Fluvial Geography

EUGS 352, GEOS 352, EUGS 504 Spring 2009

Lecture: Tuesdays & Thursdays, 10:00 to 11:15 Mallory 265

Professor: Dr. Josh Galster
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Office hours: Tuesdays, 11:15-12:15
Thursdays, 12:00-1:00, or by appointment

Class Summary and Course Goals: Fluvial Geography is designed to expose students to the processes and forms of river and watersheds. This analysis will occur at a variety of spatial and temporal scales. The first half of the course will introduce the basic mechanisms and concepts that govern fluvial systems, and then more detailed examinations of individual rivers and watersheds will occur. By the end of the course, my goal is for you to understand concepts such as:

- The connections between rivers and their watersheds
- What the common fluvial landforms are and why the occur
- Flooding and flood mitigation
- River erosion and deposition
- Water pollution and remediation

Required Text and readings: Fluvial Forms and Process, by David Knighton, is the textbook. Other readings will be posted to Blackboard (www.blackboard.montclair.edu) or online.

Materials: Notebooks and pencils/pens required for lab and lecture. Materials needed for field trips will be discussed.

Class attendance and activities: I don't take attendance in class. However, as this is an advanced course I expect you to rarely miss class. If absences become commonplace I will discuss this situation with you, and missing more than 4 classes without previous arrangements will result in you receiving an "F" for this class. There will be certain in-class activities that you will NOT be able to make up if you are absent.

Exams: There will be 2 in-class exams and a final exam. The final exam will focus on the material covered in the last part of the course but will include other material presented throughout the semester. Unless there are dire circumstances, make-ups will not be provided for tests or other assignments without prior arrangements. The in-class exams are worth 30% (15% each) of your total grade, and the final exam is worth 20% of your final grade.

Grading: Here is the breakdown for how your final grade will be calculated:

Homework:	25%
Midterm:	15%
Paper summaries:	20%
Field trips:	10%
In-class activities:	5%
Participation/discussion:	5%
Final EXAM:	20%
TOTAL:	100%

Final grades are determined on the standard system:

A:	>93%
A-:	90 to <93%
B+:	87 to <90%
B:	83 to <87%
B-:	80 to <83%
C+:	77 to <80%
C:	73 to <77%
C-:	70 o <73%
D+:	67 to <70%
D:	63 to <67%
D-:	60 to <63%
F:	<60%

Academic honesty: I expect your final grade in this course to reflect the effort and thought **you** put into it. I further expect each of you to hold yourself to the highest standard when it comes to academic integrity. On group assignments I encourage sharing and collaborating, but there are certain exercises when you and you alone are responsible for the work. If you have any questions about this policy, please just ask me or the TA.

This is directly from the university's code of conduct: *"Academic dishonesty is any attempt by a student to submit as his/her own work that which has not be completed by him/her or to give improper aid to another student in the completion of an assignment, i.e., plagiarism. No student may intentionally or knowingly give or receive aid on any test or examination, or on any academic exercise, that requires independent work.*"

For a complete list see: http://www.montclair.edu/deanstudents/regulations1.html#violations

Fluvial Geography (EUGS/GEOS 352): subject to change, so pay attention! Reading from Knighton unless otherwise specified

WEEK	DAY	DATE	CLASS #	TOPIC	READING
1	Tue	Jan 20	1	Welcome to the course, overview of rivers and watersheds	
1	Thu	Jan 22	2	Watersheds and drainage networks	Knighton, 1 – 8
2	Tue	Jan 27	3	Watersheds and drainage basins	p. 20 – 24
2	Thu	Jan 29	4	Determining drainage basin size	
3	Tue	Feb 3	5	Precipitation, infiltration, runoff, ET	http://ga.water.usgs.gov/edu/watercyclerunoff.html http://ga.water.usgs.gov/edu/watercycleinfiltration.html
3	Thu	Feb 5	6	Hillslopes and channel initiation	p. 24 – 36
4	Tue	Feb 10	7	Groundwater and stream baseflow	p. 68 – 72
4	Thu	Feb 12	8	Land use change and runoff	p. 320-322; http://www.epa.gov/owow/nps/urbanize/report.html
5	Tue	Feb 17	9	Flow characteristics	p. 75 – 80, 96 – 101
5	Thu	Feb 19	10	Sediment erosion	p. 80 – 95; 118 – 129
6	Tue	Feb 24	11	Sediment deposition	p. 141 – 150
6	Thu	Feb 26	12	River landforms	p. 193 – 207, 213 - 230
7	Tue	Mar 3	13	River gradient and long profile	p. 242 – 245
7	Thu	Mar 5	14	Watershed evolution over time	p. 261 – 271
8	Tue	Mar 10	15	Tectonics and watersheds	
8	Thu	Mar 12	16	Flooding and hazards	75 – 77; 295 – 302
	Tue	Mar 17		SPRING BREAK	
	Thu	Mar 19		NO CLASS	
9	Tue	Mar 24	17	NO CLASS	
9	Thu	Mar 26	18	**Midterm**	
10	Tue	Mar 31	19		
10	Thu	Apr 2	20	Reservoirs, withdrawals, water rights	Graff 1999
11	Tue	Apr 7	21	Rosgen method	Simon et al. 2007 (3x)
11	Thu	Apr 9	22	River restoration	***Guest speaker***
12	Tue	Apr 14	23	Megafloods	Montgomery et al. 2004
12	Thu	Apr 16	24	Climate change	Palmer et al. 2007
13	Tue	Apr 21	25	Floods and flooding	Magilligan and Nislow 2001;Collins 2009
13	Thu	Apr 23	26	Planetary geomorphology	
14	Tue	Apr 28	27	River pollution	
14	Thu	Apr 30	28	Rivers and aquatic life	
15		TBA		**FINAL**	

Date	Leaders	Reading
Apr 2	Josh	Graff 1999
Apr 7	Anthony, Jessica, Niyi, Andy, Dan	Simon et al. 2007 (3x)
Apr 9	Brian Cowden, Trout Unlimited	***Guest speaker***
Apr 14	Vanessa, Darryl, Jared, Anthony, Matt	Montgomery et al. 2004
Apr 16	Aslan, Tarique, Darryl, Niyi	Palmer et al. 2007
Apr 21	Jessica, Vanessa, Matt, Jared, Amanda	Magilligan and Nislow 2001;Collins 2009
Apr 23	Elyse, Andy, Dan, Aslan, Michael	Fairen et al 2003
Apr 28	Amanda, Tarique, Dave E., Lauren, Dave S., Christina	Donovan et al 2008
Apr 30	Elyse, Dave E., Christina, Dave S., Lauren, Michael	Schimdt et al 1998; Whitcraft et al 2007
TBA	**FINAL**	