UNIVERSITY OF FLORIDA
Department of Geography
GEOGRAPHY 3280.4
Principles of Geographic Hydrology

Fall 2008 Dr. Peter Waylen

LECTURES: Monday, Wednesday, Friday, period 6 (12:50 a.m. – 1:40 p.m.), Friday period 7
LOCATION: Turlington 3012
OFFICE: Turlington 3141, E-mail prwaylen@geog.ufl.edu, Wednesday and Thursday 2 p.m. - 3 p.m.

> *"Hydrology is the science that treats of the waters of the Earth, their occurrence, circulation and distribution, their chemical and physical properties, and their reaction with their environment, including their relation to living things.'*
>
> Ven Te Chow, Handbook of Applied Hydrology, 1964.

This introductory course will not attempt to review all the majpr topics in hydrology. Instead, the course is structured to meet with the following objectives;

1. To review the major components of the hydrologic cycle,
2. To study the spatial and temporal variations of the hydrologic phenomena,

and 3. To study hydrologic systems on the scale of drainage basins.

There is no text book to accompany this course, therefore it is your responsibility to attend lectures on a regular basis. You will not be assigned any readings beyond the provision of those which support the class materials. All forms of students evaluation used in this class will be based entirely upon lecture materials and assignments.

COURSE READINGS: Chapters from different books, and various research publications from which the notes are gathered have been put together. A copy can be borrowed from me, and is ***not required***. The notes have been distilled from these sources, so you are best advised to read the relevant sections of these materials after the lectures.

COURSE PACKAGE: A package containing copies of most of the diagrams and overheads used in the class is available from TARGET COPY. This is ***not required***, but purchase this moderately priced package will mean less time spent on reproducing the graphics during lectures and more time concentrating on the concepts that the materials convey.

LABORATORY MANUAL: This ***REQUIRED*** notebook, available at TARGET COPY, contains all the assignments, their accompanying explanations, hints, support materials and data.

COURSE EVALUATION:

8 Homework Assignments	64%
1 Mid-term Examination (short answers)	15%

1 Final Project	11%
1 Group Presentation	10%

Assignments: Numerical analyses and discussion of material covered in recent lectures. Take home. These are due in approximately one week (tentative schedule at end of syllabus). The assignments are all based on a single small drainage basin, the Tiribí, in Costa Rica and are designed to step through the procedures by which a simple computer model of monthly stream flows may be created, taking into account geographic variations in such variables as precipitation, land use/cover, and evaporation. The final objective is a model which will allow the prediction of monthly stream flow at any point in the basin and permit the incorporation of changes within the basin resulting from climate or land use change.

The necessary data files will be sent to you electronically at the beginning of the semester. As assignments 3 through 8 build on each other, corrected updates will be sent out periodically (numbered sequentially I - V) throughout the semester, in order that your errors in previous assignments not effect your ability to do well in the subsequent ones.

A great deal can be learned and gained from these assignments, hence their heavy weighting in terms of the final grade. However, to ensure that I am also able to determine who, in the cooperative environments of the assignments, has and has not truly assimilated the course material, there must also be some individual "in class" evaluations.

Mid-term: Short answer and diagram questions covering all lecture and assignment material from the beginning of term. To be taken in the regular lecture slot Wednesday, October 22.

Group presentation: The final assignment requires that students complete an analysis of one of five sub-basins within the Tiribí basin. Students will be allocated, at random, their particular sub-basin and will be expected to submit their lab as all the others. However, to ensure that all students are exposed to the differing regional behaviors within the Tiribí, and to emulate the "real-world" experience of having to present your findings to a group of knowledgeable outsiders, students allocated the same sub-basin will be required to collaborate to produce a power-point presentation on the hydro-climatology of their sub-basin. Presentations should be no more than 20 minutes in length. More details on formatting and content will be provided closer to the dates of presentation in the last week of classes.

Project: Your own report on the feasibility of using your sub-basin, based on the assignments and group presentations.

