

ENVE 641/CHEM 605 (3 credits)
Aquatic Chemistry
FALL 2015, Duckering 341

Instructor

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Email:

Final grades will be awarded according to the following scale:
95-100 **A**; 90- <95 **A-**; 85 - <90 **B+**; 80 - <85 **B**; 75-<80 **B-**;
70 - <75 **C+**; 65 - <70 **C**; 55-<65 **D**; <55 **F**

Either the weighted percentages or a curv

xThe body of the paper should provide a review of information from the literature relevant to understanding the problem from a chemical perspective (structure, thermodynamics, kinetics).
xYour conclusions must include a critical assessment of the literature on your topic.

8.

Overview of Course Topics:

- xBasic aquatic chemistry principles (Ch-1)
- xReview of chemical kinetics, equilibrium (Ch-2, 3)
 - o Reactivity, activity
 - o Kinetics, rate constants, reaction rates
- xReview of chemical thermodynamics (Ch-4)
 - o Free energy, chemical potential and equilibria
- xAqueous speciation (Ch-5, 6, 7)
 - o Acid-Base equilibria
 - o pC/pH diagrams
- xCarbonate chemistry (Ch-8, 9)
 - o Buffering and Alkalinity
- xChemistry of aqueous metals (Ch-10, 11, 12)
 - o Complexation
 - o Solubility and precipitation
 - o Redox chemistry
 - o pE/pH predominance diagrams
- xHeterogeneous chemistry (Ch-13)
 - o Environmental interfaces and adsorption reactions