

CHEM 241COURSE NAME / NUMBER

LEARNING OBJECTIVES / GOALS / OUTCOMES/ LEARNING OUTCOMES:

Students will become competent with a variety of analytical techniques. 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 _____ NO X

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

D.C. Harris, *Quantitative Chemistry Analysis*, 5th ed., Freeman, 1999.

SUPPLIES / MATERIALS:**STUDENT EVALUATION:**

Labs	30%
Midterms	30%
Final	40%

COURSE CONTENT:

1. Data and sample handling.
2. Principles of solution equilibria.
3. Gravimetric analysis.
4. Titrimetry: neutralization, redox, precipitation, and complex-formation.
5. Introduction to electrochemistry.
6. Electrochemical methods: potentiometry, conductometry, coulometry, voltammetry, amperometry.
7. Introduction to chromatography.

LABORATORY EXPERIMENTS:

1. Gravimetric Lab.
2. Standard solutions
3. Neutralization titration lab.
4. Redox titration lab.
5. pH titration lab.
6. Potentiometric precipitation titration.
7. Conductometric titration lab.
8. TLC lab.
9. GC labs.