GPH 212 - Introduction to Meteorology I **Spring 2009**
Section: 19849 & **Honors Section:** 19850
Instructor: Lynn Newman **Office:** 05-137 **Phone:** (623) 845-3877

Class Meetings: Lecture: MW 5:45 – 7:00 pm **HU 112**

Office Hours: MW 3:00 pm – 5:00 pm; 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

Meteorology is the study of the atmosphere and in this course students will learn the concepts that aid in the understanding of the workings of the atmosphere. These ideas will be conveyed in a qualitative and quantitative manner. Students will leave the course with a comprehensive background in basic meteorology. Additional topics of interest include climate change, specifically those induced by human activities. As a part of the course, there will be the opportunity to use the Internet, exploring the various web sites related to meteorology and climatology.

REQUIRED MATERIALS

Text: ***Meteorology Today***, 9th Edition, C. Donald Ahrens, Brooks/Cole, Cengage Learning, Belmont, CA, 2009.

COURSE STRUCTURE AND REQUIREMENTS

TESTS

This course consists of lectures supplemented by textbook readings and out-of-class assignments. There will be four open book/open note tests which can include multiple-choice, fill-in, math, matching, identification, map analysis, problem solving, and short answer questions and will cover the material in the lecture and text. SCANTRON FORMS ARE REQUIRED for each examination. **Only one exam may be rescheduled for credit (not including Exam 4 – this is the final exam – no makeup for this exam)**. The missed examination must be completed *not later than seven calendar days* following the original examination date**. Cheating and plagiarism will be treated as academic misconduct** and will be dealt with as described in the current GCC Student Handbook. You may not use cell phone calculators or pda calculators during exams. These must be secured in your bookbag or under your chair.

ATTENDANCE

Attendance at each class period is expected and excessive absences (three or more missed classes) will result in your being withdrawn from the course (up to day 45). 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 in advance. I ***will not*** loan or make available my lecture notes. If it is necessary that you miss a lecture, please borrow the notes from a fellow student. If you miss class, handouts (not lectures notes) can be found in Blackboard. Make sure you have your Enterprise ID to get into Blackboard.

WITHDRAWAL POLICY

Please refer to the current GCC Student Handbook for withdrawal policies, procedures and dates. After the 45th day of the semester, if you do not follow the correct procedure for withdrawing, you will receive an "F", which can only be removed by retaking the course. 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*.

HONORS STUDENTS

Honor students will have an additional research paper to do for the semester (100 points). You may select any meteorological topic that interests you – check with me for my approval prior to beginning the paper. Your paper must reflect honors level research and go beyond my instructional materials in class and that found in your textbook. Your paper should have all the required parts: Introduction, background, results/discussion, and bibliography. Paper should be between **7-8 pages** of double-spaced, 12 point text (Times New Roman) with standard margins. You

should include tables, figures, illustrations where appropriate which can increase the length of the paper beyond 8 pages. Use a word processor! I do check writing skills, grammar and spelling**. Be sure to read the Honors Paper Handout for specific details and requirements.** Plagiarism is completely unacceptable and will lead to the most severe punishment allowed under Glendale Community College policy and as described in the current GCC Student Handbook. **Papers are due on Monday, April 20, 2009. No exceptions. Late papers will get a zero.**

GRADES

Grades for GPH 212 are separate from the lab course (GPH 214). Grades will be maintained in Blackboard for both courses in their respective sections. You will need your Enterprise ID to get into Blackboard. Grades will be based on the 4 exams and short additional exercises and a weather observation exercise. The breakdown is as follows:

Weather Observation Exercise	100
Other Exercises	19
Exam 1 ,2 ,3, 4	100 each
	519 points possible for Non-Honors students
Research Paper (Honors only)	**100**
	619 points possible for Honors students

You must get at least 60% of the total points to pass the class. There is no grading curve.
The grading breakdown is as follows and represent the percent correct of total points possible during the semester:

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

No incomplete grades will be given for the course.

Extra credit: There are **very few provisions for extra credit** work to raise a grade. Keep up on reading assignments and if you fall behind and have questions, get help from the instructor. Extra credit opportunities will be announced in class as the semester progresses.

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/**

Study Guides: Study guides for all examinations will be published on the instructor's web site and will **not** be given out in class.

CLASSROOM ETIQUETTE and ACADEMIC MISCONDUCT

All students are expected to assist in the maintenance of a learning conductive environment in the classroom.

