

Geol 755 – Environmental Measurement and Analysis, Spring 2012

Instructor: Dr. Raymond Torres, with Dr. Susanne Moskalski

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Office hours: Tuesday 12:00 – 2:00, or by appointment.

Lectures: T 3:30 – 6:30

Classroom: 604 EWS

Text: No required text, but we recommend *Fluvial Geomorphology* by Leopold, Wolman and Miller, 1966 (Dover Press, order online).

This class will involve learning about types of field instruments and data analysis typically used in surficial processes geology in fluvial, estuarine, and marsh environments. In this class most of our applications will be on coastal plain rivers. Classes will cover the functioning of the instruments, field practice in using them, and data analysis activities.

Lecture schedule:

Class	Topic
Jan 10	Class introduction, types of data, basic statistics
Jan 17	Echo sounders
Jan 24	Echo sounders
Jan 31	Surveying and GPS technologies
Feb 7	Surveying and GPS technologies
Feb 14	Time series analysis 1
Feb 21	Time series analysis 2
Feb 28	Meteorology data
Mar 6	River currents and discharge
Mar 13	Spring break
Mar 20	Current meters
Mar 27	Turbidity sensors
Apr 3	Sediment transport
Apr 10	Tidal data
Apr 17	Presentations
Apr 25	Final Exam 9AM

Field trips:

There will be several required field trips and outdoor classes, including three required weekend trips. Other one-day trips will be near Columbia. On each trip we will provide transport, and accommodations as needed.

Sat. Jan. 28 8-4, echo soundings in the Congaree River, Columbia
Sat. Feb. 4, 8-4, current readings in the Congaree River, Columbia
March 17-18, echo soundings reconnaissance, Altamaha River, GA
March 31-April 1, full survey, Altamaha River, GA
April 14-15, full survey, Neuse River, NC

Problem sets:

Some classes will involve in-class assignments, others will involve homework.

Grading:

Grades will be determined by problem sets (50%), a presentation (10%) a final exam (30%) and quizzes (10%).

Makeup exams can be arranged if you call me or arrange to see me in person about it ahead of time. Makeup requests after the date and time of the exam will require documentation from a doctor or other authority figure.

Letter grades will be assigned as such, and will not be curved:

Percentage	Grade
90-100	A
87-89	B+
80-86	B
77-79	C+
70-76	C
67-69	D+
60-66	D
0-59	F

Cheating or academic dishonesty of any kind will result in failure of the class.

Other important information:

1. Show up for class! I will make certain that downloading my lecture slides will not be sufficient to pass exams.
2. No cell phone usage in class. Do not text, tweet, call, play games, or whatever else.
3. Do not watch movies, play games, etc. on your laptops in class, either.

Learning Outcomes

By the end of the term, successful students should be able to do the following:

- Acquire data, and analyze data from a range of geophysical instruments.
- Find hydrologic data on the www and analyze those data.
- Quantitatively assess sediment transport.
- Perform basic time series analyses.