

GEOG 3022A/ENST 3022A. Integrated Environmental and Natural Resources  
Fall Semester, 2025-2026 Academic Year  
Department of Geography & Environmental Studies

**Instructor:** John Milton, Associate Professor (Teaching)  
**Office:** A-239, Loeb Bldg.  
**E-mail:** [johnmilton@cunet.carleton.ca](mailto:johnmilton@cunet.carleton.ca)  
**Office Hours:** Monday/Wednesday, 10:05 – 11:00am or by appointment

**Timetable:** Monday/Wednesday, 8:35am – 9:55am; September 3 – December 1, 2025  
**Location:** Nideyinn (Unicentre), Room 282  
**Brightspace site:** <https://brightspace.carleton.ca/d2l/home/372863>

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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

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### *Introduction*

*September 3. Class 1 - Course Introduction.* Introducing the Policy Topic.

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### *Part 1: Understanding IREM Problems in a Turbulent World*

#### *Unit 1. Scoping the Nature of IREM Problems*

*September 8. Class 2 – A Typology of Problems.* From simple to wicked and super-wicked problems.

*September 10. Class 3 – Understanding an IREM Problem.*

#### *Unit 2. Situating IREM Problems in the Real World*

*September 15. Class 4 – Conceptual Mapping of IREM Problems.* Using social-ecological (SES) modelling in IREM.

*September 17. Class 5 – Societal Framings and Approaches to IREM Problems.* IREM as embedded in the social. Institutions and Political Ecology.

*September 22. Class 6 – Adding Turbulence.* Situating IREM in a Complex, Turbulent World. Analysing an IREM Question using Mitchell's 4 C's.

#### *Unit 3. Approaching IREM Problems*

*September 24. Class 7 – One's Personal Understanding and Approach to IREM Problems.* The Personal Perspective: Worldviews and Perspectives. How we understand IREM problems as individuals.

*September 29. Class 8 – Societal Frameworks for Conducting IREM Assessments.* Sustainable development and the ecosystem approach.

*October 1. Class 9 – Societal Frameworks for Conducting IREM Assessments.* Regenerative framework.

### *Mid-term Test*

*October 6/8. Class 10/11 – Mid-term review.* How this all fits together.

*October 15. Class 12 – Mid-term exam.*

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## Academic Break – No classes October 20 – 24

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### *Part 2: Tackling IREM Problems in a Turbulent World*

#### *Unit 4. Planning an IREM*

*October 27. Class 13 – Managing the process.* From Command Approaches to Integrated Management to Co-management Approaches.

*October 29. Class 14 – Mapping out an IREM.* Organising what we need to know.

#### *Unit 5. Who to include in IREM?*

*November 3. Class 15 - Engaging People - I.* Societal actors in IREM.

*November 5. Class 16 – Engaging People - II.* The roles of the citizen as individuals, from visioning to assessments to monitoring/evaluation.

*November 10. Class 17 – Engaging Knowledge and Knowledge-holders.* What knowledge should be privileged? Formal knowledge. Citizen science. Indigenous knowledge.

#### *Unit 6. Who should lead in IREM?*

*November 12. Class 18 – Who holds the power in IREM?* Roles, responsibilities and decision-making in IREM.

*November 17. Class 19 – Incorporating Social/Environmental Justice/Rights into IREM.* Whose rights? Shared responsibility.

*November 19. Class 20 – Indigenous-led management.* Learning from our Indigenous partners.

### *Final Test*

*November 24. Class 21 - Unit review for Final exam.*

*November 26. Class 22 - Final exam.*

*December 1 (optional). Class 23 - The Challenges Facing the Environmental Professional.* Optional final reflection.

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## 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.

## Engagement with the Course Materials

I do not ask students to read materials or watch videos before the class. Simply attend class. That is the best way to go. However, if you are unable to attend, videos of the class materials will be released following the class. I will endeavour to do so immediately following the end of each class. I will also upload the transcripts of these videos for those of you who prefer to read rather than listen. However, please note that I tend to digress from the script when talking so I say more in the video than is found in the transcripts.

## 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 new publication that is quite comprehensive.

## Evaluation

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

- *Unit Worksheets*. This year you will looking at the possible commercialisation of the Northwest Passage as a case study. There are six worksheets to be completed during the semester, one for each unit. In these worksheets, you will be applying the materials covered in each specific unit to a case study. Although these worksheets are to be submitted individually, you are encouraged to form working groups to discuss and brainstorm the tasks. This is because much of what you will do out there in the real world will be as teams. Get use to this now. Each unit worksheet is worth 10% for a total of 60% of your final grade. These are due before the start of a new unit. Late submissions will be graded out of six (6%). Submissions will not be accepted after one week. Take these exercises seriously as they can provide a solid base for a strong final grade.
- *Term Tests*. There are also two tests, together worth 40% of your final grade. The first test will cover the materials presented in the introduction and part one. The second test will cover the materials presented in the second part of the course. Each is worth 15% of your

final grade. Your better test gets bumped up to 25%. These tests will in-class and be 90 minutes in length. You will be expected to demonstrate your understanding of the course materials by describing, explaining, and discussing the ideals, methods, and models presented in the formal lectures.

- *Final Reflection: You as an Environmental Expert (Optional)*. As a final optional deliverable, you can submit a final reflection on you as an environmental expert, the role(s) you play, the responsibilities you assume in those roles. This will be a take-home assignment to be done during the exam period. This reflection will replace one of the unit worksheets, the worksheet having the lowest grade.

### Deliverables: Dates and Grading

Course grading is based upon two sets of deliverables: the six (6) unit exercises and the two tests. All deliverables are mandatory. Failure to complete any of the tasks (exercises and/or tests) can result in the student failing the course.

<i>Unit Worksheets</i>	<i>60%</i>
Six Unit Exercises @ 10% each	
<i>Course Tests</i>	<i>40%</i>
First Test: (October 15)	
Second Test: (November 26)	
<i>You as an Environmental Expert Reflection (optional)</i>	<i>10%</i>
(replaces your lowest graded unit worksheet)	
<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. You have one full week to complete each worksheet. As noted already, I will accept late worksheets up to one week following their due date and these will be graded out of six marks (not 10), but not after one week. After one week, you will receive a zero for the worksheet. The two tests have been set on class days. Each is 90 minutes in length, the same as a scheduled class, so although you will be able

to do each test any time during that day (from 12:01am to 11:59pm), you always have the class time open to you to do the test.

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 (4<sup>th</sup> 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 this is limited to 25% 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). I expect all your assignments to contain both. Make sure these are clearly differentiated.
- c. *Use of generative artificial intelligence tools (e.g. ChatGPT).* There may be opportunities for you to use AI tools for exploring ideas in this course. Be careful though when it comes to the appropriateness of the sources. Should you do so when seeking specific information, 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, 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 is only a portion of any answer.

## 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.

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](https://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](mailto: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 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 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>