Tennessee Technological University
Department of Civil & Environmental Engineering
CEE 6610 – Applied Environmental Chemistry

2017 Catalog Data:	CEE 6610: Applied Environmental Chemistry, Lec 2, Lab 3 Credit 3. Theoretical concepts from inorganic, organic, physical, and biological chemistry as applied to the analysis of environmental engineering problems.
Required Textbook:	Suggested Sawyer, McCarty & Parkin, "Chemistry for Environmental Engineering and Science," 5th ed., Wiley.
Faculty Coordinator:	Lenly Weathers, Associate Professor of Civil Engineering
Prerequisites:	Consent of Instructor
Goal:	To develop an understanding of the chemical processes occurring in the natural environment and in water and wastewater treatment systems.

Course learning objectives:

1. To develop and understanding of fundamental principles of environmental chemistry.
2. To be able to apply basic principles of environmental chemistry to environmental engineering problems.

Major Topics Covered:

3. Basic concepts; Chemical equilibrium
4. Chemical kinetics
5. Acid-Base equilibria
6. Titration, buffering and alkalinity
7. Precipitation: solid-water equilibria
   Oxidation-reduction reactions.

Measurable outcomes:

Students will be expected to:

1. Solve general chemical equilibrium problems.
2. Solve acid-base problems.
3. Solve problems that involve the concept of alkalinity.
4. Solve simple coordination chemistry problems.
5. Solve precipitation and dissolution problems.
6. Solve oxidation reduction problems.
7. Solve problems involving the distribution of chemicals in multiphases.