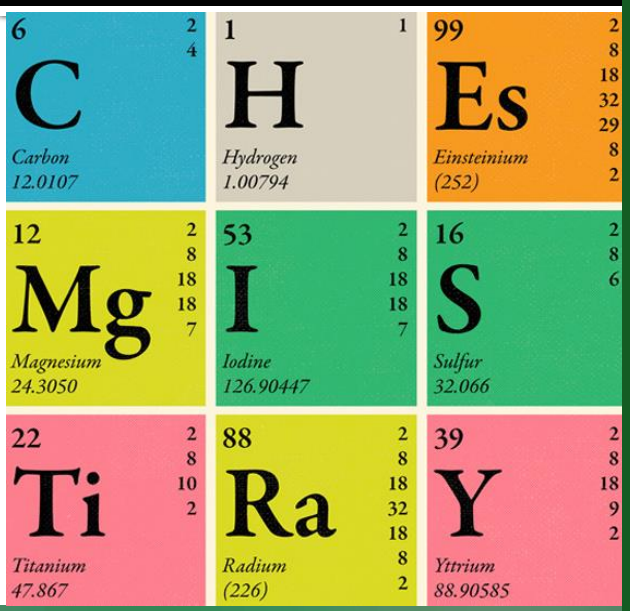
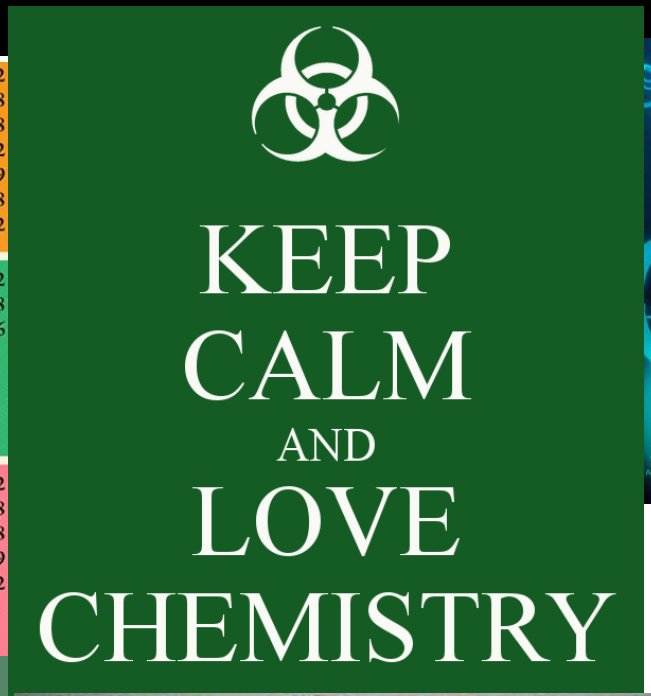
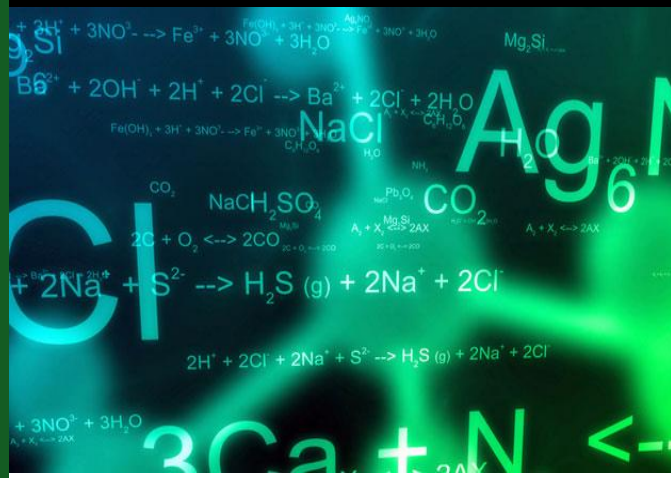
Why Study A-Level Chemistry?







