

## Geology 130: Climate and Weather

Spring 2018/Imperial Valley College

Kevin Marty

Climate and Weather is an entry level course on principles and concepts of science relevant to meteorology and climate.

<---- See Sidebar for Modules, Assignments, Announcements, Quizzes and other links

Hello and welcome to Geology 130 (Climate and Weather Science). Below is the syllabus that outlines what this course is about and how we will cover the course material during this semester (along with other important information). Once you have reviewed the syllabus, please go to the modules section of Canvas and read through other important information regarding this course, and get started on your assignments when you are ready.

**Basic Course Information**

<b>Semester</b>	Spring 2018	<b>Instructor Name</b>	Kevin Marty
<b>Course Title &amp; #</b>	Geology 130: Climate and Weather	<b>Email</b>	<a href="mailto:kevin.marty@imperial.edu">kevin.marty@imperial.edu</a>
<b>CRN #</b>	20794	<b>Webpage (optional)</b>	
<b>Room</b>	Online	<b>Office</b>	2776
<b>Class Dates</b>	February 12 -June 8, 2018	<b>Office Hours</b>	TBD
<b>Class Days</b>	Online	<b>Office Phone #</b>	760-355-5761
<b>Class Times</b> <b>Units</b>	Online 3	<b>Office contact if student will be out or emergency</b>	Ofelia Duarte (Science Dept) at 760-355-6155

**Course Description**

This course will engage the student in learning the key concepts and scientific principles of Climate and Weather Science by analyzing interactions among and between Earth's Systems as matter and energy are continuously exchanged, and the influence from our position in the Solar System and Universe. We will examine the processes that occur in our atmosphere and hydrosphere, and how these processes create Earth's climate and weather. We must also consider how the Earth (geosphere) and its inhabitants (biosphere) have changed through time, how humans interact with weather and climate systems, and strategies to counter negative impacts to global climate change.

This course is intended for both science majors and non-science majors taking their first course in atmospheric science. One overriding goal of the textbook used in this course is to bridge the gap between abstract explanatory processes and the expression of those processes in everyday events- so that students with little or no science background will be able to build a non-mathematical understanding of the atmosphere.

(C-ID GEOL 130) (CSU, UC)

### Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

1. Gain critical thinking skills utilizing scientific methodology as problem-solving techniques while working on and completing weekly homework assignments which include Google Earth applications, short essays, and video analysis. (ILO2)
2. Gain awareness of weather and climate patterns and events on a global scale and understand/evaluate why events/processes occur where they do. (ILO5)
3. Analyze and use web-based resources in science learning (ILO1, ILO2, ILO4)
4. Use the vocabulary and concepts of climate and weather science to describe and consider local and global issues (ILO1, ILO4, ILO5)

### Course Objectives

Upon satisfactory completion of the course, students will be able to:

1. Comprehend key concepts, developments, and reasoning strategies used in studying climate and weather such that they are able to analyze and solve problems in open-ended, inquiry environments using materials, maps, data collection tools, models and computer simulations, other class activities and discussions, and background readings.
2. Relate and evaluate the study of the climate and weather to contemporary, historical, technological and societal issues.

3. Demonstrate the ability to analyze and use web-based resources in climate and weather science learning.
4. Exhibit skills in utilizing scientific methodology as a problem-solving technique to learn key concepts of atmospheric science.
5. Demonstrate knowledge of climate and weather science vocabulary and concepts to describe local issues within a global context.
6. Reflect upon the nature and practice of climate and weather science as a process rather than a body of disconnected facts to be memorized.
7. Demonstrate skills in analyzing the factors which might affect the climate and weather of the future and to understand what ramifications on the lives of people these changes might have.

### Textbooks & Other Resources or Links

The seventh (7th) edition of "Understanding Weather and Climate" by Aguado and Burt. Published by Pearson Education, Inc., 2015.

***Two choices for purchase including access to Mastering Meteorology.***

1. Understanding Weather and Climate Plus Mastering Meteorology with eText,

**ISBN: 0-133-99878-9/978-0-133-99878-8**

includes print book, eBook and access to Mastering Meteorology

2. Understanding Weather and Climate CourseSmart eTextbook

**ISBN: 0-321-99849-9/978-0-321-99849-1**

includes eBook only and access to Mastering Meteorology

### Course Requirements and Instructional Methods

Course Philosophy and Teaching Method: The subject of Atmospheric Science is as vast and diverse as the natural world around us. Together, we will explore and visualize this dynamic world in a number of ways; in no way will it be a static collection of facts. Accordingly, we will concentrate on understanding natural processes and how we explore and learn things about our planet and its weather and climate, rather than terms and factual trivia. We will concentrate on active, inquiry-based learning and will learn how to observe, think about, and understand our place in the natural environment. The critical inquiry and observational skills that we cultivate this semester should be useful in any profession, since they give you an appreciation of how climate processes in our natural world impact our environment and society.

