

Physical Geography

GEO 2200 / Section 2287

Fall 2008

Instructor: Carlos M. Cañas

INTRODUCTION:

This is a study of some of the basic elements of the physical world in which climate, meteorology, and landforms are examined in terms of their natural occurrences, distribution and interrelationships. This class meets the General Education requirements of a Physical Science.

LECTURES:

Monday, Wednesday, and Friday. All three days during period 9 (4:05 – 4:55 pm).
Classroom location: CSE-E222 (Computer Science / Engineering, Room E 222).

OFFICE HOURS:

Monday, Wednesday, and Friday (5:00 – 6:00 pm) or by appointment.

Office location: **3124 Turlington Hall**.

My e-mail: cmcanas@ufl.edu (please use it sparingly, it is much better to come and see me).

EXAMINATIONS AND GRADES

All examinations will be held in the lecture room during lecture hours on the stated dates, except where explicitly stated. The two examinations will evaluate your knowledge of each of the two halves of the course, separately. The final examination will therefore only evaluate material presented in the second half of the course.

a) Two (2) tests each worth 15% of final grade.

#1 **Friday September 19th** (Material covered: August 25 – September 17).

#2 **Wednesday November 12th** (Material covered: October 22 – November 10).

These tests will consist of multiple choice questions.

b) Two (2) examinations each worth 35% of final grade:

#1 **Monday October 20th** (Material covered: August 25 – October 17).

#2 **Friday December 19, 7:30 - 9:30 a.m.** (Material covered: October 22 – December 10).

These examinations will each consist of regular multiple choice questions and multiple choice questions directed to maps and diagrams from course materials.

<p>Dates to remember September 19, Test #1 October 20, Mid-term November 12, Test #2 December 19, Final Exam</p>

GRADING SCHEME:

[A= 87 and above] [B+=80-86.9] [B=73-79.9] [C+=66-72.9] [C = 59-65.9] [D+ = 52-58.9] [D = 45-51.9] [E = <45]

All grades will be posted on the UF E-learning web site (<https://lss.at.ufl.edu>). Marks will be continuously updated and tabulation will be provided of your necessary performance in the remaining tests required to attain various grade levels. All of grades from the current and past tests will be posted. Your running total and equivalent percentage will also be shown. The last columns of the spreadsheet will give you an indication of the mark, as a percentage, which you require from the tests that remain, in order to achieve grades ranging from A through to D. It is your responsibility to know how well you are doing in the class.

As you know, it is now illegal to post grades using Social Security or UF ID numbers, in whole or in part. You will have a “personal nick name” known only to yourself and the instructor, by which your grades will be posted. You have to provide it by email to the instructor before the end of second week of September 2008 (send it to cmcanas@ufl.edu). This personal nickname can be a combination of letters and numbers , it will be your own Personal GEO 2200 ID throughout this class.

COURSE TEXT:

There are several interesting textbooks with lots of information about Physical Geography. Particularly, **Strahler and Strahler, Wiley (*Introducing Physical Geography*)** have agreed to publish an “abridged” version for this particular course, which contains some of the illustrative material that we will cover. However I have collected materials from other sources and incorporated them into the lectures, and therefore **the combined use of lecture notes and text book will provide the greatest benefit in the course.**

I have put together a course pack of relevant materials we will review in during lectures (tables, diagrams, maps) which is available at **TARGET COPY (1412 University Ave. Gainesville, FL 32603) under this course number (GEO 2200. Section 2287. Instructor Carlos M. Canas).** I strongly recommend that you purchase this. You can survive without it, but you will have to copy down all the materials

during the lecture periods (diagrams, charts, maps), I will be progressing at a speed which assumes that you have the course pack. This package will also serve as your **STUDY GUIDE**. If I have taken the time to complete the figures, diagrams, tables in this text then it is an indication that I want you to understand it.

THE COMMERCIAL NOTES WARNING:

In the eventuality of a discussion over grading I will recognize my notes and any text book as being an authoritative source. However, I will not recognize any commercially reproduced course notes, as these have been drafted by undergraduate students, and have in the past proved to be erroneous. This course will undoubtedly be targeted by a commercial note company because of the number of students enrolled. It is your choice which, if any, notes you buy.

ACADEMIC HONESTY:

You are all bound by the student academic honor code.

"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity".

"On my honor, I have neither given nor received unauthorized aid in doing this assignment".

