities. Active participation and engagement with the content and your peers helps ensure full participation marks for your contributions this semester.

Professional conduct:

Students are expected to engage with their colleagues and with the instructor in a professional and respectful manner. The course will be a safe and enjoyable online space to share thoughts and ideas. There will be zero tolerance for cases of harassment, belittling, or discourtesy.

Inability to fulfill assessment requirements:

Students who know they will be unable to complete either of the assignments due to religious observances, pre-scheduled hospitalizations or similarly compelling reasons must notify the instructor via e-mail (or in writing) immediately so that alternative arrangements may be made. Students who miss assignment deadlines due to serious illness must provide appropriate documentation from university medical services. Other cases will be dealt with on a case-by-case basis and in accordance with university policy.

Course Schedule

September 6 - Introduction

September 13 - EA aims & objectives

[Impact assessment for the 21st century—what future?](#)

[S Bice, TB Fischer](#) - Impact assessment and project appraisal, 2020 - Taylor & Francis

[The role of science in environmental impact assessment: process and procedure versus purpose in the development of theory](#)

[M Cashmore](#) - Environmental Impact Assessment Review, 2004 - Elsevier

September 20 - Overview of Canadian EA systems

[Using a Delphi study to identify effectiveness criteria for environmental assessment](#)

[K Hanna, BF Noble](#) - Impact Assessment and Project Appraisal, 2015 - Taylor & Francis

[Reconsidering the Canadian Environmental Impact Assessment Act: A place for traditional environmental knowledge](#)

C Paci, A Tobin, P Robb - **Environmental Impact Assessment Review**, 2002 - Elsevier

September 27 - Pre-project planning

[Leveraging impact assessment for satisfactory project outcomes: benefits of early planning and participatory decision-making](#)

[M Mayhew, J Perritt](#) - Impact Assessment and Project Appraisal, 2021 - Taylor & Francis

[LEED–PDRI Framework for pre-project planning of sustainable building projects](#)

[G Weerasinghe, K Soundararajan...](#) - Journal of Green ..., 2007 - meridian.allenpress.com

October 4 – Screening determinations

[Risk management: Rethinking fashion supply chain management for multinational corporations in light of the COVID-19 outbreak](#)

[M McMaster, C Nettleton, C Tom, B Xu, C Cao...](#) - Journal of Risk and ..., 2020 - mdpi.com

[Impact significance determination—pushing the boundaries](#)

DP Lawrence - **Environmental Impact Assessment Review**, 2007 - Elsevier

October 11 - Scoping & baseline studies

Pitfalls of environmental baseline and process studies

R Hilborn, CJ Walters - Environmental Impact Assessment Review, **1981** - Elsevier

Environmental Impact Assessments for deep-sea mining: Can we improve their future effectiveness?

MR Clark, JM Durden, S Christiansen - Marine Policy, 2020 - Elsevier

October 18 – Impact prediction & characterization

Adaptation, flexibility and project decision-making with climate change uncertainties

AF Colombo, PH Byer - Impact Assessment and Project Appraisal, **2012** - Taylor & Francis

Prediction and analysis of net ecosystem carbon exchange based on gradient boosting regression and random forest

J Cai, K Xu, Y Zhu, F Hu, L Li - Applied energy, 2020 - Elsevier

October 25: READING WEEK NO CLASS

November 1 – Significance determinations

Exploring carbon emissions and international inequality in a globalized world: A multiregional-multisectoral perspective

L Bolea, R Duarte, J Sanchez-Choliz - Resources, Conservation and ..., **2020** - Elsevier

Including indigenous knowledge systems in environmental assessments: restructuring the process

R Arsenault, C Bourassa, S Diver... - Global **Environmental** ..., 2019 - direct.mit.edu

November 8 - Follow-up & monitoring

Integrating environmental monitoring with cumulative effects management and decision making

JG Cronmiller, BF Noble - ... environmental assessment and ..., **2018** - Wiley Online Library

Distilling and applying criteria for best practice EIA follow-up

E Pinto, A Morrison-Saunders, A Bond... - ... of **environmental** ..., 2019 - World Scientific

