

ST: Fluvial Processes, GEOL 40095/50095/60095
Fall 2013, Kent State University, Department of Geology

Instructor: Dr. Anne Jefferson, ajeffer9@kent.edu, 330-672-2746, McGilvrey 235C

Office Hours: Mondays 2 -4 pm, Tuesdays 10 am – 12 pm, Fridays 10 – 11 am

Course Meetings: Tuesdays, 2:15 to 5 pm, McGilvrey 339 or in the field

Final Exam: Thursday, December 12th, 12:45- 3 pm

Field Trip: There is a required field trip on Saturday and Sunday, September 21-22. Not overnight, but will consist of two full days, each beginning and ending in Kent.

Course Website: <http://learn.kent.edu>

Required Materials: Charlton, R. 2008. Fundamentals of Fluvial Geomorphology. Routledge, London. 234 pgs.

Learning outcomes: After completing this course, students will be able to:

- Identify the environmental controls operating upon river systems and illustrate the ways that channel forms adjust in response to changes in those controls
- Describe how the following concepts are applicable to the understanding of river systems: space and time scales; process-response systems; thresholds; and equilibrium
- Use field techniques and data analysis to describe and quantify fluvial form and process
- Read and interpret the scientific literature on fluvial geomorphology

Image below: Boulder Creek, a step pool, headwater stream in Oregon



Assessment

Grades will be distributed based on the percentage of points earned. Point values needed to achieve a given grade may be adjusted downward at the end of the term, but will not be adjusted upward.

A = 90-100%, B = 80-90%, C = 70-80%, D = 60-70%, F < 60%

	<i>Undergraduates</i>		<i>Graduates</i>
Exams (2)	400	Exams (2)	400
Reading Responses (5)	250	Reading Responses (9)	250
Field reports (5)	350	Field reports (5)	350
		Paper and presentation	300
	1000		1300

Exams will cover material from lecture, field and lab experiences, class discussions, and the assigned readings. Questions may be short answer, essay, data analysis, or mathematical.

Reading Responses will be required for assigned papers. Students will be responsible for reading the paper, responding to prompts on Blackboard, and participating in a class discussion of the paper. Late responses will not be accepted. Each response is worth up to 50 points. On the syllabus where there is a / between two papers, then *undergraduates* should read both papers but get to choose which one to respond to. *Graduates* should respond to both papers.

Field reports will require analysis of field collected data or reflection on observations made during field trips. Sometimes reference to additional maps or materials outside of class may be helpful. There will be five field reports in September and October. The product of the projects will typically include 2-4 pages of text accompanied by graphs, data tables, calculations, photos, and/or maps.

Paper and Presentation: (*Graduate students only*) You will complete a literature review and synthesis paper of at least 2500 words, with at least 10 appropriately cited journal article references, on a topic of your choice related to Fluvial Processes. You will give a 10-minute oral (and visually appealing) presentation on the topic on 26 November or 3 December. Topics should be approved by me, no later than 1 November. Papers are due 3 December.

Extra credit (*Undergraduates only*) available in this class consists of attending GES departmental colloquia and posting a summary on Blackboard within one week of the colloquium date. For each colloquium that you attend and summarize, I will add 10 points to your overall score for the class.

Image to the right:
Mississippi River, braided and regulated, Minnesota/Wisconsin