Course Expectations: My role in this class is to provide a framework that includes theory, best practices, activities, and assignments for you to utilize in the development of your knowledge, understanding, and skills. I care very much how and what you learn in this class, but I believe that you are responsible for participating in learning from the activities provided. This class requires significant preparation and reading.

### Course Grading Based on Course Objectives

Grades: In this course, your grade will be based on points that you earn. There are approximately 660 possible points, which are outlined below:

Point Distribution Summary*	Points
Course Project: Natural Disaster Tracking (current weather disasters)	~120
MyLab and Mastering Assignments (~16 @ 17.5 points)	~280
Bi-Weekly Discussion Boards (generally every two-three weeks)	~60
Mid-term and Final Tests	200
Total Points Possible	~660

#### MyLab and Mastering Assignments:

Please see first announcement on how to purchase your eBook; the textbook information can also be found under the heading "Textbooks & Other Resources or Links" above.

Once you have purchased the eBook and access to Pearson's website you will find weekly assignments by working through the Modules or clicking on the "MyLab and Mastering" link in the column to the left.

For each chapter an assignment through Pearson's MyLab and Mastering Meteorology program is required to aid you in understanding the material. These assignments utilize a variety of methods (such as videos, animations, short answer) to help you understand various concepts/processes and features of weather and climate. These assignments consist of 35 questions from a question pool and have no time limit (but are not accepted after the due dates). Questions on your mid-term and final tests can be drawn from these assignments.

**Please note: these assignments are a significant part of your grade and are not accepted after the due dates. While working through the assignments, you will not be able to see the "correct" answer for questions you answered incorrectly until after the due date (and cannot see your assignment "score" until after the assignment is submitted). Therefore, DO NOT click on the "request answer"**

**option, found with most if not all assignment problems, or you will be marked complete for that question without providing an answer (and will see a note "answer withheld by instructor").**

### **Bi-Weekly Discussion Boards: Initial Posts and Response Posts**

Generally, every two-three weeks you are expected to participate in discussion boards (submit a post) over a topic posed by your instructor. These may not have a right or wrong answer (subjective) but draw on your ability to research topics and formulate responses, sometimes opinions, that are supported by your research (when you state ideas/opinions support your statements with evidence or data, for example). Be thorough and concise in your posts (meaning, keep your discussion relevant, staying on topic, but not too brief; generally your responses should be 2-3 paragraphs to address the topics). Some of the discussion boards require a response post to at least one of your classmate's posts. Your initial posts are generally due on Day 5 (but if no response post is required, then on Day 7) and if there is a response post, it is due on Day 7.

### **Course Project: (Weather-related) Natural Disaster Tracking**

Beginning during Lesson (or Week) 3, you are required to track current natural disasters related to severe weather events. These must be natural disasters (not those created by us such as oil spills or mine collapses) and to qualify as a disaster the event must affect people (not all events, such as tornado outbreaks, are natural disasters if there is no economic loss or injuries/fatalities- in other words, then must affect people in some way). The tracking assignment has three parts (see guidelines found under Module 3 and also attached to a recent announcement) and the first part consists of weekly students submissions of one weather-related disaster (they must be current and occur during the week the submission is due). After 12 consecutive weeks of tracking, part's 2 and 3 are due. Under Module 3 (and provided in a recent announcement) a printable map can be downloaded and printed (with latitude and longitude marks) to plot each of your disasters (provide a legend or map key with a brief description of each plot such as location and disaster type). See guidelines for more. This assignment is worth approximately 120 points.

### **Mid-term and Final Tests**

We are covering one chapter/week (or 16 total chapters). After you have completed lessons on chapter's 1-8 (please note chapter's 6 and 7 are completed together during one week) your midterm is assigned over a 1 week period (April 2-8)...this test is timed and you have until 11:59 pm on April 8 to take and submit it (this gives you time to review/study for the test and take it when you are ready)...; the tests will consist of multiple choice/fill-in-the-blank type sections and an essay sections and are NOT available after the due dates, so allow yourself plenty of time to begin and finish the test before the due dates/times. The final test is given at the end of the year (during final's week) over chapter's 9-16 with similar requirements as the mid-term test.

