**Structure of the exam**

**Your semester 2 exam will cover content that was covered in Unit 1 AND Unit 2.**

1. The Unit 1 content that will be drawn upon is what is required to understand certain topic areas in Unit 2.   
For example   
- to understand solubility you are required to understand how ionic compounds or molecular substances are capable of dissolving in water. For this you need to understand hydrogen bonding and ion-dipole interactions. This was taught in Unit 1.

- we have learnt about combustion reactions in Unit 1 so these can be applied to stoichiometry calculations

- using an understanding of chemical and molecular structure/shape to predict how a substance might behave in water

-using valencies to write chemical formulae ( includes polyatomic ions)

-writing balanced chemical equations

- calculations involving the mole

-experimental error analysis - predicting an overestimate or an underestimate

2. Exam consists of Section A - Multiple choice and Section B - extended response

3. Answers need to be quoted with correct units, states of matter and significant figures where applicable.

4.Bring a scientific calculator and a **RULER..**

NO GRAPHICS CALCULATORS ARE PERMITTED

**What will be examined**

In VCE Chemistry it is **NOT** enough to learn a series of chemical facts which are referred to in the study design as Key Knowledge.   
  
You are examined on your ability to use specific **chemistry key skills** to apply this key knowledge to solve the exam questions presented.

In the table below you will find some suggested key knowledge areas you need to be familiar with together with a list of important skills that you have developed across the semester that have helped you solve chemistry questions that are directly related to these key knowledge areas.

You must understand and use the specific chemical language that is used in each topic we have covered. See the Chapter review Key terms at the end of each topic we have covered in your textbook

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| **Key knowledge** | **Chapter from textbook** | **Key skills** |
| Properties of water  Specific heat capacity | Chapter 12 | Relate how molecular structure of water determines the various unique properties it water displays.  Carry out specific heat calculations |
| Water as a solvent  Hydrogen bonding properties  Role of intermolecular forces in dissolving ie/ hydrogen bonding, ion-dipole interactions | Chapter 13 | Make predictions on chemical behaviour and properties using a molecular structure. |
| Solubilty  -rules  -relationship with temperature  -precipitation reactions | Chapter 14 | Writing balanced chemical equations  Solubility calculations |
| Stoichiometry  -molar concentration  -dilution  -limiting excess reactants  -mass/mass stoich | Chapter 14,18, 20 | Calculations using n=cV or n=m/m or % mass calculations  How to take into consideration the impact of a limiting/excess reactant in calculations. |
| Acid base reactions  Net ionic equations  Strength of acids and bases  pH calculations | Chapter 15 | How to recognise acid/base reactions  How to determine whether an acid or base can be described as being strong or weak, concentrated or dilute  use of scientific, annotated diagrams to convey a chemical understanding  Relate the role of pH in determining how acidic or basic water is  Determine the pH of a solution ( calculation) |
| Redox reactions  Key language, oxidant, reductant, oxidation, reduction, oxidised, reduced  -oxidation numbers  -half equations  -net ionic equations  -reactivity series of metals  -predicting spontaneous reactions using electrochemical series | Chapter 15 | Use of oxidation numbers to identify redox reactions  Identification of an oxidant/reductant in a balanced chemical equation  Use of an electrochemcial series to predict spontaneous/non spontaneous reactions  Writing half and full ionic equations for redox reactions |
| Chemical Analysis  -UV-visible spectroscopy  -HPLC chromatography  -Atomic absorption spectroscopy  -volumetric analysis  -conductivity | Chapter 18,19, 20 | How to plot ( using correct scientific graphing conventions) and use calibration curves to carry out calculations.  Experimental error analysis determining under/over estimate |