- **TURN OFF CELLULAR PHONES**, pagers, pdas, mp3 players, alarm watches, and any other noise making battery powered or electronic device at the beginning of class. This includes the vibrate setting.
- ***ABSOLUTELY NO TEXT MESSAGING DURING CLASS.***
- Do not read newspapers/magazines or do other class work during lecture/lab.
- Refrain from conversations on topics other than class material while the instructor or your classmates are speaking.
- The use of personal stereo equipment, mp3 players, etc. during class is forbidden.
- **Cheating and plagiarism will be treated as academic misconduct** and will be dealt with as described in the current GCC Student Handbook
- Students are expected to expected to enter quietly when late or departing early
- Display courtesy towards each other

Students continually and habitually violating these rules are subject to dismissal from the class, which will result in an "F" grade for the course.

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 TDS-100 can be of assistance.

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

COURSE OUTLINE

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.

Date		Subject	Reading Assignment
Jan.	21	Reading Station Models, Observation Exercise	Handouts
	26	Intro/Weather & Climate, Cloud types	Ch. 1
	28	Atmospheric Composition and Vertical Structure	Ch. 1
Feb.	2	Energy, Temp, Heat, Heat Transfer	Ch. 2 (29-37)
	4	Earth-Sun Relationships, Radiation	Ch. 3 (57-65)
	9	Radiation, Energy Balance	Ch. 2 (37-end)
	11	Energy Balance, Air Temperature	Ch. 3 (65-end)
	16	**President's Day – No class**	
	18	**EXAM 1 (Ch. 1, 2, 3)**	
	23	Air Temperature cont.	Ch. 3 (65-end)
	25	Moisture and Humidity	Ch. 4
Mar.	2	Frost, Fog, Dew, Stability	Ch. 5, begin Ch. 6
	4	Atmospheric Stability	Ch. 6
	9	Stability and Cloud Development	Ch. 6
	11	Precipitation process and types	Ch. 7
		*****March 16 – 22 Spring Break – No Classes*****	
	23	Pressure, Horizontal Winds	Ch. 8
	25	**EXAM 2 (Ch. 4, 5, 6, 7)**	

	30	Upper Air Winds, Vertical Winds	Ch. 8
Apr.	1	Global Wind Systems	Ch. 10
	6	Local systems	Ch. 9
	8	Air Masses and Fronts	Ch. 11

*****Observation Exercises are due Monday, April 13, 2009 – no exceptions*****

	13	Mid-latitude Cyclones	Ch. 12
	15	Thunderstorms, Lightning, Tornadoes	Ch. 14

*****Honors Papers are due Monday, April 20, 2009 – no exceptions*****

	20	Severe Weather cont. / Hurricanes	Ch. 14, 15
	22	**EXAM 3 (Ch. 8, 9, 10, 11, 12)**	
	27	Global Climate / Climate Classification	Ch. 17
	29	Global Climate / Climate Classification	Ch. 17
May	4	Weather Forecasting	Ch. 13
	6	Weather Forecasting	Ch. 13

May 11 **EXAM 4 (FINAL EXAM): regular time and classroom**
Exam stresses: Ch. 13, 14, 15, and 17 + climate classification handout + any other extra topics

Official Course Description: MCCCD Approval: 11/28/95

GPH212 19962-99999 LEC 3 Credit(s) 3 Period(s)

Introduction to Meteorology I

Atmospheric processes and elements. General and local circulation, heat exchange and atmospheric moisture. Prerequisites: None.

MCCCD Official Course Competencies:

GPH212 19962-99999 Introduction to Meteorology I

1. Describe the face and form of the earth and its place in the solar system. (I,II)
2. Locate places on the earth using the geographic grid system. (III)
3. Explain the relationship between the earth and sun in regard to the length of days, seasons, time and solar energy. (IV)
4. Describe types, characteristics, and role of energy in the Earth/atmosphere system (V)
5. Identify and describe the basic weather elements of moisture, pressure and wind. (VI,VII)
6. List basic weather controls, and appraise the effects of these controls on the weather elements. (V-VII)
7. Describe middle latitude cyclones and explain their development. (VIII)
8. Identify and describe the major elements of weather forecasting. (IX)
9. Identify and describe major storm types. (X)
10. Display on a map the geographic pattern of temperature, pressure, wind, precipitation, and storms. (V-X)
11. Identify and describe classifications of world climate. (XI)
12. Identify and explain climate controls (XI,XII)
13. Display the world climate pattern on a world map. (XI)
14. Identify and describe natural and human factors influencing changes in climate. (XII)