

GEOG 3022A/ENST 3022A. Integrated Environmental and Natural Resources
Fall Semester, 2026-2027 Academic Year
Department of Geography & Environmental Studies

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Office Hours: Thursday, 10:05 – 11:00am or by appointment

Timetable: Tuesday, 8:35am – 11:25am; September 15 – December 8, 2026

Brightspace site: <https://brightspace.carleton.ca/d2l/home/452704>

GEOG/ENST 3022 [0.5 credit]. Environmental and Natural Resources. Exploration of complexity, dynamics, uncertainty and equity issues underpinning environmental and resource issues; review and appraisal of selected contemporary methods to assess and manage environmental and natural resources. Includes: Experiential Learning Activity. (from University Course Catalogue)

To elaborate: We depend upon the natural world for the many resources that help maintain the standard of living we enjoy today. However, our seemingly insatiable appetite for these resources is driving us towards an environmental crisis.

Once the domain of economics, today's resource and environmental management strategies are interdisciplinary. Over the past half century, resource and environmental management has evolved from concepts of multiple use and integrated watershed management to integrated resource management, regional land-use planning, ecosystem-based management, and finally to integrated resource and environmental management. A theme that resonates through these various approaches is an environmental sensibility. However, have environmental concerns truly gained equal standing in decisions concerning resource extraction and use alongside economic and political concerns?

This course is designed to combine the theoretical with the pragmatic, seeking to integrate ideas about integrated resource and environmental management with the practical approaches and methodologies used professionally today. The course combines lectures introducing various ideas and approaches used in resource and environmental assessment with workshops in which you will apply the ideas and practices presented in lectures to a case study.

This course is a pre-requisite for *GEOG/ENST 4004 Environmental Impact Assessment* and is strongly recommended for both *GEOG/ENST 4007 Design Thinking for the Anthropocene* and *GEOG/ENST 4006 Environmental Policy* as well.

Course Plan

Introduction

September 15. *Class 1. Course Introduction.* Introducing the Policy Topic.

Part 1: Understanding IREM Problems in a Turbulent World

September 22. *Class 2. The Nature of Problems in a Turbulent World.* From simple to wicked and even super-wicked problems. Incorporating turbulence into problem analysis.

September 29. *Class 3. Scoping the Nature of an IREM Problem.* Breaking down the IREM Problem using Social-Ecological Systems Modelling. Situating the IREM Problem into the larger social setting.

October 6. *Class 4. Framing an IREM Problem.* The Personal Perspective: How we understand IREM problems as individuals. Societal Frameworks for Conducting IREM Assessments: Sustainable development, the ecosystem approach and the regenerative framework.

October 13. *Class 5. Managing the Process.* Structuring IREM. From Command Approaches to Integrated Management to Co-management Approaches to Indigenous-led Approaches. Mid-term review.

October 20. *Class 6. Mid-term.*

Academic Break – No classes October 26 – 30

Part 2: Tackling IREM Problems in a Turbulent World

November 3. *Class 7. It's all about People and the Roles They Play.* Societal actors in IREM. Communities and individuals.

November 10. *Class 8. What should lead in IREM?* Power in IREM. Why does this matter? Who should lead? Forms of governance.

November 17. *Class 9. The Roles Citizens Play.* The three roles citizens play: visionaries, researchers, and decision-makers.

November 24. *Class 10. Incorporating Rights and Justice + Indigenous partnerships.* The importance of reconciliation in IREM.

December 1. *Class 11. Putting it all together.* End-of-term exam review.

December 8. *Class 12. Final exam (optional in-class exam time; formal exam also to be scheduled)*

Learning Outcomes

Upon completion of this course, you will possess

1. The *ability to organise a critical assessment* of social and environmental issues and their impacts within the current planning environment associated with IREM,
2. The *essential basic knowledge* of both established and evolving sustainability-based approaches to IREM with which to conduct such critical assessments,
3. The *confidence to explore and propose meaningful solutions* to societal problems as based on the established principles, methods, and approaches in IREM as learned in the course,
4. The *stronger collaborative skills* needed to work with peers actively, equitably, and consistently, and respectfully in today's professional world, and

5. The ability to design an actual, professional assessment plan to evaluate issues relating to IREM within society's existing and evolving institutional frameworks.

The Class Structure – The weekly class will consist of two parts. I will deliver a formal lecture to begin the class which will likely run around two hours in duration. Then we will devote the final hour to that week's planning worksheet. This will allow you to break into groups to work on the worksheets collaboratively and for me to walk through the worksheet with you. In addition, I will provide you with Zoom access to every class so if you are ill or cannot attend the class in-person, you will be able to sign in and follow along. However, I will not field questions from the Zoom - that is just too distracting. Also, the classes will not be recorded - that is too stifling.

Engagement in the Course and with the Course Materials - I do not ask students to read a lot of materials or watch videos before a class although materials will be available before each class. More importantly, simply attend class. That is the best way to go. For those who cannot attend in person, I will be opening Zoom each class so you can sign in and attend virtually. The uploaded notes will offer greater detail than what we will be able to cover in class so they will be important when preparing for the final exam.

Course Textbook

There is no textbook for this course. However, you have access online to the *Handbook on Strategic Environmental Assessment* (2021) through the library web site. This is a relatively 'new' publication that is quite comprehensive.

Evaluation

The course is organised into two parts examining first the normative dimension and then the strategic/operational dimensions of integrated resource and environmental management. Each part consists of a series of weekly worksheets and a test.

