

**GEOG 7440 & GEOG 4660 – Climate change and the Arctic marine system**

Fall semester 2019

Instructor: Dr. David Barber ([David.Barber@umanitoba.ca](mailto:David.Barber@umanitoba.ca))

Course coordinator:

Dave Babb ([david.babb@umanitoba.ca](mailto:david.babb@umanitoba.ca))

472 Wallace Building

Description

This seminar course will focus on exposing students to the broad range of research being done within CEOS and by our large network of collaborators. Each week a guest lecturer will present on their field of expertise, providing background knowledge on the topic while also presenting some of their recent work and recent developments in the field. Following the guest lecture, students will give presentations introducing their project to the class and providing background on their work. The goal of the course is to share knowledge and spark discussion between students and guest lecturers. Furthermore the goal is to provide students with the opportunity to practice giving presentations and prepare them for conference or thesis related presentations.

Lectures:

Wednesday 2:30-5:00 pm, Klaus Hochheim Memorial Theatre, 545 Wallace Building

Evaluation:

The undergraduate and graduate level course will follow a similar style but have different assignments. The graduate level course will be related to their own research project and fieldwork, while the undergraduate level course will introduce the students to scientific research and the process of scientific research.

Graduate GEOG 7440		Undergraduate GEOG 4660	
NSERC/SSHRC proposal	50%	NSERC/SSHRC proposal	50%
Background presentation and report	20%	Journal article review	20%
Journal article proposal and outline	20%	Background presentation and report	20%
Class participation	10%*	Class participation	10%*

\* Class participation marks will be based on a student's involvement in the question and discussion period following each presentation.

Final Grade Allocation:

A+	> 90%	C+	65% - 69%
A	80% - 89%	C	60% - 64%
B+	75% - 79%	D	50% - 59%
B	70% - 74%	F	< 50%

Course Policies:

Reports: Reports must be emailed to Dave prior to the beginning of the class during which the student is presenting. A penalty of 10% per day will be given to late reports unless the student has obtained instructor's approval in advance of the deadline. Please submit students in either

Microsoft word or PDF format double-spaced with 12 pt. font. Please name your word document “GEOG7440\_ *last name*\_background” or “GEOG7440\_ *last name*\_proposal”. i.e. GEOG7440\_Babb\_background.doc. Undergraduates can replace 7440 with 4660.

Academic dishonesty: Academic dishonesty (plagiarism, cheating) is a very serious matter in any academic institution and is dealt with severely at the University of Manitoba. Commonly the penalty for any form of cheating is a grade of F on the assignment and/or a final grade of F in the course. Please familiarize yourself with the University policy on academic dishonesty found in the Undergraduate Calendar on the University website.

Textbook, Readings, Materials: There is no textbook for this class, but there will be weekly journal articles to read in preparation for the upcoming guest lecture. PDF’s of the required article will be provided via email by Dave Babb 1 week prior to each presentation.

Using Copyrighted Material: Please respect copyright within your presentation and written assignments. Proper citation and referencing is a key part of science and must be done properly within this course. For more information, see the University’s Copyright Office website at <http://umanitoba.ca/copyright/> or contact [um\\_copyright@umanitoba.ca](mailto:um_copyright@umanitoba.ca).

Questions/Concerns: If you are having a problem and want to discuss something, please feel free to see Dave before/after class or in his office at a more convenient time. Either of us can also be reached via email.

Voluntary Withdrawal Date: The voluntary withdrawal date is the last date for withdrawing from this course without academic penalty. The voluntary withdrawal date for this course is November 19, 2018. Evaluative feedback will be provided prior to this date.

Student Accessibility Services: If you are a student with a disability, please contact SAS for academic accommodation supports and services such as note-taking, interpreting, assistive technology and exam accommodations. Students who have, or think they may have, a disability (e.g. mental illness, learning, medical, hearing, injury-related, visual) are invited to contact SAS to arrange a confidential consultation.

*Student Accessibility Services* <http://umanitoba.ca/student/saa/accessibility/>

520 University Centre

204 474 7423

[Student\\_accessibility@umanitoba.ca](mailto:Student_accessibility@umanitoba.ca)

Assignment grading: Assignments will be graded and returned to the student with comments within 1 week of submission. A sufficient percentage of your grade will be available prior to the VW date (November 18, 2018).

Phones and Laptops within class: It is the general policy of the University of Manitoba that all technology resources be used in a responsible, efficient, ethical and legal manner. During class we ask that cell phones be silenced and put away and that laptops, tablets, etc. be used only for taking notes. In the case of an emergency we ask that you switch your phone to vibrate and leave the room before answering the call.

## GEOG 7440 – Graduate Level Assignments

### REPORT #1: Background

Students are required to write a literature review (of peer-reviewed articles) about their field of study. It will consist of a written review of 10 pages (including figures, excluding references and title page, double spaced) and an oral PowerPoint presentation (15 minutes). The written review and oral presentation should contain the following

- (i) Context of your research (why it's important)
- (ii) Previous studies in your field and about your area of interest
- (iii) Type of data / manipulation that was previously used
- (iv) Potential gap in the literature

A round of questions and discussion will take place after each oral presentation. The presenters' ability to answer questions will be considered towards their grade. Questions and contribution towards the discussion from the audience will be considered towards each student's participation mark.

### REPORT #2: Paper outline

Each student is required to write an outline for a future paper based on your thesis work. It will consist of a rough draft of around 5 pages (bullet point form) and an oral presentation (20 minutes). The objective is to get you to begin thinking about your first paper and the start to outline the structure of it. The written review and oral presentation should contain the following

- (i) A working title, author list, and target journal
- (ii) An outline of the key points and objectives of the paper
- (iii) Introduction with relevant references from appropriate articles
- (iv) A list of datasets available to be used in the paper
- (v) An outline of the methods to be used on the datasets
- (vi) Two figures based on the hypothesized outcomes (rough figures that show the hypothesized relationships or time series of the data. Can be made in Illustrator)
- (vii) Minimum of 10 references

A round of questions and discussion will also take place after each oral presentation.

### NSERC/SSHRC Application assignment:

Each student is required to complete an NSERC or SSHRC style research proposal on a topic related to their own research. This should follow NSERC guidelines as outlined in the attached NSERC application file (GEOG\_7440\_NSERC\_Application).

The purpose of this assignment is to challenge you to concisely present a research concept, and identify the key project management and research considerations for the project. The deadline for the proposal will be **November 20, 2019**.

Tentative presenter schedule:

<u>Date</u>	<u>Guest Lecturer</u>	<u>Student Presentations</u>	
September 4	No class		
September 11	Introduction and syllabus		
September 18	Dave Babb – an introduction to Arctic sea ice		
September 25	Andrea Charron – Arctic Security and Defence in the wake of climate change	Esty	
October 2	David Capelle – Impacts of rivers, primary production and sea ice on CO <sub>2</sub> exchange and ocean acidification in Hudson Bay	Emma	Elvis
October 9	Eric Collins – Map of Arctic Marine Microbial Diversity	Brock	Ago
October 16	Vishnu Nandan – Sea ice, snow and satellite remote sensing		
October 23	Dave Babb – How to write a paper		
October 30	Ian Mauro – UW	A2	A2
November 6	Jamie Wilson – Arctic Gateway	A2	A2
November 13	Fall term break – no class		
November 18	Voluntary Withdrawal date		
November 20	David Barber	A2	A2
November 20	NSERC application due		
November 27	Maddie & chris – Autonomous observations from above and below.	A2	A2
December 4	Pardis Karimialavijeh – Oil in sea ice		