



## CHEM 114

COURSE NAME / NUMBER

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**LEARNING OBJECTIVES / GOALS / OUTCOMES/ LEARNING OUTCOMES:**

Students will become familiar with the basic concepts of chemical thermodynamics and the principles of aqueous equilibria. They will understand the structure and isomerism of organic compounds and their reactivity. They will be able to display their expertise in understanding the lecture material and handling the laboratory equipment.

**METHODS:**

Lectures, labs, group problem-solving sessions.

**PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):**

Credit can be awarded for this course through PLAR      YES   X        NO   

**METHODS OF OBTAINING PLAR:****TEXTBOOKS, REFERENCES, MATERIALS:**

Brown and LeMay, *Chemistry*

**SUPPLIES / MATERIALS:****STUDENT EVALUATION:**

Labs	20%
Assignments and tests	80%

**COURSE CONTENT:**

1. Principles of thermodynamics. First and second laws. Enthalpy, entropy, and Gibbs energy. Nernst equation. Electrochemistry.
2. Equilibria. Aqueous equilibria. Solubility. Acids and bases. Buffers.
3. Alkanes: structure, isomerism, reactivity.
4. Stereochemistry of cyclic and acyclic alkanes.
5. Alkenes: structure, isomerism, reactivity.
6. Alkynes: structure and reactivity.
7. Aromatic hydrocarbons: structure and reactivity.