LETTER GRADES: I have my own grading scheme which I endeavor to maintain throughout the class in order that you know exactly what your current standing is at all times:
[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]

COURSE POLICIES:

Honesty: All students are bound by the University's 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.*"

There is a great deal to be gained academically by working in groups, both formal and informal. Teaching each other has very positive benefits for all concerned. I encourage you to work together, exchange questions and suggestions in solving the assignments and preparing for the examinations. HOWEVER, once the problem has been solved you will be required to write up a brief report. You must do this independently. It is very easy to spot students who are submitting the same written reports (it has happened!) or who are changing phrases around. If I see this I will give half marks on the first occasion along with a very clear warning, then I will assign a zero to all students involved on any subsequent occasions.

Absence: Many documented excuses (sickness, personal problems, transport difficulties, etc.) will be accepted for missed assignments and examinations.

Late assignments: With each day that the assignment is late, without an acceptable, documented excuse, the maximum letter grade (and therefore percentage) that a student can attain will drop by one whole letter grade. One day late, maximum possible (100% correct assignment) will be B, two days late, maximum grade possible C etc. Four days late and assignments will not be accepted (score = 0). I need to enforce this strictly to be able to send out the periodic updates, which really constitute the answers to the preceding assignments.

COMPUTING TECHNIQUES: Access to, and some experience in using, spreadsheets is assumed. Assignments are set up in "EXCEL" as this software comes with all Microsoft machines, however the data may also be input into other packages such as "QUATTRO". If you have difficulties with this please let me know on an individual basis. It is IMPOSSIBLE to attempt these tasks without spreadsheets. We will be completing repetitive calculations on at least 265 grid squares for 12 months (265x12 = more than 3000). With spreadsheets this is a reasonable amount of work for a professor to ask of students - manually, the request is absurd.

You may establish an account on the departmental computers in Turlington 3006 and 3018. Having done so, these machines are accessible at any time, except while classes are being held (times posted on door). ClasNet accounts are available on the departmental web site, www.geog.ufl.edu; click on "*Departmental Computing Resources*", go to "*new users*" (left hand side), and fill out the requisite form on line. This class is one the list of course provided. Access to this room is controlled by a digital lock, which your UF ID card should open once you have submitted the request for a ClasNet account. The door is generally "wedged open" during the day. Please ensure that the door is shut and locked for your own safety, and for the security of

the equipment, if you are working at night or the weekends. The sequence of users, and their time of entry, is stored in the lock. These are departmental resources, please use them appropriately and show respect to others using the room.

If you wish to use departmental facilities to run off hard copies of your assignments, you must pay a $10 Lab Fee. Please make checks payable to "Department of Geography, University of Florida" and write your ClasNet username on the back of your check. . Once paid, the printing privileges associated with your account will be "switched on", and you will be able to access printers in these rooms.
In summary:
1) You are not required to use any departmental facilities.
2) You may have access to the computers and software by obtaining a ClasNet account.
3) You have access to the printing facilities by paying a $10 lab fee.

LECTURE TOPICS: The course is based around the concept of the water balance equation for both the drainage basin and subsystems within the basin. Each topic is introduced qualitatively from a physical perspective and then some simple numerical techniques for its representation are presented. We will endeavor to stay on the following schedule although discussion and class participation is encouraged at all times, and I am willing to sacrifice a certain amount of scheduled material for 1) a greater understanding of the material we do cover and 2) greater depth in any particular aspects which interest you..

Hydrologic Cycle
Water Balance
Mass Curves
Precipitation Generating Processes
Temporal Analysis of Precipitation
Spatial Analysis of Precipitation
Interception
Infiltration
Overland Flow
Soil and Ground Water

SIGNIFICANT DATES:

No Classes:	September 1
	October 3
	November 26 and 28
Mid-term:	Wednesday October 22
Final Project:	Monday December 15 5:00 p.m.

