



## Contemporary Climate Science

NSC 140.I50

WN 2021 / (3/15/21-5/1/2021)

**Number of Credits:** 3

**Office:** JM 234B (central campus)

**Days Class Meets:** Online

**Contact Phone:** 734.408.1377

**Meeting Times:** Online

**Contact Email:** ottmark@jccmi.edu

**Location:** Online

**Office and Online Hours:** TBA

**Instructor:** Mark Ott, Ph.D.

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### Course Description

This interdisciplinary and interactive course is designed to foster an interest in global environmental issues by informing the student of both the anthropogenic and natural causes for climate change. While focusing on the scientific aspects of climate change, a broader study will include issues pertaining to global policy and economics in order to engage the student in public policy debates.

### Prerequisite(s)

none

### Course Goals

#### How to succeed in this course:

With this course fully online, it will require specific skills and effort, some of which will be different from a face-to-face course. Below is a listing of what you should be doing each week to be successful.

--Plan to spend at minimum 5 hours a week reading the text and reviewing ancillary material online. Each section of the course will contain multiple sources of information to read along with posted lectures on our Jetnet page.

--Check your email and our class JetNet page as often as possible, ideally at least once a day. Your classmates and I will be posting things in the discussion forums. In addition, I will also post announcements and video updates frequently.

--Do not get behind. There is a proposed personal schedule on the JetNet page to keep you on track.

## Course Objectives

Following the completion of this course, students will be able to:

1. Understand and describe the physical basis of climate change
2. Identify and explain global symptoms of climate change
3. Understand and describe contemporary climate issues;
4. Examine the effects of human activities on climate;
5. Understand why developing solutions to climate problems requires knowledge of scientific facts while at the same time accounting for cultural, social and economic considerations;
6. Think critically about climate science and how decisions about carbon emissions and other human activities might impact future climate;
7. Identify and apply research ethics and unbiased assessment in gathering and reporting scientific data.
8. Recognize the political debate and how can be influenced by scientific information.

The course goals and objectives incorporate specific General Education Outcomes (GEOs) established by the JC Board of Trustees, administration, and faculty. These goals are in concert with four-year colleges and universities and reflect input from the professional communities we serve. GEOs guarantee students achieve goals necessary for graduation credit, transferability, and professional skills needed in many certification programs. The GEOs and course objectives addressed in this class include the following: GEO 4-Demonstrate scientific reasoning.

## Textbook

Text: Introduction to Modern Climate Change by Andrew Dressler (2nd edition). The textbook is available in both electronic and printed versions. ISBN- 978-1-107-48067-4

- **Text Book Zero!** *This text is available in a digital format. Please see the links posted on our class Jet Net site. This text is available to rent or purchase in digital format through the JC Bookstore.*

Other: No additional materials are required, but due to the nature of the course, regular computer and internet access will be essential for successful completion of the course.

## Grading Procedure

**Note:** Problems with internet access do not constitute an acceptable excuse for missing the deadline of an assignment, so do not wait until the last few hours before the deadline to complete any one assignment. Be sure that your responses are all in your own words, material that is directly copied and pasted from other sources will not be counted for credit.

Your grade in the course will be based on:

### **Discussion posts- (7sets\*25=175 pts total, ~30% of overall grade)**

For each module you have between 2-4 questions to answer in a discussion post. In addition, you will need to respond to at least 2 classmates for each question. Posts need to contribute new information or perspective to be considered substantive and receive full credit. Posts such as, "I agree, great idea" will not receive credit. Each response on the discussion boards will be scored out of 5 points. Follow up

comments will be worth 2.5 points each. Due to the interactive nature of the discussion posts, these will not be counted for credit following the due date.

**Homework assignments- (6x25=150 pts total, ~25% of overall grade)**

For most modules we will have a case study and/or homework assignment that are used as an example to highlight important aspects of your readings in the text. You will be required to answer questions or review related websites and upload your responses. These assignments can be submitted up to one week after the due date, with a late penalty of 50% deducted from the total possible points.

**End of module quizzes- (6x30=240 pts total, ~40% of overall grade)**

After each of the modules we will have a quiz, featuring a mix of multiple choice, short answer and longer answer questions. This quiz will be timed and assess your understanding of the material that we have covered. Questions for the quiz will come from assigned readings in the text and lecture material. Any activities or websites included in the material are also fair game to be included on the quiz.

**Final Writing assignment- (60 pts, ~10% of overall grade)**

There will be a writing assignment that will need to be completed and uploaded to our Jetnet page. An outline is provided below, specific requirements will be provided once class has begun.