November 15 – Indigenous engagement

Indigenous-led Assessment Processes as a Way Forward

PUBLISHED: JULY 4, 2019AUTHOR: **SARAH MORALES**

Health risks associated with oil pollution in the Niger Delta, Nigeria

J Nriagu, EA Udofia, I Ekong, G Ebuk - International journal of ..., **2016** - mdpi.com

November 22: Assessing cumulative effects

[Alchemy to reason: effective use of cumulative effects assessment in resource management](#)

G Hegmann, GAT Yarranton - Environmental impact assessment review, 2011 - Elsevier

[Critical gaps in seagrass protection reveal the need to address multiple pressures and cumulative impacts](#)

LL Griffiths, RM Connolly, CJ Brown - Ocean & Coastal Management, 2020 - Elsevier

November 29 - Ethics & practice (No class)

[Environmental impact assessment follow-up: good practice and future directions—findings from a workshop at the IAIA 2000 conference](#)

..., P Caldwell, A Morrison-Saunders - Impact assessment and ..., 2001 - Taylor & Francis

December 6 – Flex day

University Policies

“Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean.”

Grades

In accordance with the Carleton University Calendar, the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	A = 85-89	A - = 80-84
B+ = 77-79	B = 73-76	B - = 70-72
C+ = 67-69	C = 63-66	C - = 60-62
D+ = 56-59	D = 53-56	D - = 50-52
F = Below 50	WDN = Withdrawn	ABS = Student absent from final exam

DEF = Deferred (See above)

FND (Failed, no Deferral) = Student could not pass the course even with 100% on final exam.

Final grades are subject to the Dean's approval.

Deferred Assignments/Grades

Only official deferrals petitioned through the Office of the Registrar will be honoured. Students who are unable to complete a final paper or write a final examination because of illness or other circumstances beyond their control or whose performance on an examination has been impaired by such circumstances may apply within five working days to the Registrarial Services Office for permission to extend a term paper deadline or to write a deferred examination. Permission can be

granted only if the request is fully and specifically supported by a medical certificate or other relevant documents.

Written Assignments

If you feel you need assistance in improving your writing skills, you are encouraged to get in touch early in the term with the Writing Tutorial Service (Room 229, Patterson Hall, <http://www.carleton.ca/wts/>).

Retain Copies of Work Submitted

Students are strongly advised to retain a hard copy (and electronic backup) of all assignments and term papers in the event of loss for whatever reason.

Special Information for Pandemic Measures

All members of the Carleton community are required to follow COVID-19 prevention measures and all mandatory public health requirements (e.g., wearing a mask, physical distancing, hand hygiene, respiratory and cough etiquette) and mandatory self-screening prior to coming to campus daily.

If you feel ill or exhibit COVID-19 symptoms while on campus or in class, please leave campus immediately, self-isolate, and complete the mandatory symptom reporting tool. For purposes of contact tracing, attendance will be taken in all classes and labs. Participants can check in using posted QR codes through the cuScreen platform where provided. Students who do not have a smartphone will be required to complete a paper process as indicated on the [COVID-19 website](#).

All members of the Carleton community are required to follow guidelines regarding safe movement and seating on campus (e.g., directional arrows, designated entrances and exits, designated seats that maintain physical distancing). In order to avoid congestion, allow all previous occupants to fully vacate a classroom before entering. No food or drinks are permitted in any classrooms or labs.

For the most recent information about Carleton's COVID-19 response and required measures, please see the [University's COVID-19 webpage](#) and review the [Frequently Asked Questions \(FAQs\)](#). Should you have additional questions after reviewing, please contact covidinfo@carleton.ca

Please note that failure to comply with University policies and mandatory public health requirements, and endangering the safety of others are considered misconduct under the [Student Rights and Responsibilities Policy](#). Failure to comply with Carleton's COVID-19 procedures may lead to supplementary action involving Campus Safety and/or Student Affairs.

Statement on Student Mental Health

As a University student you may experience a range of mental health challenges that significantly impact your academic success and overall well-being. If you need help, please speak to someone. There are numerous resources available both on- and off-campus to support you.