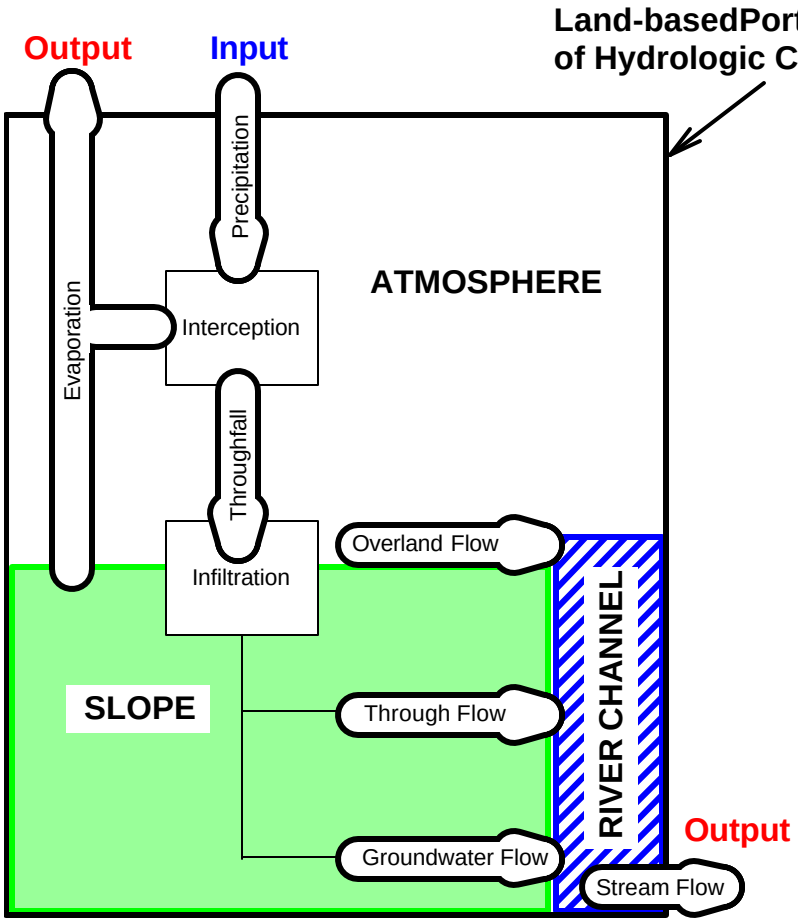
WEB PAGES: A copy of this syllabus and updated course grades will be kept on the geography department website : http://www.geog.ufl.edu/.

Class materials pertaining to the lab manual are stored on:
http://www.clas.ufl.edu/users/prwaylen

PAST STUDENT OPINIONS: All comments (in full - good and bad) and teaching evaluation scores from this course, since the introduction of the lab manual, are available for your review at:
http://www.clas.ufl.edu/users/prwaylen/Geo3280TeachingEvals
I strongly recommend that you view these ***ASAP*** to check the veracity of what I say about work load, willingness to assist etc., and for an honest review of what lays in store for the class. It is clear that these messages and comments written by past students are as useful to you, as they are to me.

Proposed Schedule for Assignments, Fall 2008.

Monday	**Wednesday**	**Friday**
Aug. 25	Aug. 27	Aug. 29
Sep 1 Labor Day	Sep. 3 **#1 Out**	Sep. 5
Sep. 8	Sep. 10 **#1 Due**	Sep. 12
Sep. 15 **#2 Out**	Sep. 17	Sep. 19
Sep. 22 **#2 Due**	Sep. 24	Sep. 26 **#3 Out**
Sep. 29	Oct. 13 **#3 Due**	Oct. 3 HomeComing
Oct. 6	Oct. 8 **#4 Out**	Oct. 10
Oct. 13	Oct. 15 **#4 Due**	Oct. 17
Oct. 20	Oct. 22 **Midterm**	Oct. 24 **#5 Out**
Oct. 27	Oct 29	Oct. 31 **#5 Due**
Nov. 3	Nov. 5 **#6 Out**	Nov. 7
Nov. 10	Nov. 12 **#6 Due**	Nov. 14
Nov. 17 **#7 Out**	Nov. 19	Nov. 21
Nov. 24 **#7 Due**	Nov. 26	Nov. 28 Thnksgvng
Dec. 1 **#8 Out**	Dec. 3	Dec. 5
Dec. 8	Dec. 10 **#8 Due**	Dec. 12 Presentation



HYDROLOGIC PROCESSES CONSIDERED IN THE CLASS