Year 13 Long Term Scheme of Learning 2023-24

Chemistry

Date	Exam	Unit(s) Teacher 1 (5L)	Teacher 2 (4L)
4/9/23		**Thermodynamics** • Enthalpy changes in ionic compounds • Born-Haber cycles • Perfect ionic model • Enthalpy of solution • Feasible reactions • Entropy • Feasibility of a reaction • Graphical calculations **Equilibrium constant Kp** • Mole fractions • Partial pressure • Kp	**Kinetics** • Methods of determining rate of reaction Required Practical 7a. An 'iodine clock' experiment – initial rate method. Required Practical 7b. Measuring the rate of reaction by a continuous monitoring method. • Rate monitoring • Order linked to mechanisms • The rate equation • The Arrhenius equation **Optical isomerism** • Enantiomers • Optical activity
11/9/23			
18/9/23			
25/9/23			
2/10/23			
09/10/23			
16/10/23			
30/10/23	PPE1	**PPE1** **Transition Metals** • General properties • Complex formation • Ligand substitution • Shapes of complex ions • Formation of coloured ions • Ions in aqueous solutions **Transition Metals: Variable oxidation states** • Oxidation states • Redox titrations • Catalytic activity Required Practical 11. Identify transition metal ions in aqueous solution.	**PPE1** **The carbonyl group** • Aldehydes & ketones • Nucleophilic addition reactions • Carboxylic acids & derivatives • Esters Required Practical 10b. Preparation of a pure organic liquid – ethyl ethanoate. • Fats & oils • Acylation – acid chlorides & anhydrides • Nucleophilic addition-elimination Required Practical 10a. Preparation of an organic solid and a test of its purity – aspirin.
6/11/23	PPE1		
13/11/23			
20/11/23			
27/11/23			
4/12/23			
11/12/23			
1/1/24		**Electrode potentials & cells** • Redox equilibria • Cell conventions & EMF • Redox reactions & feasibility • Conventional cell representation Required Practical 8. Measuring the EMF of an electrochemical cell. • Commercial applications **PPE2**	**Aromatic chemistry** • Structure of benzene • Addition & substitution reactions • Electrophilic substitution **Amines** • Structure & naming • Preparation of primary & aromatic amines • Basic properties • Nucleophilic substitution **PPE2**
8/1/24			
15/1/24			
22/1/24			
29/1/24			
5/2/24	PPE2		
12/2/24	PPE2		
26/2/24		**Acids & Bases** • Bronsted Lowry theory • pH • Ionic product of water • pH of weak acids • Dilutions & neutralisations • Titration curves • Buffers Required Practical 9. Investigate how pH changes when a weak acid reacts with a strong base.	**Polymers** • Addition polymerisation • Condensation polymerisation • Biodegradability of polymers **Biological molecules** • Amino acids • Proteins & enzyme action • DNA **Structure determination & analysis** • Chromatography Required Practical 12. Separation of a species by thin-layer chromatography. • NMR spectroscopy • Functional group tests
4/3/24			
11/3/24			
18/3/24			
25/3/24			
15/4/24		**Properties of Period 3 elements & their oxides** • Elements of Period 3 • Oxides • Trends in melting points • Structure of the acids & anions **Revision & exam preparation**	**Organic Synthesis** • Revision & summary of all organic reactions **Revision & exam preparation**
22/4/24			
29/4/24			
6/5/24			

Year 13 Long Term Scheme of Learning 2023-24

Chemistry

13/5/24			
20/5/24		A-level exam season provisional start date	A-level exam season provisional start date
3/6/24		***A-Level/Vocational Examinations***	***A-Level/Vocational Examinations***
10/6/24			
17/6/24			
24/6/24			
1/7/24			
8/7/24			
15/7/24			