

**Spring 2009
Room 318**

Geology 4820

**John
Tu 11-12:15
Th 11-12:15 and 5-**

6:15

CAPSTONE

The purpose of this course is to affirm in students the idea that the Earth Sciences are a truly interdisciplinary field. Students will learn to critically examine 'landmark' papers and their influence on the Earth Sciences. In readings, discussion, and in oral and written presentations, you will gain a broad perspective on the impact of key discoveries on the field. Topics to be discussed include the age of the Earth, 'the new global tectonics', sequence stratigraphy, extinctions in the geologic record, chemical mass balance in rivers and oceans, and indeterminacy in Science.

The course will be run as two weekly meetings (Tuesday, 11-12:15, and Thursday (either 11-12:15 or 5-6:15) in Room 318). We will study one topic and associated paper(s) per week. Each Tuesday, a different member of the department faculty will give a guest lecture on the 'topic of the week' (relating to the specific assigned paper or papers), be it isotope geology, paleontology, hydrology, plate tectonics, or seismology. This will be followed by a brief question/discussion period. You are expected to have read the paper(s) and be prepared to ask questions in class each Tuesday. We will follow with a discussion of the historical significance of the paper, and its influence on the Earth Sciences. On Thursdays, you will prepare an outline of the paper and their comments (both good and bad), as well as a technical abstract summarizing the paper.

Weekly abstracts and summaries, and research paper:

Scientific writing is the major component of this course. The first full week of the course will be spent developing library research skills, as well as learning proper referencing and/or citation of published material. Each Thursday, students will be required to submit a concise outline of the weekly paper and any critical comments (both good and bad), as well as a technical abstract (~250 words) summarizing the paper. These summaries and abstracts will be graded and returned each week. You will have access to word processing and printing in the departmental MAC computer lab (ESB Room 1004, between 8-5 PM whenever not scheduled for regular classroom work). Simply log on as 'guest' and print your abstract and outlines.

****If you feel you want additional help with writing, the campus Writing Center is open M-Th 9-4, and Friday 9-3. You can make an appointment via e-mail: writing@uwyo.edu, or by calling 766-5250. The Center is located in Coe Library on the third floor.**

***Prompt completion of all assignments is required as a new topic will be introduced each week.**

The required text for the course is -

Strunk, W., Jr., and White, E.B., 2000, *The Elements of Style*, V. 4 (at the bookstore or the web)

In addition, you may want to pick up one of many, 'pocket reference guides' for writers (you may already have on from an English class). These are inexpensive and invaluable resources for writing in any field.

Additional references on reserve in the library include:

- 1) '*Chicago Guide to Communicating Science*', University of Chicago Press, by Scott L. Montgomery, 2003, 228 pages.
- 2) '*Suggestions to authors of reports of the United States Geological Survey - Seventh Edition*', revised and edited by Wallace R. Hansen.
- 3) '*Geowriting - a guide to writing, editing, and printing in Earth Science - Fifth Edition*', edited by Robert Bates and others, 1995

As part of the course each student will write a 10-page research paper on the topic of your choice related to the course. Each student will be required to have chosen a research topic, and write a paragraph outlining the subject they will be covering **by Thursday, February 19, 2009**. I will look through these paragraphs and return them with comments (both editorial and scientific). A draft of the paper will be **due April 13** (start of class). I will review each draft and return them, for revision as a final draft due **Tuesday, May 4 by 5 PM**. These final projects may be 'sent out' for review and evaluation by the appropriate departmental faculty member. Beginning in class **April 20, 2009** each student will have the opportunity to present their paper as a 12-minute talk for comments and evaluation.

Total writing required for this course is in excess of the 40 pages required for W-3 courses (24 pages weekly summaries and abstracts, 20 pages first and final draft of project), and is typical in scope and content of writing in the Earth Sciences.

Examinations and grading:

There will be no examinations. Grades will be based on class participation (20%), weekly abstracts/assignments (50%), and the research paper (30%). Be prepared to ask questions, discuss your opinions of topics in class, argue your point, and participate both during the lectures and discussions. The goal of the discussion is not to uncover the 'right' answer, but for each of you to explore their personal assumptions, beliefs and understanding. Weekly abstracts will be edited, graded, and returned immediately. Students are given the opportunity to rewrite any abstract for reediting and regrading (the highest grade will be recorded). Oral presentations will include peer (as well as instructor) review, and grading.

Course Outcomes: After taking this course, you should be able to –

- explore and expand your writing skills with an emphasis on interdisciplinary Earth Science topics,
- listen to and evaluate scientific lectures,
- critically assess scientific writing across Earth Science disciplines,
- verbally articulate your opinions, critiques, and analyses,
- identify the diversity of the Earth Sciences from a global perspective, and recognize that political boundaries are of no importance in the Earth Sciences

Your final project will serve as the culmination of your written work for this class. It will be reviewed and edited, as well as be 'sent out' to a faculty member 'expert' in the topic of choice. This external review will aid in assessment of how well the course goals have been met.

Prerequisites:

Junior standing, and 26 hours in the department.

Office Hours:

Room ESB 3010

Tu /Th 9-11

or by appointment (bjohn@uwyo.edu; phone 766-4232)