



## REN R 466

### Climate Change and the North

In Winter 2023, REN R 466, Climate Change and the North, is being offered at Yukon University as part of the Northern Environmental and Conservation Sciences, B.Sc. Program. All students registered in REN R 466 must adhere to the requirements outlined in this course syllabus. University of Alberta students must also be aware of, and adhere to, the University's Code of Student Behaviour, referenced in the outline.

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**INSTRUCTOR:** Dr Marianne Douglas  
Instructor, Northern ENCS Program  
Renewable Resources, UAlberta

**OFFICE HOURS:** By appointment

**OFFICE LOCATION:** NA

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**CLASS DAYS & TIMES:** Mon/Weds 2:30 – 4:00 PM

**CLASS LOCATION:** A 2202

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### COURSE DESCRIPTION

Current and projected impacts of climate change on the circumpolar north, including the land, its biota, northern communities, and drivers that shape these interactions.

### COURSE PREREQUISITES AND/OR CO-REQUISITES

Registration in Yukon University/University of Alberta B.Sc. in Environmental and

Conservation Sciences degree program.

## **LEARNING OUTCOMES**

Upon successful completion of this course students will be able to:

- Understand the many dimensions of climate change
- Evaluate the evidence regarding climate change – both current and past – and an understanding of the level of uncertainty in predicting changes in climate
- Understand why climate change is more dramatic in the North
- Demonstrate knowledge of how the North has responded to ecological, economic and cultural changes in the past, and how the North may respond to plausible scenarios of future climate change
- Demonstrate awareness of the complexity of developing responses to climate change and
- Gain confidence in critical thinking, writing, oral presentation and research skills

## **COURSE FORMAT**

### **Weekly breakdown of instructional hours**

This course meets twice per week face-to-face (Mon and Weds 2:30 – 4:00 PM). It is expected that this course will require 3 - 4.5 hours/week of homework and additional reading. It is important to note that the time required will vary by individual. Additional study time will be required to prepare for exams. A general rule of thumb states that a ratio of 2 hrs of study per 1 hr of lecture content is needed – so, for example, an exam covering 7 hrs of lecture can be expected to need 14 hrs of study time in advance of the exam.

### **Delivery format**

This course will be delivered in a face-to-face format. Students will be required to attend face-to-face sessions on-campus (Mon and Weds 2:30 – 4:00 PM) and might be required to complete asynchronous online activities.

**NOTE: The last class for this course will be on Wed April 12, 2023 so as to make up for the Monday class lost to Easter.**

## EVALUATION

The course grade will be determined as follows:

<b>Assignment/test/exam</b>	<b>Percent</b>	<b>Due Date</b>
Term Assignments	20	Jan - Feb
Mid-term test	25	Feb 15
Research paper and presentation	20	Mar - Apr
Participation	10	
Final test	25	April 12
Total	100%	

### **Attendance and Participation**

A participation mark of up to 10% is attributed to attendance and participation in class discussions.

### **Assignments**

In order to pass the course, all assignments, mid-term and final tests must be completed, submitted and collectively receive a passing grade.

### **Exams**

Missed Midterm Exam: If a student misses a midterm due to an acceptable reason, e.g., illness, a new time can be set between the instructor and/or student for the student to write the midterm or, under the discretion of the instructor, the weight of the midterm can be transferred to the final test.

Missed Final Test: The final "exam" for this course will be in a take-home test format. Instructors can neither give permission to a student to miss the final exam nor grant a request for a deferred final exam. Should a student not be able to write this exam, they are encouraged to speak with the ENCS Program Advisor at Yukon University. Acceptable reasons for an excused absence may include illness or bereavement, and unacceptable reasons include weddings, travel arrangements or being on vacation. The University of Alberta policy on deferred exams can be found

in Section 23.3.2 of the University Calendar. It includes specific instructions on how to obtain a deferral.

### **Due Dates and Late Assignments**

All assignments, other than presentations, are due by the beginning of class on the due date, i.e., 2:30 PM. Electronic copies should be uploaded to the course website or emailed directly to the instructor. No extensions will be granted, and late assignments will be penalized 5% per day.

