

DESCRIPTION

Confused about the global warming debate that saturates the media? This course will give you a change to understand the science behind climate change. The primary objective of this course is to provide students with the scientific literacy to understand the general issue of climate change with emphasis on specific regions on Earth. This will be accomplished by investigating the physical and astronomical factors that drive climate change. Focus will also be given to current and future climate change in the context of observations and modeling

At the end of this course, students will be able to:

- discuss the components of the Earth's climate system as related to climate change
- explain the historical context and mechanisms responsible for past and abrupt climate change events
- describe current changes to atmospheric components and the relationship to Earth's system
- describe the physical, biological and astronomical factors that drive climate change
- evaluate predictions of future climate change

GENERAL INFORMATION

Dr. John Iacozza
Phone: (204) 474-8483

Office: 472 Wallace Building
Email: John.Iacozza@umanitoba.ca

Office hours: Monday and Wednesday 9:15-10:15 am.

TEXTBOOK

REQUIRED: Burroughs, W.J. (2007) *Climate Change: A Multidisciplinary Approach* (2nd ed.) Cambridge Press

COURSE WEBSITE

- The GEOG 3390 course site is available for registered students at: umanitoba.ca/umlearn.
- Your login name and password are the same as your UMnetID.
- Information posted on the UMLearn site includes course syllabus, computer lab assignment information, grades, Dropbox for assignments and course announcements. Course notes WILL NOT be provided on the course website.

EVALUATION

Assignment 1:	10 %	Midterm:	15 %
Assignment 2:	10 %	Final Exam (2 hr):	25 %
Assignment 3:	10 %	Class Participation:	10 %
Assignment 4:	10 %		
Assignment 5:	10 %		

FINAL GRADE ALLOCATION

A+ 90% or above	C+ 65% - 69%
A 80% - 89%	C 60% - 64%
B+ 75% - 79%	D 50% - 59%
B 70% - 74%	F 49% or below

STUDENT RESPONSIBILITIES

- A high level of student cooperation and participation, involving asking and answering questions during the lectures.
- ***Cell phones and portable music players must be turned off during lectures. Students are also required to remove earphones. NO TEXTING DURING CLASS.***
- Students are required to attend all lectures and take notes. Students are expected to be punctual for classes. Not all material presented in the lectures is covered in the text. *If you miss a lecture, make arrangements to get notes from a fellow student, not from instructor!* Lecture slides will not be provided on UMLearn (the learning management tool).
- The individual student is required to read the assigned chapters of the textbook *prior to class*. Not all the textbook will be covered in the lectures but may be covered on the quiz or exam.
- Students are required to complete the necessary assignments individually and on time, unless otherwise stated.

COURSE POLICIES

Academic Integrity: Academic dishonesty (plagiarism, cheating) is a very serious matter in any academic institution and is dealt with severely at the University of Manitoba.

Plagiarism is copying another student's assignment or examination. While I strongly encourage collaboration, the assignments must be submitted individually, **using your own words**. If you quote other sources of information in an assignment, make sure to provide proper credit.

Cheating is the possession of an unauthorized material during the final exam, including crib notes, texts or dictionaries. Students must not be in possession of a cell phone, iPod, iPad or any other electronic device.

Commonly, the penalty for any form of academic dishonesty is a grade of zero on the assignment or final exam, or a final grade of F in the course. Please familiarize yourself with the University policy on academic dishonesty found on the following website:

http://www.umanitoba.ca/student/resource/student_advocacy/cheating_plagiarism_fraud.html.

Audio/Video Recording: Students are **NOT** permitted to photograph, audio or video record the lectures in its entirety or any parts.

Questions/Concerns: If you are having a problem and want to discuss something, please feel free to see me before/after class, during my office hours or make an appointment at a more convenient time. I can be reached through phone or email (preferred method).

Emails: Ensure that the course name and number are included in the subject line for all emails. Please make sure emails are written in a professional manner, including complete sentences and do not use text language (I am not fluent in shorthand). Please address the email to John or Dr. Iacozza (not Buddy or any similar terms). Emails must be sent from University of Manitoba email accounts; emails from other accounts (such as gmail) will not be responded to. Emails will typically be responded to during regular office hours. You should not expect a response on weekends or in the evenings (i.e. after 4 pm).