Careers


Boots
pharmacy


Technician
Studies
Astro Chemical
Weather
Pathologist
Centre
Agricultural
Experimental
Research
Geological
Neuroscientist
Flavour
Scientist
Cell
Supply
Solar
Reader
Sustainability
Cancer
Tv
Atmospheric
Science
Associate
Food
Analyst
Energy
Chemist
Surveying
Leader
Rocks
Meterologist
Quality
Petro
Data
Textile
Fine
Metal
Pharmacist
Professor
Exploration
Minerals
School
Teacher
Environmental
Battery
Geo
Water
Engineer
Material
Drug
Fixes
Production
Assistant
Medical
Forensic
Gems
Chemistry
Analytical
Developer
Electrical
Lecturer
Project
Worker
Control
Communicator

Previous chemistry students have gone on to study…

- Medicine
- Biochemistry
- Biology
- Engineering (chemical, civil, + others)
- Chemistry (pure and applied)
- Midwifery
- Accountancy
- Dentistry
- … and many other subjects!

Why Chemistry at Immanuel?

- Taught by very experienced, specialist chemistry teachers.
- In-depth examination preparation.
- High percentage of B-A* grades achieved.
- Very positive progress scores.
- You will develop excellent, highly desirable and highly transferable skills – such as:
  - evaluation and analytical skills
  - good work ethic
  - problem solving skills
  - team working and independent study skills
  - the ability to apply theory to practical situations and investigate problems, scientific writing
  - the ability to apply knowledge to new information.

A Level Chemistry

- 3 x 120 minute exams

A-Level Paper 1	A-Level Paper 2
Physical Chemistry Topics: • 3.1.1 Atomic structure • 3.1.2 Amount of substance • 3.1.3 Bonding • 3.1.4 Energetics • 3.1.6 Chemical equilibria, Le Chatelier's principle and *Kc* • 3.1.7 Oxidation, reduction and redox equations • 3.1.8 Thermodynamics • 3.1.10 Equilibrium constant *Kp*/for homogeneous systems • 3.1.11 Electrode potentials and electrochemical cells • 3.1.12 Acids and bases **Inorganic Chemistry Topics:** • 3.2.1 Periodicity • 3.2.2 Group 2, the alkaline earth metals • 3.2.3 Group 7(17), the halogens • 3.2.4 Properties of Period 3 elements and their oxides • 3.2.5 Transition metals • 3.2.6 Reactions of ions in aqueous solution **Relevant required practicals**	**Physical Chemistry Topics:** • 3.1.2 Amount of substance • 3.1.3 Bonding • 3.1.4 Energetics • 3.1.5 Kinetics • 3.1.6 Chemical equilibria, Le Chatelier's principle and *Kc* • 3.1.9 Rate equations **Organic Chemistry Topics:** • 3.3.1 Introduction to organic chemistry • 3.3.2 Alkanes • 3.3.3 Halogenoalkanes • 3.3.4 Alkenes • 3.3.5 Alcohols • 3.3.6 Organic analysis • 3.3.7 Optical isomerism • 3.3.8 Aldehydes and ketones • 3.3.9 Carboxylic acids and derivatives • 3.3.10 Aromatic chemistry • 3.3.11 Amines • 3.3.12 Polymers • 3.3.13 Amino acids, proteins and DNA • 3.3.14 Organic synthesis • 3.3.15 Nuclear magnetic resonance spectroscopy • 3.3.16 Chromatography **Relevant required practicals**

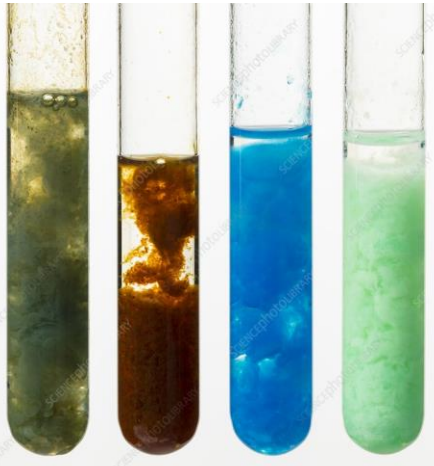
A-Level Paper 3 – any content and any required practicals.

Required Practicals

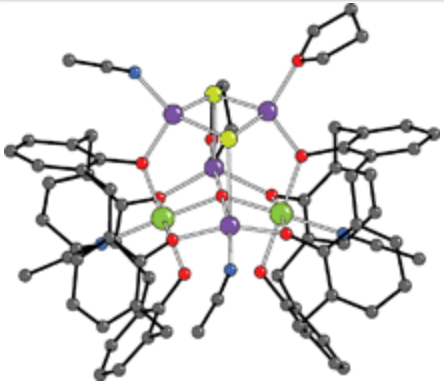
- All the universities got together with all of the exam boards to decide common skills and experiments they want students to have to be prepared to study chemistry based courses.
- 12 common practicals (split over the 2 years).
- Students will gain a pass or fail for the practical endorsement and over the course of the practicals must demonstrate common skills.
- Theses practical experiments will be examined in the exams at AS and A Level.

