

A Level

# Chemistry

OCR specification A



A 2 year A level course with the opportunity to complete AS level after 1 year (AS marks do not count towards A level grade)

## Course Content

### Year 1/AS modules include:

- Practical skills: planning, implementing, analysis and evaluation
- Foundations in Chemistry: atomic structure, bonding, moles, acid-base, redox
- Periodic table and energy: Groups 2 and 7, periodicity, enthalpy changes, qualitative analysis, reaction rates and equilibrium (qualitative)
- Core organic Chemistry: hydrocarbons, alcohols, haloalkanes, organic synthesis, infra-red spectroscopy and mass spectrometry.

### Year 2 modules include:

- Physical Chemistry, transition elements: quantitative treatment of equilibrium and reaction rates, pH and buffers, enthalpy, entropy and free energy, electrode potentials, transition elements
- Organic Chemistry and analysis: aromatic compounds, carbonyl compounds, carboxylic acids and esters, nitrogen compounds, polymers, organic synthesis, chromatography and nuclear magnetic resonance spectroscopy

## Methods of Teaching

Two teachers manage the teaching and learning of the two year course. You are expected to be attentive, focusing on work set, to participate in class discussions, and to carry out experimental work carefully. Homework includes: reading textbooks, making summary notes, answering set questions, and preparing for tests and exams. Frequent homework/private study is essential for success in this subject.



Videos, intranet and internet resources reinforce visual learning. Model making and practical work develop your practical skills and reinforces kinaesthetic learning.

Workshops are held Monday - Friday offering help as required with individual problems.

# Chemistry

## Methods and Patterns of Assessment

### AS level (end of year 1)

Two exams of 1 hour 30 minutes each

### A-level (end of year 2)

Three exams of 2 hours each

There is no coursework, but the exam papers include questions on practical skills.

The award of a separate practical endorsement at A-level depends on successful completion of the experimental tasks set during the course.

Practical activities include:

#### Year 1

Making an inorganic compound and finding its empirical formula by experiment

Identifying unknown salts

Finding the concentration of a solution by titration

Oxidising an alcohol to a carboxylic acid

#### Year 2

Making and purifying aspirin

Finding the activation energy of a reaction

Investigating transition metal complexes

Making and testing electrochemical cells

## Financial Implications

You need to buy the course textbook, 'A level Chemistry for OCR A' by Ritchie and Gent for study at home. For details please see college booklist. The college provides lab coats, safety spectacles, goggles, books for class use, but you need to provide your own stationery and scientific calculator. The college has a Student Support Fund for students needing help in meeting these costs.

## Career Possibilities

Advanced level Chemistry is essential for further study of Chemistry, Biochemistry, Chemical Engineering, Medicine, Dentistry, Veterinary Science, Pharmacy, Pharmacology, and recommended for Biology, Forensic Science, Geology, Geography, Oceanography, and Environmental Science.

## Minimum Entry Requirements

5 GCSE's at grade A\* - C, including English and an equivalent of an A and a B in ONE of the following combinations:

(where A = 7 and B = 6 in Maths):

Additional Science GCSE and Maths GCSE

Biology or Chemistry or Physics GCSE and Maths GCSE

Apply online: [www.psc.ac.uk/apply](http://www.psc.ac.uk/apply) t: 01962 857555 e: [admissions@psc.ac.uk](mailto:admissions@psc.ac.uk)

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