### **Assignment of grades**

The total numerical score will be converted to a grade on the following letter grading system:

<b>Letter grade</b>	<b>Percentage</b>
A+	95-100
A	90-94
A-	85-89
B+	79-84
B	75-78
B-	71-74
C+	67-70
C	64-66
C-	60-63
D+	55-59
D	50-54
F	0-49

### **COURSE WITHDRAWAL INFORMATION**

Students should refer to the UAlberta calendar for important dates ([calendar.ualberta.ca](http://calendar.ualberta.ca)).

## **TEXTBOOKS AND LEARNING MATERIALS**

There is no specific textbook for the class. We will draw from existing online resources for all activities in addition to primary research papers available from peer-reviewed journals. Key resources include the following and will be made available as PDFs or URLs on the course website:

- Intergovernmental Panel on Climate Change reports
- Canada in a Changing Climate: various reports released 2019-2022, including Chapter 6, Northern Canada, regional perspectives report (2022)
- Yukon Climate Change Indicators and Key Findings 2022. YukonU Research Centre, Yukon University, 126 pp.

It is expected that students have access to reliable internet access and appropriate software for word-processing as well as creation of presentations.

## **COURSE WEBSITE**

The course website will be available via UAlberta's eClass system and will be used for assignment submissions, gradebook, and weekly postings of PDFs of lectures and readings.

## **ACADEMIC INTEGRITY**

### **Yukon University Academic Standards and Regulations**

Students are expected to contribute toward a positive and supportive environment and are required to conduct themselves in a responsible manner. Academic misconduct includes all forms of academic dishonesty such as cheating, plagiarism, fabrication, fraud, deceit, using the work of others without their permission, aiding other students in committing academic offences, misrepresenting academic assignments prepared by others as one's own, or any other forms of academic dishonesty including falsification of any information on any Yukon University document.

Please refer to YukonU Academic Regulations & Procedures for further details about academic standing and student rights and responsibilities.

## **University of Alberta Academic Integrity and Code of Student Behaviour**

The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at [www.governance.ualberta.ca](http://www.governance.ualberta.ca)) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students at the University of Alberta are subject to the Code of Student Behaviour, as outlined at:

<http://www.governance.ualberta.ca/en/CodesofConductandResidenceCommunityStandards/CodeofStudentBehaviour.aspx> Please familiarize yourself with it and ensure that you do not participate in any inappropriate behavior as defined by the Code. Key components of the code include the following statements:

30.3.2(1) No Student shall submit the words, ideas, images or data of another person as the Student's own in any academic writing, essay, thesis, project, assignment, presentation or poster in a course or program of study.

30.3.2(2) c. No Student shall represent another's substantial editorial or compositional assistance on an assignment as the Student's own work.

## **PROFESSIONALISM AND CLASSROOM RULES OF ENGAGEMENT**

Students are expected to attend all lectures and labs, be engaged and courteous in all course activities, and to be on time for class. Please do not use cellular phones during class. Laptops are permitted for note taking and in-class work; however, please do not use laptops in class for non-class-related activities.

## **ELECTRONIC DEVICES**

The use of electronic devices during in class tests and exams is restricted.

## **RECORDING OF LECTURES, LABS, ETC.**

Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Student or instructor content, digital or otherwise, created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).

Please note that some classes in the B.Sc. Northern ENCS Program may be recorded using web conferencing software, and links to recordings may be posted on the class website.

## **ACCESSIBILITY AND ACADEMIC ACCOMMODATION**

Yukon University is committed to providing a positive, supportive, and barrier-free academic environment for all its students. Students experiencing barriers to full participation due to a visible or hidden disability (including hearing, vision, mobility, learning disability, mental health, chronic or temporary medical condition), should contact [Accessibility Services](https://www.yukonu.ca/student-life/learning-matters/accessibility-services) (<https://www.yukonu.ca/student-life/learning-matters/accessibility-services>) for resources or to arrange academic accommodations: [access@yukonu.ca](mailto:access@yukonu.ca).

## **TOPIC OUTLINE**

*Circumpolar regions and their climates*

*Scientific basis of climate change*

*Climate change and paleoclimates*

*Climate drivers*

*Carbon cycle*

*Climate models*

*Environmental and socio-economic impacts*

*Policy responses to climate change*

*Responding to climate change: adaptation and mitigation*