Required Practicals

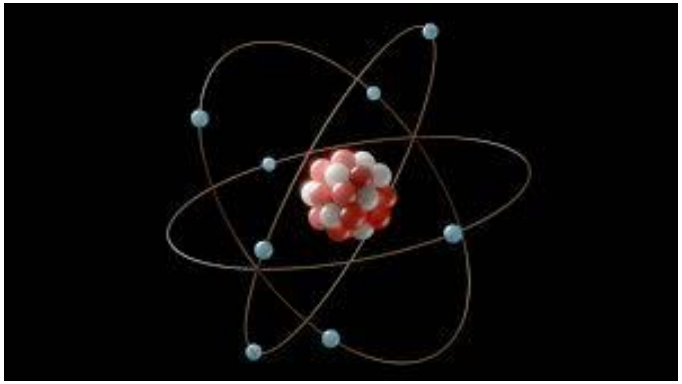
1	Make up a volumetric solution and carry out a simple acid–bas titration
2	Measurement of an enthalpy change
3	Investigation of how the rate of a reaction changes with temperature
4	Carry out simple test-tube reactions to identify: • cations – Group 2, NH_4^+ • anions – Group 7 (halide ions), OH^-, CO_3^{2-}, SO_4^{2-}
5	Distillation of a product from a reaction
6	Tests for alcohol, aldehyde, alkene and carboxylic acid
7	Measuring the rate of reaction: • by an initial rate method • by a continuous monitoring method
8	Measuring the EMF of an electrochemical cell
9	Investigate how pH changes when a weak acid reacts with a strong base and when a strong acid reacts with a weak base
10	Preparation of: • a pure organic solid and test of its purity • a pure organic liquid
11	Carry out simple test-tube reactions to identify transition metal ions in aqueous solution
12	Separation of species by thin-layer chromatography

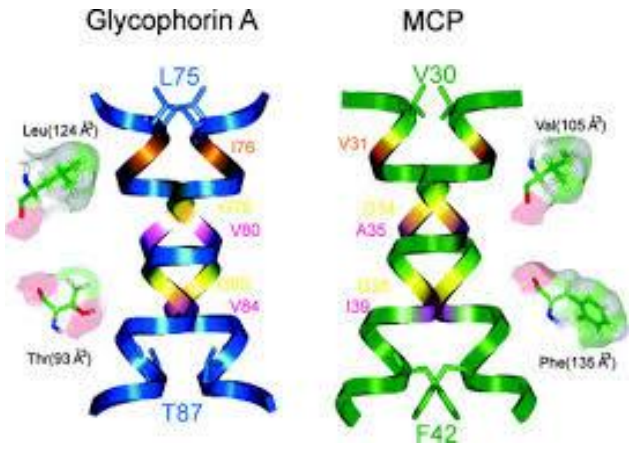


Any Questions?



Enjoy the rest of your evening!





AS Level Chemistry

- 2 x 90 minute exams

AS Paper 1	AS Paper 2
Physical Chemistry Topics: • 3.1.1 Atomic structure • 3.1.2 Amount of substance • 3.1.3 Bonding • 3.1.4 Energetics • 3.1.6 Chemical equilibria, Le Chatelier's principle and *Kc* • 3.1.7 Oxidation, reduction and redox equations **Inorganic Chemistry Topics:** • 3.2.1 Periodicity • 3.2.2 Group 2, the alkaline earth metals • 3.2.3 Group 7(17), the halogens **Relevant required practicals**	**Physical Chemistry Topics:** • 3.1.2 Amount of substance • 3.1.3 Bonding • 3.1.4 Energetics • 3.1.5 Kinetics • 3.1.6 Chemical equilibria, Le Chatelier's principle and *Kc* **Organic Chemistry Topics:** • 3.3.1 Introduction to organic chemistry • 3.3.2 Alkanes • 3.3.3 Halogenoalkanes • 3.3.4 Alkenes • 3.3.5 Alcohols • 3.3.6 Organic analysis **Relevant required practicals**