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# CHEM 1061: Introductory Chemistry - Part 1

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## EFFECTIVE DATE

January 2018

## DEPARTMENT

UT Sciences

## DESCRIPTION

This course is designed to introduce the student to the basic concepts of chemistry through lecture and laboratory activities. The content includes the scientific method, measurements, safety measures in a laboratory environment, density, elements and compounds, properties of matter, early atomic theory, atomic mass, nomenclature, percent composition, mole and molar mass, balancing equations, stoichiometry, gases, and heat in chemical reactions. Both Chemistry 1061 and Chemistry 1071 are required for covering the chemistry topics contained in high school courses up to and including the Grade 11 level. It is recommended that Chemistry 1061 be taken before or at the same time as Chemistry 1071.

## CREDITS

3.0

## YEAR OF STUDY

1st Year Post-secondary

## PREREQUISITES

• English 10 or equivalent • Precalculus 11 (successfully completed within the last 3 years, a minimum score of 72% on the Intermediate Algebra Math Assessment, or equivalent). If the math prerequisite is not met, MATH 0861 or MATH 1061 must be taken at the same time as CHEM 1061.

## COREQUISITES

None

## COURSE LEARNING OUTCOMES

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

- Demonstrate the concepts of precision and accuracy by utilizing significant figures
- Perform conversions with the SI system and using scientific notation
- Differentiate between the phases of matter and identify chemical or physical properties of substances
- Describe Dalton's Atomic Theory and the Law of Constant Composition

- Perform calculations including molar and formula mass, mole to mass conversions, and percent composition by mass of compounds
- Analyze the historical development of atomic theory
- Write names for compounds given the formulae and write formulae for compounds given the names for covalent compounds, ionic compounds, compounds containing polyatomic ions or transition metals, and acids
- Balance equations and perform stoichiometric calculations including mass-to-mass, limiting reagent, and percent yield
- Classify and predict single and double replacement reactions, combustion reactions, acid- base neutralizations, synthesis, decomposition, exothermic and endothermic reactions
- Perform experiments safely, collect and record data effectively, analyze and interpret data, and write formal reports

## PRIOR LEARNING ASSESSMENT & RECOGNITION (PLAR)

None

## HOURS

Lecture: 60

## INSTRUCTIONAL STRATEGIES

Class-based: Chemistry 1061 uses a lecture-based model. A significant amount of class time will be spent on hands-on activities, concept-development worksheets and problem-solving. A minimum of four labs will be conducted and will relate to the core topics.

## GRADING SYSTEM

Letter Grade (A-F)

## PASSING GRADE

D

## EVALUATION PLAN

Type	Percentage	Assessment activity
Assignments	5	
Lab Work	20	includes formal and informal lab reports
Exam	65	four tests at 15% to 20% each

Quizzes/Tests	10	5 quizzes for a total of 10%
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## COURSE TOPICS

- Scientific Method
  - Measurements
  - Safety Measures in a Laboratory Environment
  - Density
  - Elements and Compounds
  - Properties of Matter
  - Early Atomic Theory
  - Atomic Mass
  - Nomenclature
  - Percent Composition
  - Mole and Molar Mass
  - Balancing Equations
  - Stoichiometry
  - Heat in Chemical Reactions
  - Gases (optional)

## LEARNING RESOURCES

None

Notes:

- Course contents and descriptions, offerings and schedules are subject to change without notice.
- Students are required to follow all College policies including ones that govern their educational experience at VCC. Policies are available on the VCC website at:  
<https://www.vcc.ca/about/governance--policies/policies/>.
- To find out how this course transfers, visit the BC Transfer Guide at <https://www.bctransferguide.ca>.

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