

GEOG 102: WEATHER AND CLIMATE

Lecture: Monday/Wednesday/Friday 11:00-11:50am, Sackler 121
Lab: Monday (JC206) or Tuesday (JC204) 1:25-2:40pm

FALL 2015 SYLLABUS

- Instructor:** Dr. Prajjwal Panday, Jefferson Academic Center 105
Email: ppanday@clarku.edu; Phone: (508) 793-7584
Prof.'s Office Hours: Thursdays 11-12, Fridays 1-2
TAs (Office Hours): Yu Zhou (Thur 4-5, Mezzanine)
David Lukens (Fri 12:30-2, Mezzanine)
- Text:** *The Atmosphere: An Introduction to Meteorology*, 11th edition (or earlier), (2010)
Frederick K. Lutgens and Edward J. Tarbuck, Prentice Hall, Upper Saddle River, NJ, 508 pp., ISBN-10: 032-158733-2. [Other editions are acceptable but have some differences, particularly figure and table numbers.]
- Course Description:** Understanding controls of weather: insolation, evaporation, wind, and topography; the climates that result; and how they influence human activities. Students are also introduced to fundamentals of scientific inquiry and knowledge with exposure to observational methods, data analysis, and forecasting. Fulfills the Science Perspective. Upon completion of this course, students will:
- *Understand the essential physics underlying weather phenomena and how they influence the distribution of heat, moisture, and winds in the earth system.*
 - *Be able to read weather maps for independent assessment of atmospheric phenomena.*
 - *Be capable of analyzing controls on weather and climate in different environments.*
 - *Have the fundamental knowledge needed to critically evaluate projections of change in weather patterns and the climate system.*
 - *Have new appreciation for essential tools and terms used in the field of meteorology.*
- Prerequisites:** None.
- Student Responsibilities:** This course is worth four credit-hours and entails at least 180 hours of engaged academic time. Students taking this course are responsible for attending lectures (3 hours per week x 14 weeks), reading and studying assigned texts and lecture notes (4 hours per week), attending lab sessions and completing lab assignments (3 hours each x 10 sessions), completing homework assignments (2 hours each x 10), and preparing for and performing exams (10 hours each x 3). Final grades will be determined based on each of these elements as described below.
- Assignments & Evaluation:** In this course, assignments and evaluations are designed to test knowledge and understanding, build and apply skills, and foster analytical thinking. Assignments include readings, homework, and lab exercises. Evaluation of independent work includes homework, labs, and exams, each detailed below.

Homework (20%) assignments are frequent but short and are designed to reinforce concepts introduced in class as well as train practical skills of data analysis and display. They will generally be due one week following assignment and at the beginning of class unless otherwise noted. We will have 10 homework assignments. Each is worth 10 points toward your final grade (10 x 10 points = 100 points). Homework assignments MUST reflect your independent understanding though you are invited to work with others toward that understanding.

Labs (20%) involve team exercises that also reinforce concepts and train practical skills. Completed assignments will generally be due at the beginning of the following Lab session. We will have 10 lab assignments. Each is worth 10 points toward your final grade (10 x 10 points = 100 points). Attendance is mandatory. If a student misses a particular lab they will receive zero points on that exercise unless excused by the Professor because of special circumstances. Students are expected to attend the full Lab session and are not permitted to leave early.

Midterm Exams (2 @ 20% each) are closed book, closed note, in-class, independent exams and are not cumulative. Unless you have prior consent from the Professor, no exams may be taken at an alternate time. If you know you will not be available on one of those dates please contact me to discuss the possibility of arranging to take the exam early.

Final Exam (20%) is comprehensive of all material covered in the course's lecture and lab and will be performed in our regular lecture room adhering to the University-assigned schedule.

Evaluation Overview

Exams 1 & 2	40% (20% each)	200 points
Final Exam	20%	100 points
Homework	20%	100 points
Labs	20%	100 points
Total		500 points

Late

Policy: Late assignments will not be accepted for credit. Homework and lab assignments are due by the beginning of class/lab on specific due dates specified on the syllabus and/or announced when assigned.

Course

Website: Homework assignments, lecture slides, solutions, and any changes to the course outline will be posted to the course website on Moodle (<http://moodle.clarku.edu>).

Honor

Code: Clark University's policies of academic integrity apply to every aspect of this course. Please see www.clarku.edu/offices/aac/integrity.cfm if you have any questions about what this entails.

Special

Needs: Clark University is committed to providing students with documented disabilities equal access to all university programs and facilities. If you have or think you have a disability and require academic accommodations, you must register with Student Accessibility Services (SAS), which is located in room 430 on the fourth floor of the Goddard Library. If you have questions about the process, please contact The Director of Accessibility Services, Emily Tarconish, at etarconish@clarku.edu or (508)798-4368. If you are registered with SAS, and qualify for accommodations that you would like to utilize in this course, please request those accommodations through SAS in a timely manner.

WEEK	DATE	TOPIC	LABS	ASSIGNMENTS
1	8/24	Introduction to the Atmosphere	No Lab	Ch 1
	8/26			Ch 2
	8/28	Earth-Sun Relations		H1
2	8/31		Earth-Sun Relations	
	9/2	Insolation and Heating		
	9/4			H1 due, H2
3	9/7	NO CLASS		
	9/9		No Lab	Ch 3
	9/11	Temperature		Ch 4, H2 due, H3
4	9/14	Moisture and Atmospheric Stability	Atmos. Heat Budget	
	9/16			
	9/18		H3 due, H4	
5	9/21		Temperature Patterns	
	9/23			
	9/25			H4 due, Ch 5
6	9/28	Clouds, Fog, and Precipitation	Atmos. Moisture	
	9/30			
	10/2			
7	10/5		Atmos. Stability	
	10/7	Recap / Recitation		
	10/9	MIDTERM EXAM I		
8	10/12	NO CLASS	No Lab	
	10/14	Air Pressure and Winds		Ch 6, H5
	10/16			Ch 7
9	10/19	Circulation of the Atmosphere	Wind As Force Balance	
	10/21			
	10/23		H5 due, H6	
10	10/26		Gradient Winds & Westerlies	Ch 8
	10/28	Air masses		H6 due, H7
	10/30			Ch 15
	11/2	World Climates	Global Climatology	

This syllabus is subject to change, but I will inform you of all changes in class and on Moodle

11	11/4 11/6			H7 due, H8
12	11/9 11/11 11/13	Recap / Recitation MIDTERM EXAM II		H8 due
13	11/16 11/18 11/20	Weather Patterns	Mid-latitude Cyclone	Ch 9, H9 Ch 10, Ch 11
14	11/23 11/25 11/27	Weather Events: Thunderstorms, Tornadoes and Hurricanes <i>No class – Thanksgiving Recess</i> <i>No class – Thanksgiving Recess</i>	No Lab	H9 due, H10
15	11/30 12/2 12/4	Climate Change	Weather Maps	Ch 14 H10 due
16	12/7	Recap / Recitation	No Lab	
17	TBA	FINAL EXAM		

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