

FACULTY of SCIENCE  
Department of Chemistry

SC/CHEM 1500 4.0 – INTRODUCTION to CHEMISTRY

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COURSE OUTLINE

The course serves as an introduction to chemistry for students needing a preparation for SC/CHEM 1000 3.0 and SC/CHEM 1001 3.0. The course offers a review of basic atomic theory, the periodic table, chemical bonding, elements and compounds, chemical reactions and stoichiometry, acids and bases, the pH scale, and simple organic compounds.

The course involves formal lectures, three lecture hours per week, three lab hours every second week and two tutorial hours every second week.

**Prerequisites:** Students are counseled to enroll in this course depending on previous chemistry experience.

**Course Instructor:** Valeria Tsoukanova

**Time and Location:** lectures – M, W, F 11:30 am – 12:30 pm LAS C  
tutorials – every second week (time and location as per tutorial section timetable)  
labs – alternate weeks with tutorials (time and location as per lab section timetable)

**Course Text:**

1. Petrucci R. H., Herring F. G., Madura J. D., Bissonnette C. *General Chemistry: Principles and Modern Applications. Custom Edition* for York University CHEM1000/1001/1500, 2<sup>nd</sup> ed.: Pearson Canada Inc., Toronto, 2014.
2. Petrucci R. H., Herring F. G., Madura J. D., Bissonnette C. *General Chemistry: Principles and Modern Applications. Custom Supplement* for York University CHEM1000/1001/1500, 2<sup>nd</sup> ed.: Pearson Canada Inc., Toronto, 2014.

**Course Objectives:**

The purpose of the course is to provide students with background chemistry knowledge. Topics include:

- review of measurements, significant figures, metric system
- elements and compounds, states of matter
- atoms, isotopes, ions and electrons, the periodic table
- the concept of mole and oxidation state
- molecular and ionic compounds, chemical formulas
- organic compounds, nomenclature, functional groups
- chemical equations and reaction stoichiometry
- solutions, molarity, acids and bases, the pH scale
- neutralization, precipitation and oxidation-reduction reactions

**Course Outcomes:**

Students will be able to:

- convert units of measurements and apply dimensional analysis skills
- identify and describe types of matter, elements, compounds and chemical reactions
- write chemical formulas and balance chemical equations
- apply the concept of mole and solve stoichiometric problems
- identify acids, bases, salts, and calculate the molarity and pH of their solutions
- predict the outcome of neutralization, precipitation and oxidation-reduction reactions

**Grading Scheme:**

The grading scheme for the course conforms to the grading system used in undergraduate programs at York. The final grade will be based on lab performance, in-class written midterm and final assessments. All course assessments will bear a number grade. Midterm assessments are intended to provide 20% of the final grade prior to the course drop deadline.

**IMPORTANT INFORMATION FOR STUDENTS**

All students are expected to familiarize themselves with University policies, procedures and regulations including

- Senate Policy on Academic Honesty
- Academic Accommodation for Students with Disabilities
- Student Conduct and Responsibilities
- Religious Accommodation

This information is available on the University webpage.