

# MALVERN COLLEGIATE INSTITUTE

55 Malvern Avenue • Toronto, Ontario • M4E 3E4  
Tel.: 416-393-1480 Fax: 416-393-1493 E-mail: [Malvern.Cl@tdsb.on.ca](mailto:Malvern.Cl@tdsb.on.ca)



**SCH3U**

**Chemistry, Grade 11, University Preparation**

## Course Outline

Teacher: \_\_\_\_\_ **Ms. E. Koumarelas** \_\_\_\_\_ ROOM: \_\_\_\_\_ **214** \_\_\_\_\_

### Description/Rationale

This course enables students to deepen their understanding of chemistry through the study of the properties of chemicals and chemical bonds; chemical reactions and quantitative relationships in those reactions; solutions and solubility; and atmospheric chemistry and the behaviour of gases. Students will further develop their analytical skills and investigate the qualitative and quantitative properties of matter, as well as the impact of some common chemical reactions on society and the environment.

Prerequisite: Science, Grade 10, Academic

### Titles (Topics) and Timing

Titles/Topics	Timing (110 hours)
<b>Matter, Chemical Trends, and Chemical Bonding</b>	20 hours
<b>Chemical Reactions</b>	20 hours
<b>Quantities in Chemical Reactions</b>	20 hours
<b>Solutions and Solubility</b>	20 hours
<b>Gases and Atmospheric Chemistry</b>	20 hours
<b>Culminating Activities</b>	10

### Assessment Evaluation & Reporting

**Assessment:** Assessment is regular and continuous and is used for the **improvement of teaching and learning and not for grade reporting**. The purposes of assessment are to:

- **Diagnose** and track student progress & achievement;
- Provide **feedback** to students & parents/guardian about student progress & achievement;
- To allow students **to assess** their own progress & achievement;
- To implement & **improve instruction**, curriculum and programs for **all students**

**Evaluation:** Evaluation is varied and will be done (after teaching, assessment and re-teaching) on particular 'chunks' of work; the most **recent and consistent** achievement on **particular** knowledge, understandings and skills will be used to report **the achievement grade**.

**Term Work** = 90% of Final Mark  
**Culminating Task** = 10% of Final Mark

**Evaluation is done in the following categories across each strand:**

**Knowledge and Understanding** = 25%  
**Thinking and Investigation** = 25%  
**Communication** = 25%  
**Application** = 25%

**Learning Skills** (*Responsibility, Organization, Independent Work, Collaboration, Initiative, Self-regulation*) will be assessed, evaluated, and reported separately from the achievement grade on the report card.

**Link to Malvern Assessment & Evaluation Policy:** <http://bit.ly/2N2hFIR>

## Big Ideas

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### ***Matter, Chemical Trends, and Chemical Bonding***

- Every element has predictable chemical and physical properties determined by its structure.
- The type of chemical bond in a compound determines the physical and chemical properties of that compound.
- It is important to use chemicals properly to minimize the risks to human health and the environment.

### ***Chemical Reactions***

- Chemicals react in predictable ways.
- Chemical reactions and their applications have significant implications for society and the environment.

### ***Quantities in Chemical Reactions***

- Relationships in chemical reactions can be described quantitatively.
- The efficiency of chemical reactions can be determined and optimized by applying an understanding of quantitative relationships in such reactions.

### ***Solutions and Solubility***

- Properties of solutions can be described qualitatively and quantitatively, and can be predicted.
- Living things depend for their survival on the unique physical and chemical properties of water.
- People have a responsibility to protect the integrity of Earth's water resources.

### ***Gases and Atmospheric Chemistry***

- Properties of gases can be described qualitatively and quantitatively, and can be predicted.
- Air quality can be affected by human activities and technology.
- People have a responsibility to protect the integrity of Earth's atmosphere.

## Fundamental Concepts Covered in This Course

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Fundamental Concepts	Matter, Chemical Trends and Chemical Bonding	Chemical Reactions	Quantities in Chemical Reactions	Solutions and Solubility	Gases and Atmospheric Chemistry
Matter	✓	✓	✓	✓	✓
Energy		✓	✓	✓	✓
Systems and Interactions		✓	✓		
Structure and Function	✓			✓	✓
Sustainability and Stewardship	✓	✓		✓	✓
Change and Continuity	✓	✓			