Environmental Aquatic Chemistry (CHM 413)
The chemistry of natural waters
W 6-9 PM Winter 09

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Prerequisites: CHM 158.  CHM 234 recommended
Requirements: computer for homework assignments: software will be provided (free)
Purchase Coursepack

Grading
Two quizzes, each 20% of the grade + 1 Final for 40% of grade, Homework = 20%
Grading on a scale based on percentage. For example, ≥95% = 4.0

Topics:
For Quiz 1
Thermodynamic principles, activity coefficients
Mass balance equations
Equilibrium calculations
Intro to acid/base chemistry
Carbonate Chemistry

For Quiz 2
Dissolution/Complexation/Precipitation
redox reactions
adsorption/equilibrium isotherms
Water Treatment
Radiometric dating

Important Semester Dates
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>January 15</td>
<td>FIRST CLASS MEETS</td>
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<tr>
<td>February 25</td>
<td>WINTER RECESS – No class</td>
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<td>April 22 (wed)</td>
<td>FINAL 7-10 PM</td>
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Expectations:
(1) Develop a general knowledge of the field (dissolution, complexation, and precipitation of inorganic constituents in the environment; redox reactions; acid/base titrations; sorption processes of organic and inorganic chemicals in the environment)
(2) Be able to do practical calculations (algebra and basic calculus)
(3) Be able to work with simple computer models
(4) Be able to read and understand current journal articles in the field
Policy on Academic Misconduct
The University's regulations that relate to academic misconduct will be fully enforced. Any student suspected of cheating will be referred to the Academic Conduct Committee. Students found guilty of academic misconduct face suspension or permanent dismissal.

Suggested Reference Books:

Stumm and Morgan, "Aquatic Chemistry". Wiley publisher. (As good as any).

Pankow, J. "Aquatic Chemistry Concepts". Lewis Publisher. (Boring, but cheap).

Snoeyink and Jenkins "Water Chemistry" (good, but expensive)

Morel and Hering "Principles and Applications of Aquatic Chemistry". Wiley publisher.

Websites: use the web to search for subject materials.