

STUDENT COURSE OUTLINE - SCH 4U CHEMISTRY

Course Content

The SCH 4U course assumes a sound knowledge of the SCH 3U course and presents a variety of chemical topics in a significantly more rigorous way than does the grade 11 course. Its major purpose is as a preparation for university chemistry. Detailed objectives will be distributed for each section of study.

Review

Overall Expectations

- recall atomic structure and chemical bonding (ionic and covalent)
- demonstrate an understanding of quantum mechanical hybridisation and how it applies to the bonding model learned in SCH 3U
- apply their knowledge of hybridization with molecular shapes
- recall stoichiometry calculations

Structure and Properties of Matter

Overall Expectations

- assess the benefits to society and evaluate the environmental impact of products and technologies that apply principles related to the structure and properties of matter;
- investigate the molecular shapes and physical properties of various types of matter;
- demonstrate an understanding of atomic structure and chemical bonding, and how they relate to the physical properties of ionic, molecular, covalent network, and metallic substances.

Energy Changes and Rates of Reaction

Overall Expectations

- analyse technologies and chemical processes that are based on energy changes, and evaluate them in terms of their efficiency and their effects on the environment;
- investigate and analyse energy changes and rates of reaction in physical and chemical processes, and solve related problems;
- demonstrate an understanding of energy changes and rates of reaction.

Chemical Systems and Equilibrium

Overall Expectations

- analyse chemical equilibrium processes, and assess their impact on biological, biochemical, and technological systems;
- investigate the qualitative and quantitative nature of chemical systems at equilibrium, and solve related problems;
- demonstrate an understanding of the concept of dynamic equilibrium and the variables that cause shifts in the equilibrium of chemical systems.

Electrochemistry

Overall Expectations

- analyse technologies and processes relating to electrochemistry, and their implications for society, health and safety, and the environment;
- investigate oxidation-reduction reactions using galvanic cell, and analyse electrochemical reactions in qualitative and quantitative terms;
- demonstrate an understanding of the principles of oxidation-reduction reactions and the many practical applications of electrochemistry.

Organic Chemistry

Overall Expectations

- assess the social and environmental impact of organic compounds used in everyday life, and propose a course of action to reduce the use of compounds that are harmful to human health and the environment;
- investigate organic compounds and organic chemical reactions, and use various methods to represent the compounds;
- demonstrate an understanding of the structure, properties, and chemical behaviour of compounds within each class of organic compounds.

Procedures

What Should I Bring To Class?

All students are expected to bring to every class a loose-leaf binder and their textbook. You will be given a CD with all of the semester's notes on it. It is highly recommended that you print out the notes ahead of time. I will not let you out of class to print off copies of the day's notes. It is highly recommended that you only keep the current unit's notes, assignments, experiments, handouts and homework in your binder. Keep all of the old units' material in a safe place. Students should also bring a scientific calculator to every class.

Is There a Final Exam in This Class?

All students will be required to write the final examination at the end of the semester. There will be no exemptions! The work will cover all of the material covered in the entire semester.

What Happens If I Miss A Class?

In the event that a student is absent from class, it is the **student's responsibility** to get caught up. You should see me for missed handouts, notes, assignments, labs the first day you come back to. If you miss an assignment, you may be given an extension. Regardless, you are still responsible for the material covered. In the case of missed lab work, arrangements will be made to perform the experiment after regular school hours or at lunch.

How Do You Deal With Late Assignments/Labs?

If you hand in a lab report or assignment to me past the due date, a "late-fee" of 10% per school day will be applied. A zero will be assigned for any work handed in **after the marked work has been returned to the rest of the class**. I am usually a fast marker so get your work in on time. If you do hand in your work late, hand it to me PERSONALLY to avoid the possibility of confusion regarding your mark. This is important ... you should still hand in late assignments/labs regardless of your pending zero. It will avoid you being referred to credit rescue!

What Happens If I Miss A Test?

I understand that "things" happen and you will probably miss some of my classes. I put a lot of effort into making up tests and setting test dates that are as fair as possible. So I expect you to show me some common courtesy. If you know you are going to miss a test in my class, you MUST let me know BEFORE the test and make arrangements to write the test at a more convenient time. No further penalty will occur if you follow this simple rule. If you are sick the day of the test, have your parent/guardian call the school in the morning and leave a message **for me** (on my extension) that you will not be able to write the test or come in the next class with a doctor's note. If you miss a test for ANY REASON and DO NOT MAKE PRIOR ARRANGEMENTS, you will be given a zero with no chance to change that mark. There are a few exceptions and these will be handled on a case by case basis. (Death in the family, serious illness, ...)

Do You Give Make-Up Tests? Do You Drop Our Lowest Test?

No! You only have one shot to write a test so put maximum effort into studying. There is a huge difference between understanding the material and memorizing the material. Study accordingly.

Evaluation

Exam (in June)	30%
Knowledge (tests/quizzes)	24.5%
Enquiry (labs & ISU)	21%
Communication	14%
Connections (assignment)	10.5%