Course Instructors

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Lectures: Feb 1 – Feb 24
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Lectures: Apr 7 – May 5
Instructional Assistant (IA)

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Two Tutorial Sessions instructed by IA:
- One before Midterm Exam
- One before Final Exam

The exact date and time for these tutorials will be announced in due course.
Course Description and Pre-requisite

- Lectures: 9:00 – 10:20 am, Every Monday and Wednesday
- Venue: Interactive Online Lecture by Zoom Meeting, access through CANVAS

Meeting ID: 914-1460-4914
Password: chem1020
Course Description and Pre-requisite

Pre-requisites:

- HKDSE 1.0x Chemistry
- Or equivalent (Mainland JEE, Taiwan GSAT, IB Chem HL, SAT Chem, College Board AP, etc)
Course Description and Pre-requisite

- **Course Description:**
  This course targets students who have acquired more advanced knowledge in fundamental Chemistry in high school and is Part I of a **two-semester course** “General Chemistry”.

  [Part II (CHEM 1030) is offered every Spring term]

- **Key Topics:** atoms, atomic structures, chemical bonds, molecules, molecular structures, substances, chemical kinetics, energy

- **Supplementary Lab Course:** CHEM 1050 [0-0-3:1]
Course Outline and Textbook

- **Chapter 1**: Chemical Foundations
- **Chapter 2**: Atomic Structure and Periodicity
- **Chapter 3**: Bonding - General Concepts
- **Chapter 4**: Molecular Structure and Orbitals
- **Chapter 5**: Stoichiometry
- **Chapter 6**: Types of Chemical Reactions and Solution Stoichiometry
- **Chapter 7**: Chemical Energy
- **Chapter 8**: Gases

*Key Chapters!!*

S.S. Zumdahl; S. A. Zumdahl; D. DeCoste
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Course Grading

- Midterm Exam (Tentative Time: Week 9) 50%
- Final Exam 50%

NOTE:
- exams **cannot** be waived under any circumstances
- Exam questions will be similar to:
  - *End-of-chapter exercises.*
How to do well in this Course?

- Attend Lectures
- Pre-read, Read, and Review textbooks & lecture notes
- Do the Recommended End-of-Chapter Exercises
  - Hint: exam questions will be similar to these!!!
- Email instructor for course help
Lecture Notes and Lecture Videos

- Lecture Notes and Lecture Videos are posted on CANVAS system:
  - [http://canvas.ust.hk](http://canvas.ust.hk)
  - Login: ITSC username and password
Course Objectives

- Chemistry is a science that studies composition, structure, properties, and the changes (reactions) of matter.
Chemistry in our Daily Life

We encounter and use chemicals every day.
Chemistry is a central science. It is related to many modern technologies and industries.
Chemistry and Future

Global Warming Predictions

Temperature Increase (°C)

ADVANCED MATERIALS

New medicines
Intended Learning Outcomes

At the end of this course, you will be able to:

1. Describe and apply fundamental principles and terminologies of chemistry.
2. Develop a microscopic view of the world in terms of atoms and molecules and their change.
3. Describe and apply concepts of mass conservation and energy conversation in chemical changes.
4. Describe the atoms and ions in terms of atomic structure, atomic orbitals, electron configuration, and periodicity of chemical properties.
5. Describe molecules in terms of bonding theory, energy, molecular geometry and interactions.
6. Describe a chemical reaction from a thermodynamic point of views.
7. Describe the physical states and properties of gases.
8. Recognize and appreciate the impact of chemistry to our society.