Emergency Resources (on and off campus): <https://carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

Carleton Resources:

- Mental Health and Wellbeing: <https://carleton.ca/wellness/>
- Health & Counselling Services: <https://carleton.ca/health/>
- Paul Menton Centre: <https://carleton.ca/pmc/>
- Academic Advising Centre (AAC): <https://carleton.ca/academicadvising/>
- Centre for Student Academic Support (CSAS): <https://carleton.ca/csas/>
- Equity & Inclusivity Communities: <https://carleton.ca/equity/>

Off Campus Resources:

- Distress Centre of Ottawa and Region: (613) 238-3311 or TEXT: 343-306-5550, <https://www.dcottawa.on.ca/>
- Mental Health Crisis Service: (613) 722-6914, 1-866-996-0991, <http://www.crisisline.ca/>
- Empower Me: 1-844-741-6389, <https://students.carleton.ca/services/empower-me-counselling-services/>
- Good2Talk: 1-866-925-5454, <https://good2talk.ca/>
- The Walk-In Counselling Clinic: <https://walkincounselling.com>

Requests for Academic Accommodations

ACADEMIC ACCOMMODATION

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Informal accommodation due to short-term incapacitation: We all have busy lives and face unforeseen challenges. Should you require short-term accommodations, please let me know as early as possible. Communication will be key in these matters and retroactive accommodations will be extremely limited.

Pregnancy obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For accommodation regarding a formally-scheduled final exam, you must complete the Pregnancy Accommodation Form ([click here](#)).

Religious obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details [click here](#).

Academic Accommodations for Students with Disabilities: The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, please request your accommodations for this course through the **Ventus**

Student Portal at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (*if applicable*). Requests made within two weeks will be reviewed on a case-by-case basis. For final exams, the deadlines to request accommodations are published in the **University Academic Calendars**. After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (if applicable).

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and where survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: <https://carleton.ca/equity/sexual-assault-support-services>

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation will be provided to students who compete or perform at the national or international level. Write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

Drop/Withdrawal Date

Please refer to the 2021-2022 Undergraduate Calendar for the final day that one is permitted to withdraw from a fall term course.

Student Life Services

Student Life Services, located in Room 501 of the Unicentre, offers a wide range of programs and services to assist students in adjusting to academic life, in improving their learning skills, and in making academic and career decisions.

University Regulations Regarding Cheating and Plagiarism

University regulations stipulate that any allegation of plagiarism, cheating or violations of examination conduct rules will be thoroughly reviewed. Each case must be reported to the Dean, who investigates each allegation. If there is no resolution following this investigation at the Dean's level, a tribunal will be appointed by the Senate to review the case and make a final decision.

Note on Plagiarism: Webster's Dictionary defines plagiarism as stealing. Plagiarism is the submission of someone else's writing/ideas/work as your own. All ideas presented which are not your own must be properly referenced. While forms of plagiarism may vary, each involves verbatim or near verbatim presentation of the writings or ideas of others' as one's own without adequately acknowledging the original source. Plagiarism includes (but is not limited to) copying from a book, article or another student, downloading material or ideas from the Internet, or otherwise submitting someone else's work or ideas as your own.

PLAGIARISM

The University Academic Integrity Policy defines plagiarism as “*presenting, whether intentionally or not, the ideas, expression of ideas or work of others as one’s own.*” This includes reproducing or paraphrasing portions of someone else’s published or unpublished material, regardless of the source, and presenting these as one’s own without proper citation or reference to the original source. Examples of sources from which the ideas, expressions of ideas or works of others may be drawn from include but are not limited to: books, articles, papers, literary compositions and phrases, performance compositions, chemical compounds, artworks, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software, material on the internet and/or conversations.

Examples of plagiarism include, but are not limited to:

- any submission prepared in whole or in part, by someone else, including the unauthorized use of generative AI tools (e.g., ChatGPT);
- using ideas or direct, verbatim quotations, paraphrased material, algorithms, formulae, scientific or mathematical concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another’s data or research findings without appropriate acknowledgement;
- submitting a computer program developed in whole or in part by someone else, with or without modifications, as one’s own; and
- failing to acknowledge sources through the use of proper citations when using another’s work and/or failing to use quotations marks.

Plagiarism is a serious offence that cannot be resolved directly by the course’s instructor. The Associate Dean of the Faculty conducts a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They can include a final grade of “F” for the course.