CHEM 030 Course Outline

5 credits, 6 hours lecture, 2 hours lab on alternate weeks

Course Description

Chemistry 030 begins with a review of Chemistry 025, followed by a study of enthalpy changes and calorimetry; equilibrium Bronsted-Lowry acid-base theory and acid-base titrations: oxidation-reduction reactions and electrochemical cells, and organic chemistry, including organic reactions and nomenclature of hydrocarbons, aromatics and other functional groups.

Pre and Co-requisites

Prerequisites: CHEM 025 or equivalent or permission from the Program Chair.

Course Learning Outcomes (CLOs)

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

CLO 1 use balanced chemical equations to indicate the quantitative relationships between reactants and products involved in chemical changes.
CLO 2 use stoichiometry in quantitative analysis.
CLO 3 communicate, calculate, and interpret energy changes in chemical reactions.
CLO 4 explore classes of organic compounds as a common form of matter.
CLO 5 describe chemical reactions involving organic compounds.
CLO 6 explain that there is a balance of opposing reactions in chemical equilibrium systems.
CLO 7 determine quantitative relationships in simple equilibrium systems.
CLO 8 describe acidic and basic solutions qualitatively and quantitatively.
CLO 9 explain the nature of oxidation-reduction reactions.
CLO 10 apply the principles of oxidation-reduction to electrochemical cells.
CLO 11 show concern for safety in planning, carrying out and reviewing laboratory activities, referring to the Workplace Hazardous Materials Information System (WHMIS) and consumer product labels.
CLO 12 work collaboratively in planning and carrying out laboratory investigations and in generating and evaluating scientific ideas.

Evaluation

Assessment Type	Percentage
Assignments and quizzes	20%
Laboratory reports	15%
Lab Exam	5%
Midterm Exam (Units 1, 2, and 3)	30%
Final Exam (Units 4 and 5)	30%

Course Completion Requirements

Minimum passing mark of 50% or D 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

We respectfully acknowledge that Keyano College is on Treaty No. 8 Territory, the ancestral and traditional territory of the Cree, Dene, and Métis people.

Review Date: March 4, 2024