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| **Richview C. I.** | **1738 Islington Ave, Etobicoke, ON M9A 3N2** | **416-394-7980** |
|  | **sch 4u**  **Grade 12 UNIVERSITY CHEMISTRY**  **Course Outline (2016 – 2017)** | |

**Teacher**

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**Prerequisite** SCH3U (Chemistry – Grade 11, University)

**Curriculum Expectations**

This course enables students to deepen their understanding of chemistry through the study of organic chemistry, the structure and properties of matter, energy changes and rates of reaction, equilibrium in chemical systems, and electrochemistry. Students will further develop their problem-solving and investigation skills as they investigate chemical processes, and will refine their ability to communicate scientific information. Emphasis will be placed on the importance of chemistry in everyday life and on evaluating the impact of chemical technology on the environment

**Course Strands and Major Themes**

***Organic Chemistry***

* Organic compounds have predictable chemical and physical properties are determined by their respective structures.
* Organic chemical reactions and their applications have significant implications for society, human health, and the environment.

***Structure and Properties of Matter***

* The nature of the attractive forces that exist between particles in a substance determines the properties and limits the uses of that substance.
* Technological devices that are based on the principles of atomic and molecular structures can have societal benefits and costs.

***Energy Changes and Rates of Reaction***

* Energy changes and rates of chemical reactions are described quantitatively.
* Efficiency of chemical reactions are improved by applying optimal conditions.
* Technologies that transform energy can have societal and environmental costs and benefits.

***Chemical Systems and Equilibrium***

* Chemical systems are dynamic and respond to changing conditions in predictable ways.
* Applications of chemical systems at equilibrium have significant implications for nature and industry.

***Electrochemistry***

* Oxidation and reduction are paired chemical reactions in which electrons are transferred from one substance to another in a predictable way.
* The control and applications of oxidation and reduction reactions have significant implications for industry, health and safety, and the environment.

**Evaluation**

Final Mark = 70% term work + 30% Summative

**Weighting of Achievement Categories**

**Knowledge and Understanding 30%**

* knowledge of content (e.g., facts, terminology, definitions, safe use of equipment and materials)
* understanding of content (e.g., concepts, ideas, theories, principles, procedures, processes)

**Thinking, Inquiry, Problem Solving 25%**

* use of initiating and planning skills and strategies (e.g., formulating questions, identifying the problem, developing hypotheses, selecting strategies and resources, developing plans)
* use of processing skills and strategies (e.g., performing and recording, gathering evidence and data, observing, manipulating materials and using equipment safely, solving equations, proving)
* use of critical/creative thinking processes, skills, and strategies (e.g., analysing, interpreting, problem solving, evaluating, forming and justifying conclusions on the basis of evidence)

**Applications 25%**

* application of knowledge and skills (e.g., concepts and processes, safe use of equipment, scientific investigation skills) in familiar contexts
* transfer of knowledge and skills (e.g., concepts and processes, safe use of equipment, scientific investigation skills) to unfamiliar contexts
* making connections between science, technology, society, and the environment (e.g., assessing the impact of science on technology, people and other living things, and the environment)
* proposing courses of practical action to deal with problems relating to science, technology, society, and the environment

**Communication 20%**

* expression and organization of ideas and information (e.g., clear expression, logical organization) in oral, visual, and/or written forms (e.g., diagrams, models)
* communication for different audiences (e.g., peers, adults) and purposes (e.g., to inform, to persuade) in oral, visual, and/or written forms
* use of conventions, vocabulary, and terminology of the discipline in oral, visual, and written forms (e.g., symbols, formulae, scientific notation, SI units)

**Late Assignments**

Once the teacher has returned an assignment or has circulated its answers, students who have not submitted their work may no longer do so for credit. Usually, assignments that are eligible for credit are accepted without penalty even if they are late. However, in cases where penalties will be attached to the late submissions of assignments, students will be informed of the penalties in the relevant assignment’s instructions. Please refer to Richview’s evaluation policy for clarification.

**Lab Safety**

Students are expected to observe all safety procedures in the laboratory. Students that jeopardise the safety of themselves or others may be restricted in their laboratory participation.

**Consequences for Academic Dishonesty**

Academic dishonesty ( pursuant to TDSB policy) will result in a mark of zero for the assessment item in question. The opportunity for re-evaluation on the material in question may be forfeited. Students may appeal this decision with the teacher. However, if the matter cannot be resolved, the student has the right to appeal to their vice-principal for mediation in the matter. Please note that in cases where the academic dishonesty is deemed to be of a particularly serious nature, additional consequences including suspension may be applied at the discretion of the principal / vice-principal.