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

Fall 2020 Dr. Peter Waylen

LECTURES: Monday, Wednesday, Friday period 6 (12.50-1:40)
TYPE: Synchronous, although lectures will be stored on the cloud for your subsequent access.
CONTACT: e-mail prwaylen@ufl.edu, Will be available to answer questions and/or arrange zoom meetings Monday, Wednesday and Friday2:00-4:00

COVID_RELATED PRIVACY NOTE:
Our class sessions may be audio-visually recorded for students in the class to refer back. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate verbally are agreeing to have their voices recorded.

If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared.

As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

COURSE:

"*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 thing*s.'
Ven Te Chow, Handbook of Applied Hydrology, 1964.

This introductory course will not attempt to review all the major topics in hydrology. Instead, it 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,
3. To study hydrologic systems on the scale of drainage basins.

PREFERRED PREREQUISITE/COREQUISITE:
Students are reminded of the description provided in the course catalog, which states:

"Credits: 4; Prereq: GEO 2200 or instructor permission; Coreq: GEO 3162C."

a) The four course credits reflect the slightly higher expectations in terms of the amount of assignment work than a usual 3 credit course.
b) Introductory Physical Geography (GEO2200) is the preferred prerequisite, however I am prepared to work individually with students with an interest in hydrology to fill gaps in knowledge.
c) The assignments involve the statistical manipulation of actual data sets from the real world. Courses in introductory statistics (such as GEO3162C, Introductory Quantitative Analysis) would be helpful. All analyses will be completed using basic functions on EXCEL spreadsheets, but familiarity with the functions themselves will help in the hydrologic interpretation of the result.

COURSE EVALUATION:
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.

7 Homework Assignments	70%
1 Mid-term Examination (short answers)	15%
1 Final Exam	15%

Assignments: Seven assignments to be submitted individually. 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 28**.

Final Exam: Short answer and diagram questions covering all lecture and assignment material from the mid- term. To be taken in the examination slot **THURSDAY, DECEMBER 16, 7:30-9:30 a.m. This could be changed subject to UNANIMOUS agreement amongst students**

GRADING SCHEME:
A = 90 and above
A- =85-89.9
B+ =80-84.9
B =75-79.9
B- =70-74.9
C+ =65-69.9
C =60-64.9
C- =55-59.9
D+ =50-54.9
D =45-49.9
D- =40-44.9
E <40
NOTE: Under University regulations *a "C-" will not be a qualifying grade for major, minor, Gen Ed, Gordon Rule or College Basic Distribution credit.*

FOR GEOGRAPHY MAJORS:
Capstone Portfolio: In GEO4930 Senior Seminar, you will be expected to turn in a capstone portfolio with assignments and projects in your geography courses, including this one. The portfolio is designed to assess student learning outcomes in communication (Interpret and effectively communicate information spatially, graphically and/or with statistics) and critical/analytical thinking (analyze geographic information and apply interpretation of data toward problem solving or modeling) in the major. These are posted in the catalog (https://catalog.ufl.edu/ugrad/current/liberalarts/ALC/geography.aspx). Please save and back-up any files involving assignments and projects in your geography courses.

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. If you have difficulties with this please let me know on an individual basis. It is **IMPOSSIBLE** to attempt these tasks without spreadsheets.. With spreadsheets, this is a reasonable amount of work for a professor to ask of students - manually, the request is absurd!!!

LECTURE TOPICS:
The course is built 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
Unit Hydrograh
GIS-based modeling

SIGNIFICANT DATES:

