

GEOL 1510/2510: Aquatic & Sedimentary Geochemistry

Thaw B-9, MW 2:15 – 3:30

Prof: Josef Werne

Office: SRCC 505

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Office Hours: MW 3:30-4:30 or by appointment

Required Text:

Environmental and Low Temperature Geochemistry, Peter Ryan –free @ Pitt Library Reserve

Recommended Supplemental Texts:

Marine Geochemistry, Schulz & Zabel

Chemistry of the Sea, Pilson

Chemical Oceanography, Emerson & Hedges

Marine Biogeochemistry, Libes

Geobiology, Canfield

Tentative schedule of topics. Topics and/or readings may change at any time due to course pace and student backgrounds and interests. You will be given notice of changes.

Week	Topics
1-Aug 25-27	Introduction & Overview; Chemistry of Water
2-Sept 3	Monday Labor Day; Salinity & Major Ions
3-Sept 8-10	Dissolved Gases; Acid/Base Chem/DIC
4-Sept 15-17	DIC & Carbonate Chemistry; Nutrients
5-Sept 22-24	Primary Productivity; Redox
6-Sept 29-Oct 1	Trace Elements; Discussions of special topics
	TAKE HOME EXAM I
7-Oct 6-8	Minerals & Sediments; Pore Water Geochemistry
8-Oct 13-15	Stable Isotopes; Microbial Geochemistry
9-Oct 20-23	Organic Matter Accumulation; Diagenesis
10-Oct 27-29	Chemical Weathering; Biogeochemical Cycles
11-Nov 3-5	Biogeochemical Cycles Cont; Discussions of special topics
	TAKE HOME EXAM II
12-Nov 10-12	Discussions of special topics
13-Nov 17-19	Discussions of special topics
Nov 24-26	<i>Thanksgiving Break</i>
14-Dec 1-3	Discussions of special topics; Term Paper Due

Readings: In addition to the background readings from texts and other sources that will be handed out, short journal articles will be distributed. These are to be read and “reviewed” by you as if you are the editor determining whether the paper should be published. For each of these additional papers, a 1-page review is to be turned in. At least once, and likely several times, each student will be selected to carry out a more in-depth review and lead a 15-20 minute discussion of the selected paper in class.

Grading: Exam 1: 25%, Exam 2: 25%, Term Paper: 25%, Assignments & Class Participation: 25%

Diversity Statement: In this course, students, faculty and guests represent diverse perspectives, backgrounds, and experiences, which enriches our classes. Individuals of all races, colors, ancestries, sexes, marital status, familial status, ages, backgrounds, beliefs, ethnicities, gender identities and expressions, national origins, religious or political affiliations, sexual orientations, abilities, and other visible and nonvisible differences are welcomed. Every person in this classroom should feel responsible for creating a space that is intellectually rigorous and is a respectful, welcoming and inclusive environment for every individual. We urge all to be mindful of the ways that our identities position us in the classroom. While intellectual disagreement may be constructive, no harsh statements, or demeaning or discriminatory behavior will be permitted. If you feel uncomfortable, please feel free to approach me to discuss the situation.

In this class, we will have the chance to indicate the name that we prefer to be called and, if we choose, to identify pronouns with which we would like to be addressed. I will do my best to address and refer to all students accordingly and support classmates in doing so as well. I will endeavor to use gender-inclusive and nondiscriminatory language in all course communication and materials. Your suggestions for how to improve the effectiveness of the course for you personally or for other student groups are encouraged and appreciated. Our faculty is committed to communication from students without judgement. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.