FLUVIAL MORPHOLOGY AND PROCESSES, GEO 4281
Spring 2014, 3012 Turlington Hall, T6 (12:50-1:40 P.M.), R6-7 (12:50-2:45 P.M.)

Instructor: Dr. Joann Mossa
Office Location: 3131 Turlington
Office Hours: TRF 9-11 A.M. or by appointment
Phone: 294-7510
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

RECOMMENDED COURSE READINGS:

BASIC TEACHING APPROACH
Want to create a positive learning environment
Some readings, posted on Sakai
Content and teaching style appeals most to visual and kinesthetic/experiential learners
Big believer in resource availability, all Power Points posted on Sakai; Advise you use them
Ask open questions in class to help in learning and thinking; your questions welcome also
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
-February 6, at a meeting, no class but will give some take-home work
-Spring Break: March 1-8, no classes
-April 8-12, at a meeting part or all week, will give some take-home work

GRADING AND ASSIGNMENTS:
A = 90 or above; A- = 88-89.9; B+ = 86-87.9; B = 80-85.9; B- = 78-79.9; C+ = 76-77.9;
C = 70-75.9; C- = 68-69.9; D+ = 66-67.9; D = 60-65.9; D- = 58-59.9; E = < 58
Note: A grade of C- or lower does not meet major, minor, or Gen Ed requirements.
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 (35%, possibly more for Extra Credit)
After they are returned, keep these to help with quiz review. Some of these will also be useful in your capstone portfolio preparation, to be submitted in Senior Seminar.
Assignments may include:
1) reviews or responses to questions regarding documentaries or videos of processes in rivers shown in class, usually worth 2 pts. Please be on time so not to distract others during the movie
2) map and data analysis assignments regarding fluvial systems. Some will be done individually and some in groups. Some will be done fully in class, others out of class, others mixed. This will familiarize students with a variety of data sources, and teach through problem-based learning. These will be worth 5 to 10% each. Some potential assignments include:
   a. Drainage basin delineation
   b. Hydrograph interpretations
   c. Flow duration curves
   d. Plotting channel cross sections
   e. Sediment rating curves
   f. Channel geometry changes using varied data sources
   g. Data extraction from USACE hydrographic surveys
   h. Google Earth assignments
3) Field trip participation, usually during class period, usually worth 2 pts.
4) Sakai discussion board postings, usually 1 pt. apiece

PARTICIPATION (5%): A class of this nature is better with your questions, ideas and input, not distracting others, your presence and promptness

POWER POINT ASSIGNMENT (20%): Write about an issue in fluvial morphology, telling about it using visuals, including high-quality graphics (photographs, drawings). Consider topical themes (bank erosion; point bars; braided rivers; bed load, river restoration-prospects and problems), cause and effect relationships (effects of urbanization on channel morphology; effects of beavers on river form and process), or river settings (arctic rivers, glaciofluvial rivers, ephemeral rivers, headwater rivers, karst rivers, large rivers, mined rivers, dammed rivers, etc.) are possible themes. Try to tell a story based on your topic and put your slides in a logical sequence. Use, integrate and appropriately cite and credit information from at least 3 website sources for graphics and 3 refereed journal articles (discussed in class). Begin with a title slide, and then an outline slide that raises one or more questions for which you will provide some insight. Each graphic must have a citation (full website address or the journal citation) of where the content and graphics comes from. Include labels, relevant write-up, titles, as appropriate. Make a conclusions slide that repeats and responds to the initial questions and a references slide with complete citations in consistent and complete format. I am happy to provide early feedback. The grading rubric is as follows: 20% originality (using examples and topics not discussed in class, using your own wording, finding something not well known), 20% breadth and depth of research (examining topic across different events and locations), 20% organization and structure, 20% use of maps, data, tables
and graphics, 20% quality and quantity of sources, inclusion of full references and citations. Please let me know your topic by mid-February so we can avoid duplication of content (and suspicion of plagiarism). **Due Date:** TBA, early March

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<th>WEEKS</th>
<th>TOPIC</th>
<th>READINGS: pages</th>
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| 1:    | Background terminology and concepts  
Significance of fluvial studies  
PP Introduction to Fluvial Systems, Geomorphic Concepts | Charlton: 1-9, 10-20 |
| 2, 3, 4: | Drainage basin form and processes/Quiz 1  
| 5, 6, 7: | Channel processes/Quiz 2  
PP: Stage and Stage-Q relations, Velocity, Discharge & Measurement, Flood and Drought Analysis | Charlton: 69-92 |
| 8, 9: | Sediments, erosion and transport  
PP: Hillslope Erosion, Bank Erosion, Sediments & Transport | Charlton: 52-68, 93-112 |
| 10: | Sediments, deposition and stratigraphy/Quiz 3  
PP: Deposition, Sedimentary Deposits and Floodplain Features | Charlton: 113-116, 129-137 |
| 11, 12: | Channel morphology  
PP: Channel Geometry and Cross Sections | Charlton: 117-129 |
| 12, 13: | Channel planform and pattern, channel profiles  
PP: Channel Planform and Pattern, PP: Channel Profiles | Charlton: 137-156 |
| 14, 15: | River channel changes, paleohydrology  
Human activities/river management  
Applied fluvial geomorphology/Quiz 4  
PP: Channel Changes | Charlton: 157-176, 177-200 |
**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/](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](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. Please minimize distractions to yourself and others during class time (cell phones off, no ancillary conversations, quiet typing only).

**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](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](https://evaluations.ufl.edu/results)

**LEARNING AND TECHNOLOGY POLICY:** To create a positive learning environment and minimize distractions for your classmates and instructor, please type and text only when appropriate to the class lesson.