

CHEM 105, Introductory University Chemistry II

3 credits, 4 hours lectures, 3 hours lab every second week.

3.8 Engineering units for the University of Alberta

Course Description

Rates of reactions, thermodynamics and equilibrium, electrochemistry and modern applications of chemistry.

Pre and Co-requisites

Prerequisite: CHEM 103

NOTE: CHEM 105 is restricted to Engineering students only.

Course Learning Outcomes (CLOs)

Upon successful completion of the course, the student shall be able to:

CLO1 Perform analytical and chemical kinetics experiments using laboratory equipment, and use proper laboratory safety procedures.

CLO2 Explain chemical processes using physical chemistry methods, either employing the kinetics approach or the thermodynamics approach.

CLO3 Analyze chemical equilibrium using Le Châtelier's principle, and perform equilibrium calculations using an ICE table for acid-base equilibria, solubility equilibria, and complex ion equilibria.

CLO4 Explain electronic configurations of coordination compounds using Crystal Field Theory, and correlate it with their properties like color and paramagnetic-diamagnetic character.

CLO5 Understand how the electrochemical cells operate, calculate their standard potential, and correlate the potential to the ionic concentrations in each half cell using Nernst equation.

Evaluation

Assessment Type	Percentage
Assignments	5%
Laboratory	25%
Midterms Exams	30%
Final Exam	40%

Course Completion Requirements

Minimum passing mark of D or 50% is required.

Grading Scale

4.0 Grade Scale	Alpha Grade	Percentage Grade
4.0	A+	93-100
4.0	A	85-92.9
3.7	A-	80-84.9
3.3	B+	77-79.9
3.0	B	74-76.9
2.7	B-	70-73.9
2.3	C+	67-69.9
2.0	C	64-66.9
1.7	C-	60-63.9
1.3	D+	55-59.9
1.0	D	50-54.9
0.0	F	0-49.9

Land Acknowledgement

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Course Outline Review Date: June 2025