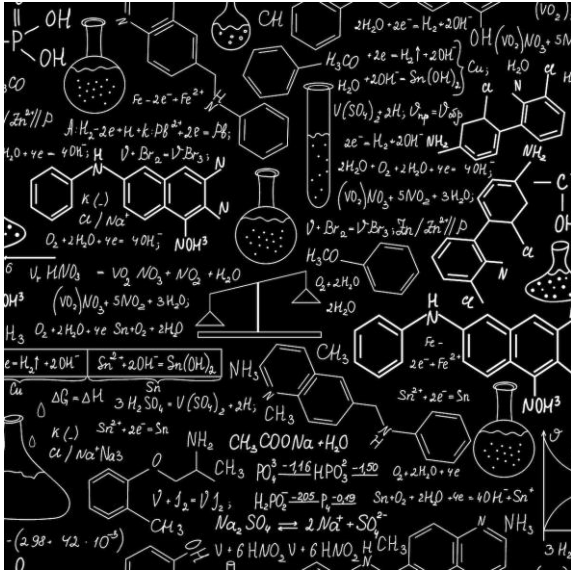


# INTRODUCTION TO CHEMISTRY A LEVEL



# EXPECTATIONS

- To achieve a minimum of 6-6 grades at GCSE and a 6 in mathematics
- To attend all lessons
- To be punctual to all lessons
- To complete a *minimum* of **five** hours independent study outside of the
- lessons each week
- To submit all assignment and homework on time and to the best of your ability
- To bring your textbook to every lesson

All students who meet the entry requirements are provisionally placed on the course which is dependent on attitude, effort and an internal assessment.

# STRUCTURE

This is a **two year A Level course**.

You will have 9 lessons per fortnight with two teachers.

**3 Examinations** will be sat in June/July of Year 13.

There is **NO** coursework.

**12 Required Practicals (PAGs)** (as a minimum) will be completed throughout the course. You will be assessed on these practicals and the outcome of this will feed into the **Practical Endorsement** qualification.

## 2a. Overview of A Level in Chemistry A (H432)

Learners must complete all components (01, 02, 03 and 04).

Content Overview	Assessment Overview	
<p>Content is split into six teaching modules:</p> <ul style="list-style-type: none"><li>Module 1 – Development of practical skills in chemistry</li><li>Module 2 – Foundations in chemistry</li><li>Module 3 – Periodic table and energy</li><li>Module 4 – Core organic chemistry</li><li>Module 5 – Physical chemistry and transition elements</li><li>Module 6 – Organic chemistry and analysis</li></ul> <p>Component 01 assesses content from modules 1, 2, 3 and 5.</p> <p>Component 02 assesses content from modules 1, 2, 4 and 6.</p> <p>Component 03 assesses content from all modules (1 to 6).</p>	<p>Periodic table, elements and physical chemistry (01)</p> <p>100 marks</p> <p>2 hours 15 minutes written paper</p>	<p><b>37%</b></p> <p>of total A level</p>
	<p>Synthesis and analytical techniques (02)</p> <p>100 marks</p> <p>2 hours 15 minutes written paper</p>	<p><b>37%</b></p> <p>of total A level</p>
	<p>Unified chemistry (03)</p> <p>70 marks</p> <p>1 hour 30 minutes written paper</p>	<p><b>26%</b></p> <p>of total A level</p>
	<p>Practical Endorsement in chemistry (04) (non exam assessment)</p>	<p><b>Reported separately</b> (see Section 5)</p>

# TOPICS IN YEAR 12

## **Module 1 – Development of practical skills in chemistry**

Practical skills assessed in written exam

## **Module 2 – Foundations in chemistry**

- Atoms, compounds, molecules and equations
- Amount of substance
- Acid–base and redox reactions
- Electrons, bonding and structure

## **Module 3 – Periodic table and energy**

- The periodic table and periodicity
- Group 2 and the halogens
- Qualitative analysis
- Enthalpy changes
- Reaction rates and equilibrium (qualitative)

## **Module 4 – Core organic chemistry**

- Basic concepts
- Hydrocarbons
- Alcohols and haloalkanes
- Organic synthesis
- Analytical techniques (IR and MS)

# TOPICS IN YEAR 13

## Module 5 – Physical chemistry and transition elements:

- Reaction rates and equilibrium (quantitative)
- pH and buffers
- Enthalpy, entropy and free energy
- Redox and electrode potentials
- Transition elements

## Module 6 – Organic chemistry and analysis:

- Aromatic compounds
- Carbonyl compounds
- Carboxylic acids and esters
- Nitrogen compounds
- Polymers
- Organic synthesis
- Chromatography and spectroscopy (NMR)

# HOW YOU WILL BE ASSESSED

After the completion of every unit you will sit an end of unit assessment. These can occur quite frequently (usually fortnightly). Each assessment will be a minimum of one hour long.

Every time you do a practical you will be assessed on your competency and skills. You will be required to answer questions about the practical after completion. Both skills and correct answers are required for the Practical Endorsement qualification. This component is awarded by your teachers at the end of the taught course.

You will sit two Year 12 mock papers in June of Year 12.

You will sit three papers at the end of Year 13. These will contribute to the Biology A Level Grade that you are awarded in August.

See the Assessment Overview on slide 2 for weighting and length of each examination.

## Does Chemistry Pay Off?

Recent research has shown that chemistry graduates are better paid over a lifetime than graduates of almost any other discipline. On average they earn £190,000 more over a life.

## Chemistry Related Jobs.

Chemistry related jobs  
Analytical chemist  
Atmospheric chemist  
Chemical engineer  
Clinical biochemist  
Cosmetic chemist  
Environmental chemist  
Forensic chemist  
Formulation chemist  
Health and safety adviser  
Laboratory technician  
Marine chemist  
Medical laboratory scientist  
Research chemist  
Pharmaceutical chemist

## Other Jobs Accessed through Chemical Sciences:

Accountant  
Civil servant  
Banker  
Computer programmer  
Computer systems analyst  
Consultant  
Dentist  
Doctor  
Information scientist  
Journalist  
Lawyer  
Manager  
Patent attorney  
Pharmacist  
Photographer  
Physiotherapist  
Science teacher  
Sales and marketing manager  
Science writer  
Vet  
University lecturer  
Technical sales executive