- *Planning Document and Worksheets.* This year you will be looking at developing a plan for conducting an IREM strategic assessment for the creation of a city plan for the City of Ottawa for incorporating Miyawaki forests into its urban greenspace/forest plan. This involves creating a planning document. To help you produce this planning document, there are two worksheets for you to complete. You will be applying the materials covered in class to the case study in these worksheets. You are encouraged to form working groups to discuss and brainstorm the tasks outlined in the worksheets. This is because out there in the real world, much of what you will be doing is as teams. Get used to this now. It will be important to keep pace here since these worksheets build on the previous worksheets and do them since the materials you produce in these worksheets provide the essential basis for each planning document. Then you will produce a final planning document which will be submitted on the final day of the exam period. This planning document and worksheets is worth 60% of your final grade.
- *In-class Exams.* There will be two in-class exams, a mid-term and a final exam. Each is worth 20% of your final grade. In these exams, you will be expected to demonstrate your understanding of the course materials by describing, explaining, and discussing the ideas, methods, and models presented in the formal lectures. NOTE: A formal

exam time will also be offered for the end-of-term exam for those who prefer not to write it on December 8.

Deliverables: Dates and Grading

Course grading is based upon three deliverables: the two planning documents and the final exam. All deliverables are mandatory. Failure to complete any of the tasks can result in the student failing the course.

<i>Planning Document</i>	<i>60%</i>
<i>Worksheet 1 (due: November 3)</i>	<i>20%</i>
<i>Worksheet 2 (due: December 8)</i>	<i>20%</i>
<i>Final Planning Document (due: day of formal final exam)</i>	<i>20%</i>
<i>In-class Exams (2 @ 20%)</i>	<i>40%</i>
<i>Total</i>	<i>100%</i>

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

A+	90-100	B+	77-79	C+	67-69	D+	56-59	F	Below 50
A	85-89	B	73-76	C	63-66	D	53-56	WDN	Withdrawn
A-	80-84	B-	70-72	C-	60-62	D-	50-52	DEF	Deferred

ABS = Student absent from final exam.

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.

Late Submissions of Worksheets - In the real world, you are expected to meet your deadlines. Learn to meet deadlines. I will accept late worksheets up to one week following their due date and these will be graded out of 15 marks (not 20). Worksheets will not be accepted after one week. I want you to take deadlines seriously. In this course, the course materials and the worksheets build on each other so it is imperative that you keep a steady pace through the semester.

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 at the Centre for Student Academic Support (4th Floor, MacOdrum Library, <https://carleton.ca/csas/>). Students are also strongly advised to retain a hard copy (and electronic backup) of all assignments and term papers in the event of loss for whatever reason.

Statement on Academic Integrity

This course encourages both collaborative work and the opportunity to pull together knowledge and practices from other courses. Given this, I expect students to abide by the following stipulations:

- a. *Use of materials from other courses.* You can draw upon materials from other courses – but only as background materials and this is limited to 20% of the total work. In addition, if you are re-using your own work from a different course (or from the same course if you are repeating), you are required to cite the work. I reserve the right to request copies of all such works for review.
- b. *Use of group or collaborative work.* As already stated, I encourage you to form working groups to work on and brainstorm the assignments. I expect a portion of your assignments to contain this group work. You will be expected to clearly identify what portion of an assignment is group work (using italicised font) and what is your individual part (using of regular font). There must be individual work in all assignments. Make sure these are clearly differentiated.
- c. *Use of generative artificial intelligence tools (e.g. Copilot, ChatGPT).* There is no reason to use AI tools in this course. However, if you do choose to explore ideas with the help of GenAI, I want you to create an endnote where you state the AI software used and the series of queries you posed. Furthermore, if you include the generated response to your query, or a portion of it, in your assignment you must present it the same way you would for a quote from a published source and cite it accordingly. Finally, you must do more than present generated AI answers in your assignments. The AI information can only be used as a source for any answer; it is not to be used to generate answers.

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. This also includes any AI-generated work. This can result in a 0 for the assignment.

Examples of plagiarism include, but are not limited to:

- any submission prepared in whole or in part, by someone else,
- 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,

- failing to acknowledge sources through the use of proper citations when using another's work and/or failing to use quotations marks, and
- submitting any work generated by an AI chatbot program (e.g., ChatGPT), unedited or modified/ edited by the student.

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.

In addition, students cannot submit work produced in any other course. The work submitted must be original and based on the materials presented in this course.

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. Here is a list that may be helpful:

Emergency Resources (on and off campus):

- Emergency numbers: <https://carleton.ca/health/emergencies-and-crisis/emergency-numbers/>
- Suicide Crisis Helpline: call or text 9-8-8, 24 hours a day, 7 days a week.
- For immediate danger or urgent medical support: call 9-1-1

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

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes, including information about the *Academic Consideration Policy for Students in Medical and Other Extenuating Circumstances*, are outlined on the Academic Accommodations website (students.carleton.ca/course-outline).

Pregnancy - Please, write to me before the start of the semester or speak with me about any requests for academic accommodation during our first class. For accommodation regarding a formally scheduled final exam, you must complete the Pregnancy Accommodation Form.

Religious obligation - Again, please write to me before the start of the semester or speak with me concerning any possible requests for academic accommodation during our first class.

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, contact your PMC coordinator to send me your Letter of Accommodation 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). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request any accommodation 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 or speak with me during the first class concerning any possible requests for academic accommodation the need for accommodation is known to exist. <https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>