GPH 214 - Introduction to Meteorology I - Laboratory **Spring 2010**
Section: 23562 & **Honors Section:** 23564
Instructor: Lynn Newman **Office:** 05-137 **Phone:** (623) 845-3877

Class Meetings: Lab: MW 7:10 – 8:30 pm **HU 112**

Office Hours: M 3:00 pm – 4:00 pm; MW 4:00 pm – 5:00 pm (call first); or by appointment
email: **lynn.newman@gcmail.maricopa.edu** (← the best way to reach me)
Instructor's Website: **http://web.gccaz.edu/~lnewman/**

COURSE DESCRIPTION

This lab is designed to provide applications for many of the theories and principles presented in the lecture course GPH 212, Introduction of Meteorology I. Working through the exercises should enhance your understanding of those theories. The procedures used in the lab exercises are the same ones used later in Dynamic and Synoptic Meteorology to analyze weather maps and produce forecasts. The material should generally parallel the coursework in GPH 212 so the two courses reinforce each other.

REQUIRED MATERIALS

Carbone, Greg, 2010: Exercises for Weather and Climate. Seventh Ed., Prentice Hall.

* Always bring a **pencil** and **calculator** to class in addition to lab manual.

COURSE STRUCTURE AND REQUIREMENTS

LAB EXERCISES

Each week I will discuss the concepts and procedures for the lab exercise which is due the following week. This will enable you to work on the exercises on your own since there may not be enough time to complete them in the class. Once I have finished discussing the next lab, I will answer any questions regarding the lab which is due that day. You will have the remainder of the lab period to complete the lab which is due that day or the lab due the following week. If you have questions or need help outside of class, please let me know by leaving a message by email or during class. You are encouraged to work together in pairs or groups on the Lab Exercises. Be sure that you understand the concepts and procedures yourself. The exercises are designed to give you practice in solving problems both quantitatively and qualitatively. In general, labs will be returned the week following their due date. Late labs will be docked 10% (one grade) for ***class period*** that they are late.

PREREQUISITES

None, however, you must be currently enrolled in GPH 212 or have taken it prior to this semester. It is assumed that you have already been exposed to the metric system and that you have some basic mathematics skills in algebra and understand graphic analysis.

ATTENDANCE

Attendance is required. **You are permitted a maximum of two (2) absences**. Absences in excess of this will result in your being withdrawn from the course with a failing (Y) grade. Tardiness will be considered an absence and is strongly discouraged as it represents a disruption to the classroom learning environment. When circumstances compel a student to be either absent or late, it is expected that the instructor will be notified. It is your responsibility to drop the course if you intend to do so. *Do not rely on the instructor to drop you from the class.*

GRADES

Grades for GPH 214 are separate from the lecture course (GPH 212). They will be based 100% on the Lab Exercises.

The letter grades will be based on the following scale:

90 - 100% = A
80 - 89.9% = B
70 - 79.9% = C
60 - 69.9% = D
Below 60% = F

Do not plan on curving. If everyone scores 90% or above, you all receive an "A".

No incomplete grades will be given for the course.

Extra credit: There is one lab that can be done for extra credit. Lab Appendix C – Geoclock. It is worth up to five (5) points of extra credit. Otherwise there is no extra credit work is given to raise a grade. Keep up on assignments and if you fall behind, get help from the instructor.

OTHER ASSISTANCE

Web sites: The instructor maintains a web site to assist students and enhance the study of meteorology, climatology and geography in general. The following web address may be helpful: **http://web.gccaz.edu/~lnewman/**

CLASSROOM ETIQUETTE

All students are expected to assist in the maintenance of a learning conductive environment in the classroom. Students are expected to enter quietly when late or departing early. **Turn off all cellular phones, pagers**, and alarm watches and display courtesy towards each other. **No text messaging during class**. Please do not read newspapers or magazines during class, and refrain from conversations on topics other than class material while the instructor or your classmates are speaking. Also, the use of personal stereo equipment during class is forbidden. Students continually and habitually violating these rules are subject to dismissal from the class, which will result in an "F" for the class.

RECORDING LECTURES

Recording of lectures is not normally allowed. The instructor will consider special cases where recording is necessary or helpful to the student's successful acquisition of course material. Requests must be submitted in writing to the instructor no later than the end of the first week of class.

DISABLED STUDENT RESOURCES

Every reasonable effort will be made to accommodate students with limitations due to disability, including learning disabilities. Students who require special assistance and/or accommodations should consult the instructor. The Disabled Student Resources Center (623-845-3080), located in the TDS Bldg. can be of assistance.

Students agree to accept and comply with these requirements by choosing to remain enrolled after learning of these course conditions.

TENTATIVE LAB SCHEDULE

Note: I reserve the right to deviate from the course outline if it becomes necessary. You will be notified ahead of time if there are any changes. Due dates may be adjusted and will be announced in class.

Week of:	Lab Exercise for discussion:	Lab Exercise Due this day:
Jan. 20	Practice with Scientific Notation, Practice plotting station models #9 – Weather Map Analysis (pg. 90)	Practice exercises & Lab #9 (pg. 90) due Monday, 1/25
Jan. 25	Handout: Isoplething practice, #9 (pp. 91-96) #1 - Vertical Structure of the Atmosphere	Lab #9 (pp. 91-96) & Isoplething Practice due Wed, 1/27
Feb. 1	#2 - Earth-Sun Geometry	#1
Feb. 8	#3 - The Surface Energy Budget	#2
Feb. 15	Temperature Controls Exercise Handout – *print it out from Blackboard*	#3
Feb. 22	#5 - Atmospheric Moisture	Temp. Handout
Mar. 1	#6 – Saturation and Atmospheric Stability	#5
Mar. 8	#7 – Cloud Droplets and Raindrops	#6
Mar. 22	#8 – Atmospheric Motion	#7
Mar. 29	#9 - Weather Map Analysis (pp. 97-end)	#8
Apr. 5	#10 – Mid-Latitude Cyclones	#9
Apr. 12	#11 – Thunderstorms and Tornadoes	#10
Apr. 19	#12 – Hurricanes	#11
Apr. 26	#13 – Climate Controls	#12
May 3	#14 – Climate Classification	#13 & 14

Official Course Description: MCCCD Approval: 04/28/92

GPH214 19932-99999 LAB 1 Credit(s) 3 Period(s)

Introduction to Meteorology Laboratory I

Basic meteorological and climatological measurements. Prerequisites: None. Corequisites: GPH212.

MCCCD Official Course Competencies:

GPH214 19932-99999 Introduction to Meteorology Laboratory I

1. Describe the basic geographic features of the earth's surface. (I)
2. Examine the composition of the atmosphere and earth-Sun relations. (I)
3. Examine the origin and role of energy in the earth-atmosphere system. (II)
4. Examine temperature and humidity controls/phenomena. (II)
5. Apply field techniques for temperature and humidity measurements. (II)
6. Compare the relationships between vertical air motion, clouds, and precipitation. (III)
7. Describe the processes associated with horizontal air motion and the general circulation of the atmosphere. (III)
8. Examine the development of mid-latitude cyclones. (IV)
9. Analyze components of tropical cyclones/hurricanes. (IV)
10. Interpret weather maps and related forecasting techniques. (IV)
11. Identify types/origins of climatic data and regimes. (V)
12. Classify global climates. (V)
13. Examine urban and applied climatology. (VI)
14. Compare natural and anthropogenic factors responsible for climatic variability. (VII)