SYLLABUS Spring 2016
Biogeochemistry – SIO 267
Tues. - Thurs. 11:00-12:20 pm
Vaughan Hall 328

Instructors:
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Prerequisites: *SIO 260 (Marine Chemistry), Inorganic Chemistry, Calculus*
Texts: *Ocean Dynamics and the Carbon Cycle*, Williams and Follows (2011) Cambridge University. Press.
Biogeochemistry, Second Edition, Schlesinger (1997) Academic Press
Earth System Science, Jacobson et al. (2000) Academic Press

Units: 4. Grade: Letter grade only; 25% problem sets, 25% Midterm, 50% Final Exam

Date			Lecture	Required reading prior to lecture
Tue Mar 29	J	1.	Course overview	
Thu Mar 31	J	2.	Isotope basics	Earth System Science Chap. 4.1-4.2
Tue Apr 5	J	3.	Hydrological cycle & isotope	Earth System Science Chap. 7 Earth System Science Page 471
Thu Apr 7	R	4.	Box models & transport	Williams and Follows, 3.1-3.2
Tue Apr 12	J	5.	Radiocarbon: tracer and clock	Greenhouse Puzzles Part I
Thu Apr 14	J	6	Aqueous chemistry of CO_2	Williams & Follows, 6.1-6.3
Tue Apr 19	R	7.	Aqueous chemistry of CO_2	
Thu Apr 21	R	8.	Anthropogenic carbon	Williams & Follows, 6.5
Tue Apr 26	R	9	Ocean acidification	
Thu Apr 28	R	10.	Calcium carbonate chemistry	Earth System Science Chap. 10
Tue May 3			MIDTERM	
Thu May 5	J	11.	Methane & N2O	Earth System Science Chap. 17
Tue May 10	R	12.	Carbon sinks and feedbacks	Biogeochemistry Chap. 5
Thu May 12	R	13.	Air-sea gas exchange	Williams & Follows, 6.6
Tue May 17	R	14.	CO_2 on 10^6-yr timescales	
Thu May 19	J	15.	Why was glacial CO_2 lower?	
Tue May 24	J	16.	Ice core climate records	Earth System Science Chap. 18
Thu May 26	J	17.	Dole Effect	
Tue May 31	R	18.	Regulation of atmospheric O_2	
Thu Jun 2	J	19.	Snowball Earth	

Tue Jun 7 Final Exam 11:30 a.m. - 2:29 p.m

Homework: Sets will be given out roughly weekly. Return as paper copy (not Email), and in essay format (not printed from spreadsheet).