### **Due Dates:**

The above assignments have specifically defined due dates as noted in the Course Schedule later on in this syllabus. It is your responsibility to consult the Course Schedule (if applicable) for all weekly tasks and due dates. The instructor will not assume the responsibility of reminding you that an assignment is due or that a quiz, for example, will be given.

### **Score/Grade Posting:**

All scores will be posted on Canvas. You have 7 days after a score has been posted to dispute an entry. After the 7-day period, the score stands as entered. Do not wait until the end of the semester to check your scores. Grades are not assigned by a “curve”, where a certain percent is assigned “A”, “B”, etc. Instead, you are competing against my expectations, not your classmates, and there is no predetermined percentage of “A”, “B”, and “C”. The exact division between letter grades will not be determined until the final points are totaled, but the grade breaks will not be raised above typical values (e.g., the A-B grade break will be 90% or lower, etc.). No items are weighted—your grade is based solely on total points received.

### **Dates for Withdrawals:**

There is a course withdrawal deadline—check the college calendar to find the course withdrawal deadline for this semester. The course withdrawal deadline is a no-tolerance policy. When the withdrawal period ends, students only have one option – a grade of F for the course.

### **Incomplete Grade:**

A mark of “I” is given only when a student who is otherwise doing acceptable work is unable to complete a course because of an illness or other situation beyond the student’s control. The student is required to arrange for the completion of the course requirements with the instructor. The university does not allow instructors to assign a grade of “I” simply because a student has quit attending classes and/or completing assignments.

### **Attendance**

- A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class (does not apply to special circumstances). Should readmission be desired, the student’s status will be the same as that of any other student who desires to add a class. It is the student’s responsibility to drop or officially withdraw from the class. See General Catalog for details.
- Regular attendance in all classes is expected of all students. A student whose continuous, unexcused absences exceed the number of hours the class is scheduled to meet per week may be dropped. For online courses, students who fail to complete required activities for two consecutive weeks may be considered to have excessive absences and may be dropped.
- Absences attributed to the representation of the college at officially approved events (conferences, contests, and field trips) will be counted as ‘excused’ absences.

### **Classroom Netiquette**

- What is netiquette? Netiquette is internet manners, online etiquette, and digital etiquette all rolled into one word.
- Netiquette rules to remember: (1) identify yourself, (2) include a subject line, (3) avoid sarcasm, (4) respect others’ opinions and privacy, (5) acknowledge and return messages promptly, (6) copy with caution, (7) do not spam or junk mail, (8) be concise, (9) use appropriate language, (10) use appropriate emoticons (emotional icons) to help convey meaning, and (11) use appropriate intensifiers to help convey meaning [do not use ALL CAPS or multiple exclamation marks (!!!!)].

### **Academic Honesty**

- Plagiarism is taking and presenting as one's own the writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to 'cite a source' correctly, you must ask for help.
- Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.
- Anyone caught cheating or will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the General School Catalog for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

#### Additional Help – Discretionary Section and Language

Help Along The Way: Many students enter this class with a bit of anxiety. Other students may have various disabilities, including test anxiety, which may make traditional classroom environments very difficult. Don't worry, almost all such students before you have passed this course – many with very high grades! The success of many of these students, though, was in part because they attended class regularly, took advantage of my office hours, or obtained help from their peers. If you are having difficulty understanding the course work, please contact me immediately. Also, the college has learning centers, disability resource centers, and counseling centers to address the various needs of students. (see examples next):

- Learning Labs: There are several 'labs' on campus to assist you through the use of computers, tutors, or a combination. Please consult your college map for the Math Lab, Reading & Writing Lab, and Study Skills Center (library). Please speak to the instructor about labs unique to your specific program.
- Library Services: There is more to our library than just books. You have access to tutors in the Study Skills Center, study rooms for small groups, and online access to a wealth of resources.

#### Disabled Student Programs and Services (DSPS)

Any student with a documented disability who may need educational accommodations should notify the instructor or the Disabled Student Programs and Services (DSP&S) office as soon as possible. The DSP&S office is located in Building 2100, telephone 760-355-6313, if you feel you need to be evaluated for educational accommodations.

