

Enquire Teaching Timetable

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Course Outcome

CHEM 1070 - Principles of Modern Chemistry

Learning Outcome

1. Students will understand the basic structures of atoms and simple molecules.
2. Students will be able to rationalize relative positions in the Periodic table, structures of molecules and the chemical properties of molecules.
3. Students will be able to calculate the heat released and absorbed during chemical reactions, related thermodynamic quantities to molecular properties and reactions, predict the equilibrium constant of chemical and phase transfer processes, calculate the solubility of compounds.
4. Students will appreciate the importance of chemistry in real life.
5. Students will realize that chemistry is an open-ended learning experience. They will want to continue learning throughout their lives.
7. Students will be more literate in science. They will develop a comfortable knowledge of science so that they can disseminate science (or pseudo-science) related news articles and/or sales pitches, instead of being intimidated or easily sold.

Course Syllabus

1. Introduction: Matter and Measurement
2. Atoms, Molecules and Ions
3. Basic Concepts of Chemical Bonding
4. Reaction Stoichiometry
5. Reactions in Aqueous Solution
6. Electronic Structure of Atoms
7. Periodic Properties of the Elements
8. Molecular Geometry and Bonding Theories
9. Gases, Liquids, Solids and Modern Materials
10. Thermochemistry and Chemical Thermodynamics
11. Chemical Equilibrium
12. Electrochemistry
13. Chemical kinetics

Assessment Type

	Assessment Type	Current Percent
1	Others	20
2	Short answer test or exam	80

Feedback for Evaluation

- A course questionnaire answered by every student after finishing all the lectures
- Reflections from teachers of courses:
- Feedback from informal conversation and correspondence with students after class

Required Readings

Recommended Readings

1. "Chemistry, the Central Science", by T.L. Brown, H. E. LeMay, B. E. Bursten, C. J. Murphy, P. M. Woodward; 13rd ed. 2014.
2. "Chemistry for Changing Times", 12th Ed., John W. Hill and Doris K. Kolb, Prentice-Hall (2009).