

RIVER FORMS AND PROCESSES, GEO 4281/GEO6282

Spring 2020, 3012 Turlington Hall, MW (5-6 or 11:45-1:40, 5 or 11:45-12:35)

Instructor: Dr. Joann Mossa

Office Location: 3131 Turlington

Office Hours: T-Th 11:30-12:30 PM or by appointment

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E-mail: mossa@ufl.edu (please communicate when appropriate)

CATALOG DESCRIPTION: Examines the nature and variety of fluvial processes and the origin and modification of fluvial landforms; includes discussion of environmental changes in rivers and human activities in drainage basins

COURSE REQUIREMENTS AND/OR RECOMMENDATIONS:

Physical Geography (GEO 2200) or Physical Geology (GLY 2010) or equivalent or permission

COURSE MATERIALS

Canvas, <http://elearning.ufl.edu>, includes readings, power points, data sets, etc.

You will be doing several data analysis projects with Excel...this is available to students through UF Apps and is installed on many computers in the department and around campus. Staff at the Hub and CSE will be able to assist you with problems with installation.

BASIC TEACHING APPROACH

Want to create a positive learning environment

Variety of assignments, experiential, applied, visual

Questions welcome, will come in both directions

Attendance/responsible behavior encouraged by in-class assignments

Many items graded (2-20% of grade apiece). You will not be anonymous.

If you tend to miss classes, want to be anonymous, or prefer exams to assignments, give consideration to dropping this class in favor of one more suited to your learning style

ASSIGNMENTS, ATTENDANCE AND MAKE-UP POLICY

Class attendance is highly recommended, and missed classes are likely to seriously impact your grade due to the number of in-class assignments. In certain circumstances (family emergency, illness), I will work with students who need to make-up an in-class assignment out of class.

IMPORTANT DATES

-January 20, 2020, MLK holiday

-Spring Break: March 2-6, no classes

-Probable cancellation week of April 6th for AAG meetings

Any other cancellations will be announced in class and/or on Canvas

GRADING AND ASSIGNMENTS:

A = 92 or above; A- = 90-91.9; B+ = 88-89.9; B = 82-87.9; B- = 80-81.9; C+ = 78-79.9;

C = 70-77.9; C- = 68-69.9; D+ = 66-67.9; D = 60-65.9; D- = 58-59.9; E = < 58

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

FOUR QUIZZES (10% Each, Total 40%)

Quiz 1: Background Terminology and Drainage basins

Quiz 2: Hydrographs and Channel processes

Quiz 3: Sediments, Erosion, Deposition and Transport

Quiz 4: Channel Morphology and Channel Change

IN-CLASS AND SHORT TAKE-HOME ASSIGNMENTS (40%)

After they are returned, keep these to help with quiz review. Assignments may include:

- 1) map and data analysis assignments regarding fluvial systems. Some will be done individually and some in groups, in and out of class. This will familiarize students with a variety of with data sources, and teach through problem-based learning. These will typically be worth 2 to 5% each. Some potential assignments include:
 - a. Drainage basin delineation
 - b. Network analysis for connectivity
 - c. Assessment of Q data and hysteresis loops of stage and Q
 - d. Flow duration curves and dimensionless flow duration curves
 - e. Flood frequency analysis
 - f. Plotting channel cross sections
 - g. Sediment rating curves
 - h. Channel geometry changes using varied data sources
 - i. Data extraction from USACE hydrographic surveys to examine longitudinal profiles and riffle-pool morphology
 - j. Google Earth assignments
- 2) Field trip participation, usually during class period

INDIVIDUAL OR GROUP PROJECT (20%): This can be an individual (usually grads) or a group (usually undergrads) data analysis or research-based or project involving spreadsheets or GIS, or a video project focused on river forms and processes. I will be happy to assist with ideas and data sources. We will discuss multiple options as the semester progresses, and you will share your result with the class.

Due Date: mid-April, date to be announced in class

WEEKS:	TOPIC
1:	Background terminology and concepts Significance of fluvial studies PP Introduction to Fluvial Systems
2, 3, 4:	Drainage basin form and processes/Quiz 1 PP: Basics of Drainage Systems, Hydrology & Hydrographs
5, 6, 7:	Channel processes/Quiz 2 PP: Stage and Stage-Q relations, Velocity, Discharge & Measurement, Flood and Drought Analysis
8, 9:	Sediments, erosion and transport PP: Hillslope Erosion, Bank Erosion, Sediments & Transport
10:	Sediments, deposition and stratigraphy/Quiz 3 PP: Deposition, Sedimentary Deposits and Floodplain Features
11, 12:	Channel morphology PP: Channel Geometry and Cross Sections
12, 13:	Channel planform and pattern, channel profiles PP: Channel Planform and Pattern, PP: Channel Profiles
14, 15:	River channel changes, paleohydrology, human activities/river management Applied fluvial geomorphology/Quiz 4 PP: Channel Changes

HONOR CODE: UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code." On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor of this class.

STUDENTS WITH DISABILITIES AND OTHER CONCERNS

"Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation. Please take care of your health and be aware that the University Counseling Center (392-1575, <http://www.counseling.ufl.edu/cwc/Default.aspx>), the Student Health Care Center (392-1161) and Student Mental Health (392-1171) can assist students as they work through personal, academic and social issues. Provide advance notice and obtain documentation for excused absences where possible. If needed, University Police Department can be contacted at 392-1111 or Dial 9-1-1 for emergencies.

ATTENDANCE POLICIES

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

OTHER POLICY

Please minimize distractions to yourself and others during class time (cell phones off, no ancillary conversations, quiet note-taking typing only). I will give you the evil eye and have a conversation with you after class if you violate this policy.

EVALUATIONS: Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at

<https://evaluations.ufl.edu> Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>