

**EAES 290 - Current Topics in Earth and Environmental Sciences
Fall Semester 2010**

Course meets: Wednesday 01:00 PM - 02:50 PM in SES 2418

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Office hours: To be announced

Required Book: *The Chicago Guide to Communicating Science* by Scott Montgomery;

Suggested reading: *On Writing Well* by W. Zinsser & *Scientific English* by R. Day

Blackboard: The class syllabus, assignments, PowerPoint presentations, and papers for class reading will be posted on blackboard.

Grading: written work (65%); class participation (20%); presentations (15%)

Course objectives: This course provides an introduction to reading, analyzing, and writing scientific papers and scientific oral presentations. We will use the Deepwater Horizon accident in the Gulf of Mexico and associated earth and environmental sciences issues as the starting point for class discussions, student presentations, and writing assignments. This course was previously listed as EAES 390. The prerequisite for this class is the completion of at least one 100-level course in earth and environmental sciences.

There are four required writing assignments, one abstract and three papers. The papers should be about four TYPED double-spaced pages of text (1 inch margins and 12 point Times New Roman font). These four pages do not include references, figures, and/or tables. For all but the fourth assignment, students will submit a first draft of each assignment two weeks prior to its final due date.

Assignment #1- Write an abstract (≤ 250 words) for an assigned paper.

Assignment #2- Write a paper based on a provided experiment.

Assignment #3- Write a paper on a previous oil spill or an area with large oil and/or gas deposits outside of the Gulf of Mexico.

Assignment #4- Each student will be assigned a topic (see page 2) for an oral presentation. The first draft of a paper based on your presentation is due one week after your talk. The final draft is due on Wednesday at 1 PM during Finals Week.

A scientific paper for each presentation topic will be assigned for all students to read. Some students in the class will be assigned to discuss the paper and the topic after each presentation.

Detailed information about the assignments will be distributed later in the term.

During class students may NOT use electronic devices such as cell phones and computers (except when giving PowerPoint presentations).

A tentative class schedule is on the next page.

Week/Day	SCHEDULE SUBJECT TO CHANGE!: Topic/Assignments
1/ Aug. 25	Introduction to class; Scientific writing & structure of a scientific paper
2/ Sept. 1	Assignment #1- Draft Abstract due Deepwater Horizon mess overview & science/policy issues
3/ Sept. 8	Discussion about oral presentations
4/ Sept. 15	Assignment #1 due Science Library Visit/Resources
5/ Sept. 22	Student presentations 1 & 2
6/ Sept. 29	Assignment #2- Draft of Paper 1 on experiment write up due Student presentations 3 & 4
7/ Oct. 6	Student presentations 5 & 6
8/ Oct. 13	Assignment #2- Paper 1 on experiment write up due Student presentations 7 & 8
9/ Oct. 20	Student presentations 9 & 10
10/ Oct 27	Student presentations 11 & 12
11/ Nov. 3	Bring 1st Draft of Assignment #3 for in class peer review
12/ Nov. 10	Assignment #3- 2nd Draft of Paper 2 due Student presentations 13 & 14 & 15
13/ Nov. 17	Student presentations 16 & 17 & 18
14/ Nov. 24	Assignment #3- Paper 2 due
15/ Dec. 1	Talk to the media
Finals Week/ Dec. 8th	Assignment #4- Final version of Paper 3 due Wednesday 1 PM during Finals Week

Topics & include a discussion relative to Deepwater Horizon.

1. What are oil and gas and why are they a good source of energy?
2. How do oil and gas form?
3. How to drill for it/technology at sea/blowout preventers?
4. What are gas hydrates, where are they found in marine environments?
5. Tectonic history of the Gulf of Mexico
6. Age of formation of the major oil and gas fields in the Gulf of Mexico
7. Salt deposits and tectonics in the northern Gulf of Mexico
8. Cold (gas) seeps in the Gulf of Mexico
9. Ocean circulation in the Gulf of Mexico (from surface to bottom water)
10. 3 Gulf of Mexico spills (Bouchard, Megaborg and Burmah Agate)+ effects
11. Gulf of Mexico dead zone (low oxygen area)
12. Underwater plumes from hydrothermal vents
13. Why and where are the underwater "plumes" of oil from this spill
14. How do dispersants work & effect of dispersants on this spill
15. Using bacteria to break down oil
16. Effect on ecosystems and oxygen levels from oil spills in ocean in water
17. Effect on ecosystems & O₂ levels from oil spills in ocean on adjacent land
18. Chixcalub Crater (If there are 18 students in this class.)