**Two Letters to Political Leaders**

Two letters will be written, one to the students US Congressman or Senator, the other to a local official (county level or smaller) Each letter will include detailed suggestions for reasonable actionable items with appropriate scientific background and explanation. More details will be given in class.

## Grading Scale

GPA	GRADE RANGE
4.0	92.00-100%
3.5	87.00-91.99%
3.0	82.00-86.99%
2.5	77.00-81.99%
2.0	70.00-76.99%
1.5	65.00-69.99%
1.0	60.00-65.99%
0.0	0-59.99%

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## **Failure**

Due to the interactive and fully online nature of the course, regular access to the course is required. Any student who fails to access the course for 7 days without notice to the instructor will be removed from the course.

## **Academic Honesty Policy**

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

**Plagiarism is defined as the failure to give credit for the use of material from outside sources.**

**Plagiarism includes but is not limited to:**

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

**Cheating is defined as obtaining answers/material from an outside source without authorization.**

**Cheating includes, but is not limited to:**

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical
- Allowing your work to be submitted by others

## **Course Management**

### **Incompletes**

Consistent with JC Policy, an incomplete grade will only be issued if the student has completed the vast majority of the course, is already passing the course after the withdraw deadline, and is unable to complete the course due to an extenuating circumstances. If an incomplete is issued, all grades/scores earned to that date will be used in calculating the course grade.

## Help

Available learning services or opportunities for students seeking help with their course work. May include information about tutors, learning centers, reserved library materials, open labs, counseling services.

It is important to contact a Center for Student Success professional prior to the start of the semester in order to receive accommodations in a timely manner. While we will make every effort to coordinate accommodations in a timely manner, failure to self-identify prior to the start of the semester may delay notification to instructors and timeliness of acquiring accommodations. Accommodations do not automatically carry over to the next semester.

<https://www.jccmi.edu/center-for-student-success/accommodations-for-students-with-disabilities/>

## Calendar

### Syllabus Revisions/Changes

All schedules and policies contained in this document are tentative and are subject to revision at the instructor's discretion with timely notice.

### Course Outline

The course will be divided into 7 modules, one for each week of the course. The design of the online course is such that you cannot move ahead until you complete earlier assignments. This is meant so as to not overwhelm you in the beginning. A schedule that lists when everything is due is available on the JetNet page. Do not wait until the last minute to complete the assignments. Details on what is covered for each module are outlined below.

## Week/Module 1: Course and Content Introduction

**Text chapters:** Chapter 1

**Topics covered:** Defining weather, climate, and climate change. IPCC and it's role. Scientists: who they are and why we listen

## Week/Module 2: Climate has Changed

**Text chapters:** Chapter 2

**Topics covered:** We look at ancient climate as well as more recent climate data.

## Week/Module 3: The Carbon-Atmosphere Relationship

**Text chapters:** Chapter 3, 4, and 5

**Topics covered:** Learn about the mathematics used in understanding and predicting climate Relationship between energy from the sun impacting the Earth, and the heat energy released by the Earth. Greenhouse gases and the cycle of life and its relationship to CO<sub>2</sub> in the atmosphere

## **Week/Module 4: What is Changing the Climate?**

**Text chapters:** Chapter 6 and 7

**Topics covered:** Explore the relationships between various aspects of climate and their interconnectedness.

## **Week/Module 5: What's going to Happen?**

**Text chapters:** Chapter 8, 9

**Topics covered:** Using simple models, begin predicting future impacts on the environment and the severity of interconnectedness.

## **Week/Module 6: What can We Do?**

**Text chapters:** Chapters 11 & 12

**Topics covered:** Introduction to recent social history of climate change and initial efforts to reduce effects of anthropogenic climate change

## **Week/Module 7: Difficult Conversations**

**Text chapters:** Chapter 13, 14

**Topics covered:** The difficult relationship between politics and economics with changing climate. We also begin to see the connections between decisions people and governments have made and their climate impacts. Also, based on all the information presented, we try to come up with an effective and plausible possible solutions for society.

### **Important Dates: WN(2) 2021**

<b>DATE</b>	<b>EVENT</b>
MAR 15, 2021	FIRST DAY OF CLASS
APR 30, 2021	LAST DAY OF CLASS

## **Attendance Policy**

In compliance with Federal Title IV funding requirements, as well as college initiatives, reporting of student participation in classes will occur throughout the semester. Instructors will report student attendance at least weekly within JetStream. If you must miss a class session, contact the instructor, but realize that you are responsible for learning all material covered that day on your own. Students identified as no longer participating – at any point in the semester – will be dropped or administratively withdrawn from the class.

## **Caveat**

As special events or topics arise in public health throughout the semester, some revisions may be necessary to the course. In the event of unforeseen circumstances, such as disruptions in access to jetnet, you will be notified by email.