OLDHAM HULME GRAMMAR SCHOOL

Nurturing Potential since 1611

CHEMISTRY

AQA specification

AS and A level courses based on this specification should encourage candidates to:

- Nurture their passion for the subject and lay the groundwork for careers involving chemistry.
- Appreciate how society makes decisions about scientific issues and how sciences contribute to the success of the economy and society.
- Develop and demonstrate a deeper appreciation of the skills, knowledge and understanding of How Science Works.
- Develop essential knowledge and understanding of different areas of the subject and how they relate to each other.

The AS course

Studied in Year 12. There are three compulsory units:-

Physical Chemistry

- Atomic structure
- Amount of substance
- Bonding
- Energetics
- Kinetics
- Chemical Equilibria and Le Chatelier's principle
- Oxidation, Reduction and Redox Equations

Inorganic Chemistry

- Periodicity
- Group 2, The Alkaline Earth Metals
- Group 7, The Halogens

Organic Chemistry

- Introduction to Organic Chemistry
- Alkanes
- Halogenoalkanes
- Alkenes
- Alcohols
- Organic analysis

Assessments

The AS is assessed by two, externally marked, 90 minute written papers.

Paper 1 Relevant Physical Chemistry topics and Inorganic Chemistry, relevant practical skills
50% of the AS
65 marks of short and long answer questions
15 marks of multiple choice questions

Paper 2 Relevant Physical Chemistry topics and Organic Chemistry, relevant practical skills
50% of the AS
65 marks of short and long answer questions
15 marks of multiple choice questions

Assessment of practical skills in AS is by written exam only. There is an expectation that students will be active participants in practical activities and 15% of the written marks will relate to practical work.

The A level course

Studied throughout Year 12 and Year 13, this consists of three compulsory units. For the full A level award all the exams are sat at the end of the two year course. Practical skills are assessed on an ongoing basis throughout the two years.

Physical Chemistry

- Atomic structure
- Amount of substance
- Bonding
- Energetics
- Kinetics
- Chemical Equilibria and Le Chatelier's principle
- Oxidation, Reduction and Redox Equations
- Thermodynamics
- Rate equations
- Equilibrium constant, Kc, for Homogeneous systems
- Electrode Potentials and Electrochemical cells
- Acids and Bases

Inorganic Chemistry

- Periodicity
- Goup 2, The Alkaline Earth Metals
- Group 7, The Halogens
- Properties of period 3 Elements and their oxides
- Transition Metals
- Reactions of Ions in aqueous solution

Organic Chemistry

- Introduction to Organic Chemistry
- Alkanes
- Halogenoalkanes
- Alkenes
- Alcohols
- Organic analysis
- Optical isomerism
- Aldehydes and Ketones
- Carboxylic acids and Derivatives
- Aromatic chemistry
- Amines
- Polymers
- Amino acids, proteins and DNA
- Organic synthesis
- Nuclear magnetic resonance spectroscopy

Assessments

The A level is assessed by three, externally marked, 2 hour written papers.

Paper 1 Relevant Physical Chemistry topics, Inorganic Chemistry and relevant practical skills
35% of A level
105 marks of short and long answer questions

Paper 2 Relevant Physical Chemistry topics, Organic Chemistry and relevant practical skills
35% of A level
105 marks of short and long answer questions

Paper 3 Any content and any practical skills
30% of A level
40 marks of questions on practical techniques and data analysis
20 marks of questions testing across the specification
30 marks of multiple choice questions

Practical Assessment
A level grades will be based only on marks from written exams. A separate endorsement of practical skills will be taken alongside the A level. This will be assessed by teachers, and will be based on direct observation of students' competency in a range of skills in both year 12 and year 13.

What do I need before I start?
Students will be expected to have an interest in Chemistry and to be well motivated. You should have gained a good knowledge of the whole of the GCSE course and ideally have achieved a grade B in Chemistry or BB in Double Award. A grade of at least B in GCSE Mathematics is also desirable. An interest in practical work is advantageous. You may wish to study AS Chemistry as a final qualification, allowing you to broaden your studies in the sixth form. The course is rigorous and a good work ethic is required.