

**Year Level:12**  
**Semester:2**

**Subject: Chemistry**

<b>WEEK</b>	<b>TOPIC</b>	<b>LEARNING FOCUS</b>
1	Structure and nomenclature of organic compounds	Explain the diversity of carbon compounds. Know the molecular, structural and semi-structural formulae of a variety of organic compounds. Identify different types of isomers.
2	Structure and nomenclature of organic compounds  Chemical Analysis Workshop	Identify the functional groups found in a variety of families of organic compounds. Name a range of organic compounds using systematic nomenclature protocols.  Carry out chemical analyses using spectroscopy and chromatography.
3	Properties and reactions of organic compounds	Explain trends in physical properties of a variety of organic compounds. Describe and write chemical equations for some reactions involving organic compounds.
4	Properties and reactions of organic compounds	Identify organic reaction pathways for the synthesis of a variety of organic compounds including esters. Calculate percentage yield and atom economy for organic reaction pathways.
5	Spectroscopic techniques	Describe the principles and applications of infrared and nuclear magnetic resonance spectroscopy. Make qualitative and quantitative interpretations of data from these procedures.
6	Spectroscopic techniques	Describe the principles and applications of mass spectrometry and make qualitative and quantitative interpretations of mass spectra. Determine molecular structures by utilising a variety of analytical techniques
7	Chromatography	Describe the principles and applications of a variety of types of chromatography. Make qualitative and quantitative interpretations of chromatograms from these procedures.
8	Volumetric analysis	Determine the concentration of organic compounds by volumetric analysis, including acid-base and redox titrations.
9	Structure and bonding in food molecules	Describe the molecular structure, functions and formation of proteins, carbohydrates and lipids. Describe the biological significance, structure and solubility of some vitamins.
10	Metabolism of food in the human body	Describe the metabolism of a variety of foods in the human body. Describe the structure and function of enzymes and co-enzymes.
11	The energy content of food	Compare the energy values of carbohydrates, proteins and lipids, and calculate the energy values of foods. Explain the principles of calorimetry and compare solution and bomb calorimetry.
12 - 13	Revision and past papers	Revise the Unit 3 & 4 concepts and apply them to past exam questions
14	Trial Exam	Complete a Unit ¾ Trial exam under exam conditions. Review the Trial Exam in class.
15	Revision and past papers	Revise the Unit 3 & 4 concepts and apply them to past exam questions