

Special Topics in Geography of the Environment (GEOG 5006 - W)
Aquatic ecosystem change
Department of Geography and Environmental Studies
Thursdays: 8:35 - 11:25 am
Online

Instructor: Dr. Jesse Vermaire
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Environmental Studies
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Office hours: By appointment

Class Schedule: Thursday: 8:35 – 11:25 am: roughly 1 hr seminar, 2 hr for project work and discussion

Prerequisites: Graduate student standing or permission of the instructor. There is an expectation that all participants will have knowledge of aquatic science or physical geography – or at least an interest in the topic.

STRUCTURE OF THE COURSE: This course has been designed to be delivered using a **blended delivery mode**. This means that we will meet most weeks for live Zoom sessions during class time but there will also be material posted to cuLearn that you will be able to access on your own during the scheduled class time.

Requests for Academic Accommodations

Carleton provides [academic accommodation to students](#) for reasons of disability, religious observance, pregnancy and/or parental leave, sexual violence, and student activities.

Providing accommodations simply means providing alternatives to students who cannot perform the essential requirements of their academic programs due to the reasons mentioned above. At no time does academic accommodation undermine or compromise the learning objectives that are established by the academic authorities of the university.

This section provides only a brief overview of the accommodations policy and process. Please contact [Equity and Inclusive Communities](#) for a full explanation.

Religious Observation

A request should be made in the first two weeks of the academic term, or as soon as possible where the scheduling of an event or activity conflicting with a religious obligation does not appear in the course outline or calendar. A list of multi-faith holy days is accessible through the [Equity Services website](#). Instructors can also contact Equity Services to confirm the eligibility of a religious event or practice.

Pregnancy and/or Parental Leave

Requests for parental leave must be made in writing to the Registrar's Office, or in the case of graduate students, to the Office of the Dean of Graduate and Postdoctoral Affairs. A student who is pregnant may request a temporary modification to her program (e.g., laboratory or field work). The student should meet with the instructor(s). The department chair/director and the faculty dean can

assist in the discussion. An Equity Services advisor can also be consulted if a student has questions about pregnancy and/or parental leave.

Students with Disabilities

Carleton is strongly committed to providing access and accommodation for all individuals with identified and duly assessed disabilities. The university has a [Senate-approved policy on academic accommodation](#) that forms part of its human rights policy. The policy promotes efforts to accommodate students with disabilities so that they will have the opportunity to meet learning outcomes and be fairly evaluated in their performance. In no case, however, does academic accommodation negotiate away, lower, or remove the academic standards and learning outcomes of any course or program, rule, regulation, or policy at the university. Some students with disabilities may require special accommodations for tests and exams. In these cases, students must present you with a signed accommodation form from the Paul Menton Centre detailing their accommodation needs well in advance of the date of an exam. A copy of the [Paul Menton Centre accommodations policy can be found here](#).

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 carleton.ca/sexual-violence-support.

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 must be provided to students who compete or perform at the national or international level. Please contact your instructor 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, see [the policy](#).

Contacts

Equity Services 503 Robertson Hall 613-520-5622 equity@carleton.ca carleton.ca/equity	Paul Menton Centre 501 University Centre 613-520-6608 pmc@carleton.ca carleton.ca/pmc
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Purpose and Objectives: The purpose of this course is to provide students with the opportunity to explore key topics related to human impacts on aquatic systems with a particular focus on the last century and Canadian systems.

The specific learning objectives of the course are to:

1. Introduce students to emerging concepts in aquatic science and paleolimnology;
2. Provide students with skills to synthesize and critically review scientific papers to develop a critical understanding of topics in the aquatic sciences;
3. Develop scientific collaboration skills required to work in academic and non-academic settings;

4. Familiarize students with formal scientific writing and the publication process.

Evaluation: The grade for this course will be based on (a) the student's participation in class discussions and seminars (25%), (b) a presentation and facilitated discussion on a topic chosen with the approval of the instructor along with an 800 word summary of the topic (25%), and (c) production of a review paper, meta-analysis, or bibliometric study on a subject chosen in consultation with the instructor worthy of submission to a peer reviewed outlet (50%). There are no exams.

Organization of the Course

Participation

Students are expected to actively participate in class discussions. Active participation will require that students have read all assigned material and come to class prepared to discuss the material. Students are expected to attend classes, however, there will be flexibility for those with research related conflicts (e.g., fieldwork, conferences).

Seminar/Facilitated Discussion/Written Summary

With the guidance of the instructor, students will each select a topic dealing with aquatic ecosystems. Students are responsible for leading a ~1.5 hour seminar which should include a 45 min presentation and a 45 min discussion structured around 3 key peer reviewed papers selected by the student. Students are at liberty to run the seminar as they desire, but are expected to engage the group leading to debate and discussion. Students should select their 3 key papers on their topic to e-mail to the group at least one week before their seminar. Each student will also produce a maximum 800 word summary of their topic (with ~10 references). Some examples of potential topics include the following:

- Evidence for climate change impacts on northern aquatic ecosystems
- Impact of extreme climate events on aquatic ecosystems
- Human impacts on aquatic biodiversity
- Land-use change impacts on aquatic ecosystems
- Tracking (or monitoring) human impacts on aquatic ecosystems
- Defining baseline environmental conditions
- Plastic pollution of aquatic ecosystems
- Resilience and aquatic transitions
- Planning for environmental change for freshwater resources

Students are free to propose topics to the instructors.

Review Paper

With the guidance of the instructor, students will work to research, critically evaluate, and synthesize material related to aquatic ecosystems. The format of the report will be a review, meta-analysis, or perspective article. Students will produce a manuscript-style report that would be suitable for submission to the journal *Environmental Reviews*. The report, including figures, tables and references, will be formatted according to the journal specifications outlined in the journal's "Guide to Authors". The goal of this project is to provide students with the opportunity to develop skills necessary to contribute meaningful insight on a scientific topic, and to disseminate their findings through the primary literature. The written project will be due on the last day of class.

Late Policy: The late policy of this class is designed to be fair to students who handed their work in on time. Without a legitimate excuse, all late submissions are docked 10% per day.

Plagiarism and Academic Integrity: As graduate students, you will be held to high standards of academic integrity (this is particularly important when reviewing and synthesizing other people's ideas for the group project). Academic misconduct related to plagiarism and academic integrity has serious consequences (see <http://www.carleton.ca/cu0607uc/regulations/acadregsuniv14.html>).

Exceptionalities: Students with disabilities requiring academic accommodations in this course are encouraged to contact a coordinator at the Paul Menton Centre (PMC) for Students with Disabilities to complete the necessary letters of accommodation.