Syllabus for Earth Systems Science
Spring Term 2010
Professor Bruce Fegley, Jr.

My office is room 144 in the EPSc building. My office hours for class will be 2:30 - 4:00 PM, Tuesday and Thursday. My contact information is 935-4852, bfegley@wustl.edu. Laura Schaefer is the TA and her contact information is Tel: 935-6310, e-mail: laura_s@wustl.edu. Class will meet in EPSc 333 on Tuesdays and Thursdays from 1:00 to 2:30 pm. You will be assigned reading from scientific articles and book chapters distributed in class.

The course is a quantitative introduction to physical and chemical interactions among the atmosphere, oceans, and solid Earth. The applications of physical chemistry, in particular chemical thermodynamics and chemical kinetics, to these problems will be emphasized.

CALENDAR

1/19 & 1/21	Composition and structure of Earth's atmosphere HW #1 handed out 1/21, due 1/28
1/26 & 1/28	Chemistry of Earth's atmosphere I - review of chemical kinetics. HW#2 handed out 1/28, due 2/4
2/2 & 2/4	Chemistry of Earth's atmosphere - HW #3 handed out 2/4, due 2/11
2/9 & 2/11	Chemistry of Earth's oceans I - review of aqueous thermochemistry. HW#4 handed out 2/11, due 2/18
2/16 & 2/18	Chemistry of Earth's oceans II. HW#5 handed out 2/18, due 2/25
2/23 & 2/25	Terrestrial carbon cycle, greenhouse effect HW #6 handed out 2/25 due 3/4
3/2 & 3/4	Terrestrial S, N, and P cycles. HW#7 handed out 03/04, due 3/18
3/9 & 3/11	Spring Break - no class
3/16 & 3/18	Effect of the KT impact on the Earth HW #8 handed out 3/18, due 3/25
3/23 & 3/25	Bulk composition of the Earth HW #9 handed out 3/25 due 4/1
3/30 & 4/1	Chemistry of the solar nebula I - review of equilibrium calculations HW #10 handed out 4/1, due 4/8
4/6 & 4/8	Chemistry of the solar nebula II - HW#11 handed out 4/8, due 4/15
4/13 & 4/15	Planetary accretion models and chemistry during accretion of the Earth and formation of the Moon HW #12 handed out 4/15, due 4/22
4/20 & 4/22	Origin of Earth's atmosphere HW #13 handed out 4/22, due 4/29
4/27 & 4/29	Evolution of Earth's atmosphere and oceans over time

Grading will be based on 13 assignments (7% each, 91% total) and 9% from performance in class. Ninety % and above of the total points = A^-, A, A^+; 80-90% = B^-, B, B^+, etc.