

METEOROLOGY 10: Weather and Climate

Class website: <http://ggweather.com/met10/>

San José State University
Spring 2016

Section 5: 24383

Monday 18:00 – 21:00

Duncan Hall 515

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Office hours: M 17:00-17:45, or by appointment.

Scope and Prerequisites

This introductory general education (GE) course is designed to give students, both science and non-science majors, an overview of the nature of the earth's weather and climate, including temperatures, winds, storms, clouds, and precipitation. It will look at how and why weather changes, emphasizing the process of scientific discovery. Students will be exposed to the basic concepts and fundamental principles of the science of meteorology and how they combine into weather events that include thunderstorms, tornadoes, hurricanes, floods, climate change and drought often through weather map interpretation and weather forecasting. The lecturer's approach will be a descriptive one and does not presuppose (or require) any knowledge of science or mathematics.

Learning objectives

Specific learning objectives for this course include:

- To understand the fundamental processes responsible for the structure and evolution of the atmosphere!
- To understand the major physical mechanisms and uncertainties related to our changing climate (i.e. greenhouse warming, etc.)!
- To understand how the general circulation of the atmosphere influences local climates!
- To understand the basics of reading and interpreting weather maps and forecasts!

Textbook and Materials

Optional: Essentials of Meteorology: An Invitation to the Atmosphere (5th, 6th or 7th edition). C. Donald Ahrens, Cengage Learning.

Lectures

The format of the lectures generally will be via PowerPoint slides with occasional in-class videos or exercises. The lectures will be available for download, in PowerPoint format, on the course website (<http://ggweather.com/met10/>) **after** each class.

Very Important Note: A LOT OF MATERIAL IS COVERED. It is very important to keep up by attending ALL class sessions and by keeping up on course materials as many concepts build on accumulated knowledge.

Resources:

Reading assignments from the textbook should be done before each lecture. Lectures will complement the reading assignments, and will contain some material and activities not found in the text. There is also a free peer-tutoring program offered by the Department of Meteorology. Stop by the department office for more details.

Assessment

Assessment is designed to determine how well students have achieved the goals of the learning objectives and thus form an important component to the course. Each student will be assessed from a combination of assignments, exams and research project. Assignments will include both in-class and take home components and will include problems and written responses. There will be two midterm exams and a final exam. The final exam is comprehensive.

Homework/Classwork	10 or 20 pts each	~200 pts
Midterms	2 @ 100 pts each	~200 pts
Term Paper		~200 pts
FINAL EXAM	100 pts on last 1/3 of course 100 pts comprehensive	~200 pts
	Course total:	~800 Pts

** Extra Credit: 2nd Term Paper (100 points max)

Guidelines the same as a Term Paper (below)

Assignments will NOT be accepted via email unless specifically requested by the instructor.

Late assignments will NOT be accepted. Arrangements for missing a midterm due to medical reasons (a medical certificate will be required) will need to be arranged privately. However, this does not apply to the Final Exam.

Grading

Grade	Percentage
A	92 - 100 %
A -	90 - 91 %
B +	88 - 89 %
B	82 - 87 %
B -	80 - 81 %
C +	78 - 79 %
C	72 - 77 %
C -	70 - 71 %
D +	68 - 69 %
D	62 - 67 %
D -	60 - 61 %
F	< 60 %

Assignments (in-class and homework)

Assignments will be given throughout the duration of the course. These will consist of a number of different activities that will either be completed in class, or as a take home, turned in at the beginning of the next class.

Writing and Plagiarism

Writing is an extremely important component to any subject knowledge as it communicates that knowledge to other people. Through the use of the internet, plagiarism has become an increasing problem on college campuses. Although it may seem amazing to you, some students believe that completing their homework requires scanning the internet (i.e. Google it), finding the answer and then cutting and pasting their answer into a word file with their name at the top. This is certainly *not* acceptable. This is one example of plagiarism and is considered unethical behavior at this university. SJSU is a learning institution where the goal is to develop freethinking students who can analyze new concepts and develop their own ideas and opinions. In order to discourage plagiarism, the course will adopt a zero tolerance approach. If submitted work is found to be plagiarized, the student (or students) overall grade will be lowered by 30% and their case will be submitted to the university judicial board for review.

Plagiarism: *When you assume credit for something that someone else has written, that is stealing at this University.*

Academic integrity statement from Office of Student Conduct and Ethical Development: "Your own commitment to learning, as evidenced by your enrollment at San José State University, and the University's Academic Integrity Policy requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the Office of Judicial Affairs. The policy on academic integrity can be found at

<http://www.sjsu.edu/getinvolved/docs/Student%20Conduct%20Code.pdf>

Campus policy in compliance with the Americans with Disabilities Act:

If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with DRC to establish a record of their disability.

