

Fall Semester 2010  
Earth & Environmental Sciences 444- Geophysics

Instructor: Carol Stein  
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Office hours: To be announced

CLASS: 1 PM - 2:15 PM; Tuesday and Thursday; room 2418 SES

REQUIRED BOOK: *Whole Earth Geophysics: An Introductory Textbook for Geologists and Geophysicists* by Robert J. Lillie, Prentice Hall, 1999.

GRADES:  $A \geq 85\%$ ;  $B \geq 75\%$ ;  $C \geq 65\%$ ;  $D \geq 55\%$ ;  $F < 55\%$

30% Homework: Late homework will received 50% credit. No homework will be accepted after that assignment has been graded.

10% Term Paper + presentation (Graduate students taking this course for 4 credit hours will do an additional term paper)

30% Test 1 (Tuesday, October 5, 2010)

30% Test 2 (Thursday, December 2, 2010)

This course is an introduction to basic principles of geophysics with applications to solid earth, exploration, and environmental problems. Topics covered include:

- general Earth properties (size, mass, and moment of inertia),
- gravity (gravity anomalies, isostasy, rheology, flexure, geodesy, and geoid),
- seismology (wave equation, P, S and, surface waves, earthquakes & focal mechanisms, tomography, seismic reflection and refraction),
- heat flow, geotherms, convection, and conduction.
- magnetics (dipole field, paleomagnetism, and seafloor spreading),
- electrical and electromagnetic methods and ground-penetrating radar,
- geophysical well logging, and
- radioactivity and geochronology.

TERM PAPER- Students should submit a geophysical topic for the term paper, in writing, and have it approved by Thursday October 14. No two students may have the same topic. Outlines for the paper must be submitted by Thursday October 28. The paper must be submitted by Wednesday December 8 at noon. It should be at least 10 pages of only text (double spaced; 1 inch margins, and 12 font type), and figures, plus references ( $\geq 6$  papers published on or after 1980). Also, students will give an oral presentation of their term papers towards the end of the term.

ACADEMIC INTEGRITY: Academic dishonesty will not be tolerated. In all work you must adhere to the guidelines regarding academic honesty as described in the UIC Student Handbook. Any student caught and proven to have committed an act of academic dishonesty in this class will receive a zero for the particular item, will fail this course, and may result in a recommendation to your college for dismissal from the University. Students are expected to turn in their own work. Students may discuss homework/lab problems with classmates. Copying is considered academic dishonesty. Similarly, it is academic dishonestly if you allow your work to be copied and then it is submitted for grade. Academic dishonesty includes, but is not limited to, obtaining solutions to homework/labs from any source (including the internet or copies of homework solutions from previous years), and obtaining copies of solutions manuals for instructors.

STUDENTS WITH DISABILITIES: Students with disabilities who require accommodations for access and participation in this course must be registered with the Office of Disability Services (ODS). Please contact ODS at 312-413-2183 (voice) or 312-413-0123 (TTY).

*Students may not use laptop computers, cell phones, or similar electronic equipment during class time.*