

CIE 653
Applied Aquatic Chemistry
Spring 2019
Wednesday and Friday 10:35AM – 11:55PM
151A Link Hall

Instructor: Charles T. Driscoll
 462E Link Hall
 Office Hours: W, F 2:30 – 3:30 PM

Text: Principles and Applications of Aquatic Chemistry, Morel and Hering, 1993

Course Grading:	Homework	-	20%
	Class Project	-	20%
	Midterm Examination	-	25%
	Final Examination	-	35%

<u>Section #</u>	<u>Lecture Outline</u>	<u>Reading Chapter</u>	<u>Supplemental Reading</u>
	Introduction, Chemical Nature of Water	-	
1	Mole Balance, Components	1	
2	Chemical Thermodynamics	2	
	Chemical Thermodynamics	2	
	Chemical Activity	2	
3	Solution of Chemical Equilibrium Problems (review of acid-base chemistry)	4	
	Chemical Equilibrium Models	-	
4	Acid Neutralizing Capacity, Base Neutralizing Capacity	-	
	Deffeyes Diagrams	-	Deffeyes, 1965
	Organic Acid Systems	-	Fakhraei and Driscoll, 2015
5	Dissolution and Precipitation	5	
6	Introduction to Coordination Chemistry	6	
	Metal Organic Interactions	-	
	Determination of Stability Constants	-	
	Bioavailability of Metals	-	
7	Oxidation – Reduction Phenomena	7	
	Solution Surface Interactions	10	

Course/travel conflicts

Friday, February 1 tentative Monday February 18 2:15 – 3:35pm

Wednesday, March 6 tentative Monday, February 25 2:15 – 3:35pm

(Maybe Friday March 22) tentative Monday, March 4 2:15 – 3:35pm

Wednesday, March 27 tentative Monday, March 18 2:15 – 3:35pm

Wednesday, April 3 tentative Monday, April 1 2:15 – 3:35pm

Friday, April 5 tentative Monday April 8 2:15 – 3:35pm