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 **March 18, 2016**. Evaluative feedback will be provided prior to this date.

TESTING

Test and exam format will include multiple choice, true-false questions and/or short answer questions. These questions will be based on lectures, assigned readings and class discussion. There will be a midterm test (during class time) and a final exam in April during the exam period. In all tests/exams, no extraneous devices will be allowed (i.e. not dictionaries, cell phones, notes, textbooks, etc.). You will need to bring pencil/pen, an eraser, and a form of identification (Student ID card preferred).

If you miss the final exam due to illness or compassionate reasons, you **must** make arrangements with your own Faculty office.

ASSIGNMENTS

Five assignments will be distributed through the term. The assignments will focus on a specific module of the course.

Assignments must be submitted as a **SINGLE WORD DOCUMENT** and electronically through UMLearn (formally D2L). The course website is available for registered students at: umlearn.ca. Your login name and password are the same as your UMnetID. Documents **MUST** be labelled with the student name, student number and assignment number. Emailed assignments **WILL NOT** be accepted at any time for any reason and therefore will not be graded. If you are not familiar with this tool, please ask your instructor. Assignment grades will be posted on UMLearn.

Assignments must be handed in on time – by **12:30 pm on due date**. **Late assignments will be given a grade of 0** unless the student has obtained Instructor approval in advance of the deadline.

Reasons for granting an extension (assignment or midterm): a death in your immediate family, an illness in either yourself or in a dependent (requires written note from a doctor dated BEFORE the assignment is due), and required to travel for work. The Instructor will not accept a note dated **AFTER** the due date. If permission is granted to miss the midterm, it will be written on **February 29, 2016 @ 9 -9:50 am**.

Reasons for not granting an extension: having another assignment or midterm due at a similar time/day, being away from the university for a personal reason (i.e. holiday or personal vacation), being too busy with other course work (i.e. having a midterm that same day or week), not attending the lectures due to personal or compassionate reasons (or other reasons), car broke down and could not submit assignment on time, computer is not working properly and you lost the assignment, or any other reason deemed inappropriate by the instructor. This is not an exhaustive list. Please don't ask for an extension if any of these or similar reasons apply. If you know that you will be away, you **MUST** submit the assignment before the due date.

SPECIAL NEEDS

Students with disability-related needs or are experiencing difficulty should discuss issues with a councillor in one of the following Student Affairs offices as soon as possible. You can also discuss any issues with your instructor, who can direct you to appropriate institutional resources.

- Student Accessibility Services: 155 University Center, 204-474-6213, 204-474-9790 (TTY)
- Learning Assistance Center: 201 Tier Building, 204-480-1481
- Student Counselling and Career Centre: 474 University Center, 204-474-8592

GEOG 3390 – INTRODUCTION TO CLIMATE CHANGE AND IT'S CAUSES

COURSE OUTLINE - WINTER 2015

COURSE SCHEDULE

LECTURE TOPIC		READINGS
Introduction	Introduction to Course	pp. 8-10; 288-291
Review of Energy System	Review Energy Balance	pp. 2-8; 11-34
	Greenhouse effect	
	Feedbacks and biogeochemical cycles	
Future Climate Change in Context	Highlights of past climate change	pp. 93-111; 213-227; 231-260
	Abrupt climate change – cases and evidence	
	Mechanisms of climate change	
Current Climate Change Observations	Temperature and precipitation observations	pp. 261-268; 270-287; 294-301
	Other atmospheric observations	
	Relationship to Earth's system	
Forcing Factors	Terrestrial factors	pp. 154-198; 200-211
	Atmospheric factors	
	Cryospheric factors	
	Astronomical factors	
	Anthropogenic factors	
Future Climate Change	Global and regional climate models	pp. 303-319; 321-336
	Hindcasting and future-casting models	

TENTATIVE DATES (please note that the dates may change)

ASSIGNMENT	DATE
Assignment #1	January 25, 2016
Assignment #2	February 25, 2016
Assignment #3	March 7, 2016
Assignment #4	March 21, 2016
Assignment #5	April 4, 2016

TEST	DATE
Midterm	February 26, 2016
Final Exam	Scheduled through SRO