Each student answers the same examination, however the computer shuffles the order of the questions and the order of the possible answers. In this way, each examination is unique, at least in its order, but not its content. When grading the answers, the computer scans for similarities in answers and notifies me of any remarkable coincidences! The first time a student is caught cheating they will get zero on the test. (In a multiple choice test you would probably score 20% simply by guessing!). On the second offense the student will be reported to the appropriate student body.

EXCUSED ABSENCES AND EXTRA CREDIT :

In the interest of fairness to **all** students in the class, and in light of the high enrollments, there will be **NO EXTRA CREDIT**. However, I appreciate that unexpected events occur in all of our lives. If such events (illness, personal problems, etc.) befall you, I will give you the choice of either taking a make-up exam or skipping the exam, upon production of **official documentation of your case ON TIME (right after exam date)**. If you chose to skip the exam, your grade will be based purely upon your performance in those forms of evaluation that you did take.

THREE THINGS I DO NOT ALLOW DURING LECTURES:

- 1. Cell phones** - turn them off.
- 2. Talking in class** - if you don't want to hear what I have to say, don't show up, and let those who do want to hear more clearly.
- 3. Reading the newspaper in class** - go and have a coffee, sit in a comfy chair and/or enjoy the sunshine while you read.

I have no policy of mandatory attendance. When you enter the lecture room you are doing so of your own volition, not because you are being forced to. When you make that choice you are also agreeing to show respect to your fellow students by allowing them to hear the lecture material without having to compete with cell phones and background chit-chat.

LECTURE TOPICS

PART I: GLOBAL CLIMATOLOGY

- 1. EARTH AND ENERGY**
Physical Geography and Earth Systems
Flow of Energy and Global Climate
Transfer of Energy
Electromagnetic Radiation (EMR)
Radiation Laws
EMR Spectrum
- 2. INCOMING SOLAR RADIATION**
Insolation
Variations in Insolation
Revolution and Seasons
Rotation and Length of Days
Global Radiation Regimes
Daily Insolation at Top of Atmosphere
- 3. EARTH'S ATMOSPHERE**
Composition
Atmospheric Pressure
Gas Laws
Thermal Structure
- 4. RADIATION BALANCE**
Shortwave Radiation Balance
Energy Sinks
Latent Heat Flux
The Green House Effect

Longwave Radiation Balance
Global Radiation Balance

5. GLOBAL CIRCULATION AND PRESSURE

The Hadley Cells
Pressure Belts
The Coriolis Effect
Surface Global Winds
Cyclonic and Anticyclonic Cells

6. GLOBAL CIRCULATION

Continent and Ocean Contrasts
Local Winds (Land/Sea Breeze)
Wind Circulation
Ocean Current Circulation
Seasonal Shifts

7. MOISTURE IN THE ATMOSPHERE

Humidity
Adiabatic Processes
Orographic Precipitation
Convergent Precipitation
Frontal Precipitation
Convective Precipitation
Global Precipitation Pattern
Seasonal Shifts in Precipitation

PART II: GLOBAL LANDFORMS

8. INTERNAL STRUCTURE OF THE EARTH

Internal Forces
Origin of the World and Solar System
Internal Structure
The Asthenosphere
The Lithosphere

9. EARTH'S MATERIALS

Weathering and Erosion
The Rock Cycle

10. PLATE TECTONICS

Plate Arrangement
Tectonic Processes

Divergent Boundaries
Convergent Boundaries
Conservative Boundaries
Hot Spots
Active Tectonic Region in Western U.S.
Earthquakes
Plate Tectonic and Continental Drift

11. HYDROLOGIC CYCLE
 - Global Stores
 - Global Fluxes
 - Residence Time
 - The Water Budget in Florida
 - Hillslope Hydrology
 - Urbanization and Hydrologic Cycle

12. MASS MOVEMENT AND SLOPE PROCESSES
 - Regolith
 - Flows, Slides, Falls
 - Weathering and Downslope Movement
 - Forces and Resistances in Hillside Movement
 - Water and Downslope Processes

13. EROSION BY RUNNING WATERS
 - Running Waters and Landforms
 - Splash Erosion
 - Chemical Erosion
 - Clastic Erosion

14. KARST LANDFORMS
 - Limestone Solution
 - Conditions for Karst Formation
 - Types of Karst Landforms
 - Autogenic and Allogenic Karst
 - The Floridian Aquifer

15. CLASTIC EROSION
 - Forces and Resistances in Clastic Erosion
 - Hjulstrom's Diagram
 - Transport of Sediment in Rivers

16. COSTAL GEOMORPHOLOGY
 - Tides
 - Waves

Littoral Drift