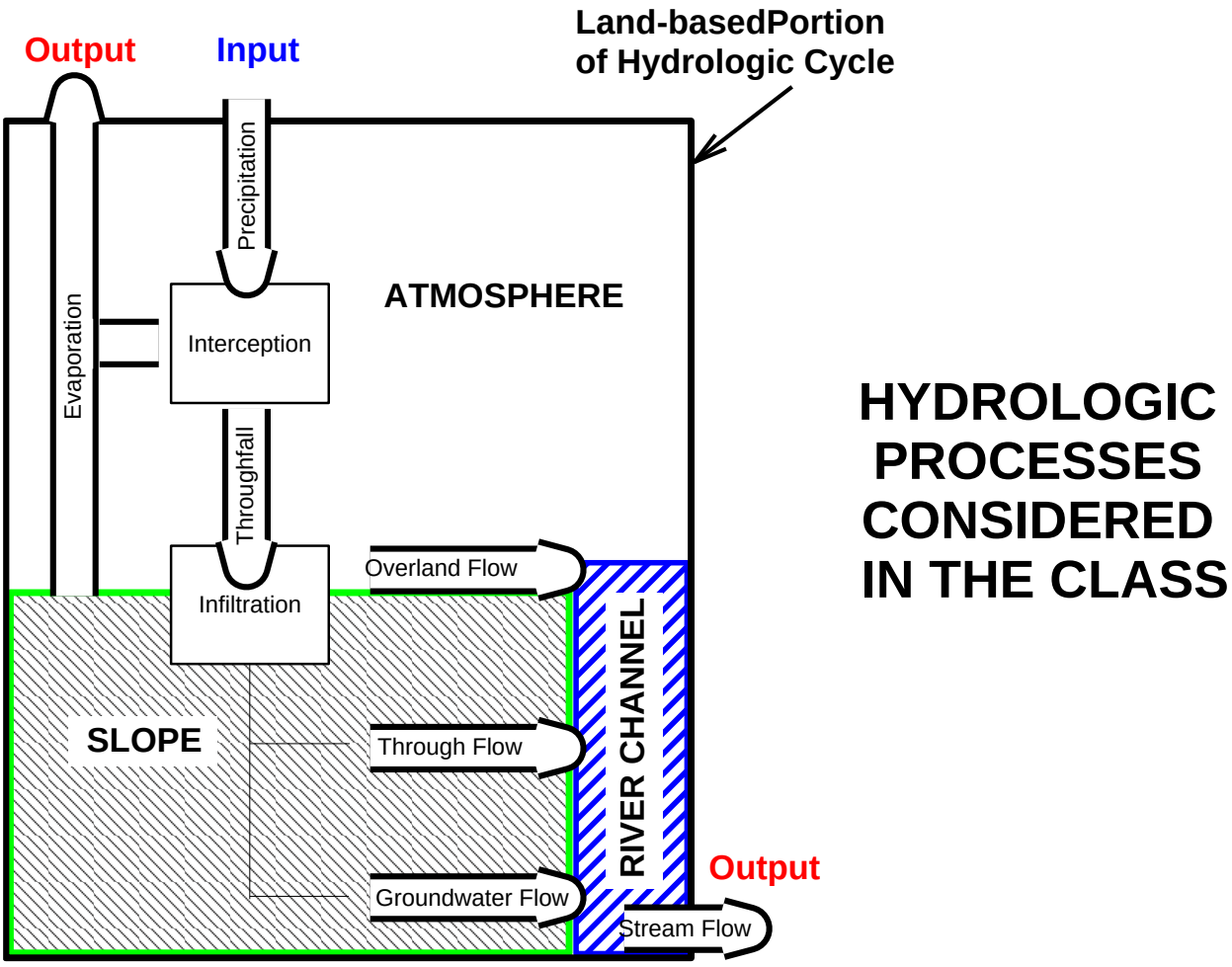
No Classes: September 7 (Labor Day)
November 11 (Veterans Day)
November 25 and 27 (Thanksgiving)
Mid-term: Wednesday October 28
Final Exam: Wednesday December 16, 7:30-9:30 a.m.

Proposed Schedule for Assignments, Fall 2020.

Monday	**Wednesday**	**Friday**
Aug. 31	Sep. 2	Sep. 4
Sep. 7 Labor Day	Sep. 9 ***#1 Out***	Sep. 11
Sep. 14	Sep. 16 **#1 Due**	Sep. 18
Sep. 21 ***#2 Out***	Sep. 23	Sep. 25
Sep. 28 **#2 Due**	Sep. 30	Oct. 2 ***#3 Out***
Oct. 5	Oct. 7	Oct. 9 **# 3 Due**
Oct. 12	Oct. 14 ***#4 Out***	Oct. 16
Oct. 19	Oct. 21 **#4 Due**	Oct. 23
Oct. 26	Oct. 28 **Midterm**	Oct. 30
Nov. 2 ***#5 Out***	Nov. ***4***	Nov. 6
Nov. 9 **#5 Due**	Nov 11. Vets' Day	Nov. 13
Nov. 16 ***#6 Out***	Nov. 18	Nov. 20
Nov. 23 **#6 Due**	Nov. 25Thanks Giving	Nov. 27 Thanks Giving
Nov. 30	Dec. 2 #7 Out	Dec. 4
Dec. 7	Dec. 9 **#7 Due**	Dec 11 Reading Day

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



HYDROLOGIC PROCESSES CONSIDERED IN THE CLASS