University Policies

- **Registration:** The official registration deadline for this course is September 8, 2013. University policy requires all students to be officially registered in each class they are attending. Students who are not officially registered for a course by published deadlines should not be attending classes and will not receive credit or a grade for the course. Each student must confirm enrollment by checking his/her class schedule (using Student Tools in FlashLine) prior to the deadline indicated. Registration errors must be corrected prior to the deadline.
- **Withdrawal:** The course withdrawal deadline is September 8th (for no W grade recorded) or November 3rd (W grade recorded).
- **Academic Dishonesty:** University policy 3-01.8 deals with the problem of academic dishonesty, cheating, and plagiarism. None of these will be tolerated in this class. The sanctions provided in this policy will be used to deal with any violations. If you have any questions, please read the policy at http://www.kent.edu/policyreg/policydetails.cfm?customel_datapageid_1976529=2037779 and ask for help. If you are academically dishonest in this class, you will at a minimum receive 0 credit for the assignment or exam and be referred to Plagiarism School. Greater sanctions are also possible.
- **Student Accessibility:** University policy 3-01.3 requires that students with disabilities be provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please contact the instructor at the beginning of the semester to make arrangements for necessary classroom adjustments. Please note, you must first verify your eligibility for these through Student Accessibility Services (contact 330-672-3391 or visit www.kent.edu/sas for more information on registration procedures).

Course Policies

- **Lab and Field Exercises:** You are expected to come to lab prepared to participate in the activities. You should bring a notebook, sharpened pencils, eraser, a ruler, and a calculator to all lab and field sessions. Colored pencils may be helpful in some cases. For field exercises, you should be dressed appropriately for the weather and for outdoor terrain and vegetation. This includes rugged shoes, appropriate sun and rain protection, and knee boots, hip waders, or chest waders as needed. Make sure to bring adequate water and snacks for field exercises.
- **Late and Absence Policy:** Your attendance and participation in all class sessions is expected. If you cannot attend class for an approved and documented absence (illness, family emergency, religious observance, or University-approved event) and you cannot complete the associated assignment by its due date, please let me know as soon as possible and I will arrange a substitute assignment.
- **Professional Behavior:** This is a class for advanced undergraduate and graduate students who are preparing to be geoscience professionals. I expect professional behavior and communication from you, and I will try to model those behaviors for you. These behaviors include promptness and attentiveness in the classroom, and typed, grammatically-correct writing, free of spelling errors and slang. This includes email communication. Assignments not meeting these standards may be returned for revision and resubmission.

Tentative Schedule ---This schedule is subject to change.---

Week	Topic	Readings	Assignments
27 August	No class		
3 September	Introduction; watershed hydrology	Chapters 1,2, and 3 O'Connor and Costa paper	
10 September	Sediment sources and yield	Chapters 4 and 5	
17 September	Field 1: Discharge, sediments and erosion/deposition	Renwick and Anderek paper	<i>O'Connor and Costa / Renwick and Anderek response due</i>
20-21 September	Weekend Field Trip: Fluvial Geomorphology in the Cuyahoga River watershed		
24 September	Open channel flow Bankfull and hydraulic geometry	Chapter 6, Box 3.3, Box 8.1	<i>Field 1 due</i>
1 October	Field 2: Hydraulic Geometry	Wohl paper Gorney et al paper	<i>Field WE due</i>
8 October	Sediment transport Meander development	Chapter 7 p. 133-144	<i>Field 2 due</i>
15 October	Field 3: Meander geometry	Wilcock paper Hudson and Kessel paper	<i>Wohl / Gorney et al. response due</i>
22 October	Midterm Exam		
29 October	Field 4: Reach morphology (If attending a conference, a substitute will be arranged.)		<i>Field 3 due</i>
5 November	Channel form and behavior	Chapter 8	<i>Wilcock / Hudson and Kessel response due</i>
12 November	Channel form and behavior Floods and system response to change	Chapter 9	<i>Field 4 due</i>
14-15 November	Kent State Water Symposium (KSU Hotel) (Attend at least 1 event)		
19 November	Humans and streams (urban impacts)	Chapter 10 Pizzuto paper Walter and Merritts paper	<i>Response due: Read 1 paper by a Water Symposium speaker & discuss how their talk related to it</i>
26 November	Humans and streams (dams and dam removal)	Chapter 10	<i>Pizzuto / Walter and Merritts response due Grad presentations</i>
3 December	Fluvial geomorphology in a changing world		<i>Grad presentations Grad papers</i>
12 December	Final Exam, 12:45- 3 pm		