Incompletes:

An "incomplete" will be given for the course **only** under the following conditions:

At least 60% of the course work has been completed **and** *unexpected* circumstances prevent the completion of the remaining work.

An incomplete will **not** be given to circumvent rules concerning the dropping of courses!

CLASSROOM ETIQUETTE

No cellphones or laptop computers:

The use of laptops, cell phones and tablets is *not* allowed, unless used specifically for note-taking. If you choose to do this, please sit in the back or along a side to lessen the distraction to others.

Punctuality, etc.:

Please make every effort to arrive *on time*. And please do not start making preparations to leave (e.g., closing notebooks) prior to the scheduled end of the class. Please inform me if you need to leave class early; try to take a seat near the exit of the classroom to avoid disruption of the class as you leave.

Research Paper (and Extra Credit Term Paper) Guidelines

- Choose a topic of personal interest related to Meteorology 10 coursework.
 - **Instructor approval of topic required**
 - **LIST OF POSSIBLE TOPICS (see class website)**
 - If you have any doubts please ask!
- **6 pages Minimum**
 - Typed, double-spaced, 1" margins, 12-point font
 - This does not include figures, charts, maps or the bibliography
- Scientific Paper Style - **ABSOLUTELY NO 1st PERSON. This is a science research paper.**
- Well-organized
- Properly documented
 - At least 4 CREDIBLE reference sources (only half may be Internet only source).
 - **ABSOLUTELY NO WIKIPEDIA.COM**
 - **Formats:**
- Grading: Maximum 200 points (maximum of 100 points for Extra Credit Paper)
 - Content - 150 points
 - Organization, Format - 30 points
 - Grammar, Style - 20 points

Examples of recent term papers that received "A" grades. [Example 1](#), [Example 2](#)

METEOROLOGY 10 - 05

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TENTATIVE SPRING 2016 SCHEDULE

Week	Date	Chapter	Topics	Additional Resources
1	Feb 1		Syllabus Term Paper Topics (Ex. 1, Ex. 2) Introduction	Glossary Weblinks
2	Feb 8	1	El Niño/La Niña Earth's Atmosphere Geog. 101	Geographic Regions 1, Regions 2, El Nino & La Nina Links
3	Feb 15	2	Warming the Earth & Atmosphere Weather Maps, Isopleths Remote Sensing	Energy Balance , Weather Maps Contouring , AMS Datastream , Satellites , Navy Sat. Training , Radar Tutorial , Radar Training
4	Feb 22	3 15	Air Temperature Heatstroke & Vehicles Atmospheric Optics	Heatstroke and Vehicles , Light & Optics Tutorial , Optics
5	Feb 29	4 5	Humidity, Condensation and Fog Clouds MIDTERM REVIEW #1	Hydrologic Balance , Hydrologic Cycle Clouds , Clouds Appreciation Society
6	Mar 7	MIDTERM #1	Chp 1-5, Isopleths, Maps, Heatstroke Term Paper Topics DUE	
7	Mar 14	5 6 7	Precipitation Air Pressure and Winds Atmospheric Circulations	Forces and Winds , Beaufort Scale ,
8	Mar 21	8 9	Air Masses, Fronts & Mid-Lat Cyclones Weather Forecasting MIDTERM REVIEW #2	Fronts & Air Masses
9	Mar 28		NO CLASS - SPRING RECESS	
10	Apr 4		NO CLASS "Earth: The Operator's Manual"	
11	Apr 11	MIDTERM #2	Chapters 6-9, 14, 15, El Nino, Remote Sensing, Term Paper Outlines DUE	
12	Apr 18	10	Thunderstorms Tornadoes	Thunderstorm/Tornado Links Enhanced Fujita Scale
13	Apr 25	11	Hurricanes and Tropical Storms	Hurricane/Tropical Storm Links
14	May 2	14 12	Air Pollution Climate Classifications	Air Quality Index
15	May 9		NO CLASS - HW - "Skeptical Science"	
16	May 16	13	Climate Change FINAL EXAM REVIEW TERM PAPERS DUE	AMS Climate Change Policy Statement California Climate Change Assessment
17	May 23	FINAL EXAM 6:00 pm	Chapters 10-13 + Previous EXTRA CREDIT PAPERS DUE	