

Learning Journey

Aromatic compounds • Carbonyl compounds • Carboxylic acids and esters
Skills and PAGs:
PAG7 Qualitative analysis of organic functional groups.

- Entropy and free energy
 - Lattice enthalpy
 - Redox
 - Electrode potentials
 - Transition elements.
- Skills and PAGs:
PAG 8 Electrochemical cells
PAG 12 Research skills – Opportunities for research skills in Transition metals practical.

Revision and
A Level
Exams

Module 5: pH and
buffer solutions

Module 6: Organic
Chemistry

Module 5: Rates and
Equilibrium

Module 5: Energy,
Redox and
Transition metals

Module 6:
Advanced Organic
Chemistry

Year
13

Acid–base equilibria:
pH, K_a and buffer solutions
Skills and PAGs:
PAG11 pH measurement.

Rate equations orders of reaction, the rate determining step
Equilibrium constants, K_c and K_p
Skills and PAGs:
PAG9 Rates of reaction – continuous monitoring
PAG10 Rates of reaction – initial rates method
PAG11 pH measurement.

Organic nitrogen compounds: amines and amino acids, Polymerisation, Amino acids and amines, Chromatography and NMR. Synthetic organic chemistry
Skills and PAGs:
PAG7 Qualitative analysis of organic functional groups.

A Level Chemistry

Module 4: Organic
Chemistry

Module 3: Physical
chemistry

Module 3: Periodic
Table and energy

Module 4:
Foundations in
Organic Chemistry

Module 2: Electrons,
bonding and
structure

Module 2: Atoms
and reactions

Basic concepts and Hydrocarbons
Organic synthesis
Analytical techniques (IR and MS)
Skills and PAGs:
PAG 6 Synthesis of an organic solid

Module 1 – Development of practical skills in chemistry

• Practical skills assessed in a written examination
Throughout year 12 learners are expected complete a set number of practical activities, which are assessed throughout the written examinations and also through the Practical Endorsement.

The periodic table and periodicity

- Group 2 and the halogens
- Qualitative analysis PAG 4
- Qualitative analysis of ions

Enthalpy changes and their determination

- Rates of reaction
- Reversible reactions and chemical equilibrium
- Consideration of energy and yield in improving sustainability.

Skills and PAGs:
PAG 3 Mole determination.

Basic concepts and Hydrocarbons

- Basic concepts
- Hydrocarbons
- Alcohols and haloalkanes

Skills and PAGs:
PAG 5 Synthesis of an organic liquid.

Electrons, bonding and structure
Skills:
This section introduces the concept of atomic orbitals, electron configurations linked to the periodic table. The central role of electrons in ionic and covalent bonding.

Atoms and Reactions
Skills and PAGs:
PAG 1 Mole determination
PAG 2 Acid-Base Titration
Quantitative techniques involved in measuring masses, gas and solution volumes, including use of volumetric apparatus.

Year
12