COQUITLAM COLLEGE
Established 1982

COURSE OUTLINE

Effective Semester: Spring 2024

COURSE INFORMATION

Course Title: Introduction to Chemistry **Course Number:** CHEM 110 **Credits:** 3

Total Weeks: 14 (Fall, Spring)
12 (Summer)

Total Hours: 39

Course Level: ☒ First Year ☐ Second Year
☐ New ☐ Revised Course
☐ Replacement Course

Department: Sciences **Department Head:** S. Girdhar **Former Course Code(s) and Number(s) (if applicable):** N/A

Pre-requisites (If there are no prerequisites, type NONE): MATH 12 or equivalent

Co-requisite Statement (List if applicable or type NONE): NONE

Precluded Courses: N/A

COURSE DESCRIPTION

This course introduces the general concepts of chemistry, including atomic structure, nomenclature, chemical reactions, stoichiometry and calculations, chemical bonding, liquids, solids and solutions, kinetics, and equilibrium. There is no laboratory component to this course. Students interested in taking CHEM 101 should take CHEM 100 instead of CHEM 110.

LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:

- Demonstrate a firm grasp of the knowledge of chemistry, as specified in course syllabus and objectives.
- Identify the relationships between chemistry and other science disciplines, and the applications of chemistry in society. Identify the impact of chemistry on our life and the world around us.
- Solve chemistry problems using mathematical and computational tools.
- Understand and use the correct vocabulary necessary to communicate specific chemical information to other chemists and non-chemists.
- Understand the bases of the electronic structure of atoms and its relationship to the periodic table of the elements.
- Be able to identify the types of molecular bonds and shapes of simple molecules.
- Understand the factors governing the kinetics of chemical reactions.
- Comprehend and test the equilibria of various systems, both homo- and heterogeneous, as related to gases, acids, and bases.
- Understand the fundamentals of oxidation-reduction reactions. Be able to recognize and balance a redox reaction.

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INSTRUCTION AND GRADING

Instructional (Contact) Hours:

Type	Duration
Lecture	39
Seminars/Tutorials	
Laboratory	
Field Experience	
Other (*specify):*	
Total	39

Grading System: Letter Grades ☒ Percentage ☐ Pass/Fail ☐ Satisfactory/Unsatisfactory ☐ Other ☐

Specify passing grade: 50%

Evaluation Activities and Weighting (total must equal 100%)

Assignments: 14% *Specify number of, variety, and nature of assignments:* *Content Summaries: 7 %* *Worksheets: 7 %*	Lab Work: %	Participation: 6% *Specify nature of participation:* *Attendance and active contribution to class discussions*	Project: % *Specify nature of project:*
Quizzes/Test: %	Midterm Exam 1: 20% Midterm Exam 2: 20%	Final Exam: 40%	Other: % *Specify:*

TEXT(S) AND RESOURCE MATERIALS

Provide a full reference for each text and/or resource material and include whether required/not required.

OpenStax College, Chemistry OpenStax College. Latest version.

COURSE TOPICS

List topics and sequence covered.

Week	Topic	Chapter
Week 1	Scientific Method, Measurements and Calculations	1
Week 2	Matter, Elements, Atoms, Ions, Chemical Nomenclature	2
Week 3	Modern Atomic Theory	6
Week 4	Midterm 1	
Week 5	Chemical Composition; Solutions	3

Week 6	Chemical Reactions	4
Week 7	Chemical Quantities and Stoichiometry	4
Week 8	Midterm 2	
Week 9	Energy and Heat Capacities; Phase Transitions	5; 10
Week 10	Chemical Bonding	7
Week 11	Kinetics and Equilibrium	12-13
Week 12	Acids and Bases	4
Week 13	Review	
Week 14	**FINAL EXAM**	

NOTES

1. Students are required to follow all College policies. Policies are available on the website at: Coquitlam College Policies
2. To find out how this course transfers, visit the BC Transfer Guide at: bctransferguide.ca

Last Reviewed: September 2023
Last Revised: September 2023