#### Student Counseling and Health Services

Students have counseling and health services available, provided by the pre-paid Student Health Fee. We now also have a fulltime mental health counselor. For information see <http://www.imperial.edu/students/student-health-center/>. The IVC Student Health Center is located in the Health Science building in Room 2109, telephone 760-355-6310.

### Student Rights and Responsibilities

Students have the right to experience a positive learning environment and due process. For further information regarding student rights and responsibilities, please refer to the IVC General Catalog available online at [http://www.imperial.edu/index.php?option=com\\_docman&task=doc\\_download&gid=4516&Itemid=762](http://www.imperial.edu/index.php?option=com_docman&task=doc_download&gid=4516&Itemid=762)

### Information Literacy

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. Students can access tutorials at <http://www.imperial.edu/courses-and-programs/divisions/arts-and-letters/library-department/info-lit-tutorials/>

### Anticipated Class Schedule / Calendar

#### Course Schedule for Geol 130: Climate Studies, Spring 2018

\*All due dates and distribution of grade points is subject to change according to class needs.

Week of	Topic/Lecture/Test	Readings
Feb 12-18	Chapter 1: Composition and Structure of the Atmosphere Introduction to course; Get your textbook (ebook and access to Mastering Meteorology site). Posts: introductory and scientific method Mastering Meteorology Assignment Ch 1	Chapter 1
Feb 19-25	Chapter 2: Solar Radiation and the Seasons Mastering Meteorology Assignment Ch 2	Chapter 2
Feb 26-Mar 4	Chapter 3: Energy Balance and Temperature No post this week Mastering Meteorology Assignment Ch 3	Chapter 3

	Natural Disaster Tracking DUE Sunday nights	
Mar 5-11	Chapter 4: Atmospheric Pressure and Wind Media Post Mastering Meteorology Assignment Ch 4 Natural Disaster Tracking DUE Sunday nights	Chapter 4
Mar 12-18	Chapter 5: Atmospheric Moisture No post this week Mastering Meteorology Assignment Ch 5 Natural Disaster Tracking DUE Sunday nights	Chapter 5
Mar 19-25	Chapter 6: Cloud Development and Forms Chapter 7: Precipitation Processes No post this week Mastering Meteorology Assignment Ch 6 and 7 Natural Disaster Tracking DUE Sunday nights	Chapter's 6 and 7
Mar 26-Apr 1	Chapter 8: Atmospheric Circulation and Pressure Distributions Disaster Post Mastering Meteorology Assignment Ch 8 Natural Disaster Tracking DUE Sunday nights	Chapter 8
Apr 2-8	Spring Break : Mid-Term Test Due day 7 Natural Disaster Tracking DUE Sunday nights	Spring Break Mid-Term Test
Apr 9-15	Chapter 9: Air Masses and Fronts Mastering Meteorology Assignment Ch 9 Natural Disaster Tracking DUE Sunday nights	Chapter 9
Apr 16-22	Chapter 10: Midlatitude Cyclones	Chapter 10

	Mastering Meteorology Assignment Ch 10 Natural Disaster Tracking DUE Sunday nights	
Apr 23-29	Chapter 11: Lightning, Thunder and Tornadoes Mastering Meteorology Assignment Ch 11 Natural Disaster Tracking DUE Sunday nights	Chapter 11
Apr 30-May 6	Chapter 12: Tropical Storms and Hurricanes Mastering Meteorology Assignment Ch 12 Natural Disaster Tracking DUE Sunday nights	Chapter 12
May 7-13	Chapter 13: Weather Forecasting and Analysis Mastering Meteorology Assignment Ch 13 Natural Disaster Tracking DUE Sunday nights	Chapter 13
May 14-20	Chapter 14: Human Effects on the Atmosphere Mastering Meteorology Assignment Ch 14 Natural Disaster Tracking DUE Sunday nights	Chapter 14
May 21-27	Chapter 15: Earth's Climates Mastering Meteorology Assignment Ch 15	Chapter 15
May 28-June 3	Chapter 16: Climate Changes: Past and Future Mastering Meteorology Assignment Ch 16 Natural Disaster Tracking Assignment Due (Day 3)	Chapter 16
June 4-8	<b>Final's Week : Final Test</b>	<b>Final's Week</b>
<b>Enjoy</b>	<b>Your</b>	<b>Break</b>

