



Curriculum Plan year 13 A Level chemistry  
2016

Autumn Term	Spring Term	Summer Term
<p><b>Aromatic Chemistry</b></p> <ul style="list-style-type: none"> <li>• Aromatic Chemistry</li> <li>• Reactions of Benzene</li> <li>• Benzene Mechanisms</li> <li>• Amines</li> <li>• Reactivity of Amines</li> <li>• Amino Acids</li> <li>• Formation of Polymers</li> <li>• Polyamides</li> <li>• Naming Amine and Amides</li> <li>• Plastic Disposal</li> <li>• Organic Synthesis</li> </ul> <p><b>Spectroscopy</b></p> <ul style="list-style-type: none"> <li>• Review of Infra-red Spectroscopy</li> <li>• NMR Spectroscopy</li> <li>• Introducing Proton NMR</li> <li>• Features of Proton NMR</li> <li>• Working out NMR</li> <li>• Splitting Patterns</li> <li>• High Resolution NMR</li> <li>• Carbon-13 NMR</li> </ul> <p><b>Kinetics (Kc and Kp)</b></p> <ul style="list-style-type: none"> <li>• Rates</li> <li>• Rate Equations</li> <li>• Orders of Reaction</li> <li>• Equilibrium Constants (Kc)</li> <li>• Equilibrium constants (Kp)</li> <li>• Qualitative Equilibria</li> </ul>	<p><b>Transition Metals</b></p> <ul style="list-style-type: none"> <li>• Transition Metals</li> <li>• Naming T. Metal Complexes</li> <li>• Formation of Coloured Ions</li> <li>• Colour and Colourimetry</li> <li>• Variable Oxidation States</li> <li>• T. Metal Revision</li> <li>• Lewis Acids and Bases</li> <li>• Metal Aqua Ions</li> <li>• Acidity (Hydrolysis) Reaction</li> <li>• Reactions of Metal Aqua Ions</li> <li>• Substitution Reactions</li> <li>• Multidentate ligands and Chelation</li> <li>• <i>cis</i> Platin</li> <li>• Transition Metal Catalysts</li> <li>• Transition Metal Titrations</li> <li>• Oxidation in Alkaline Solution</li> </ul> <p><b>Electrochemistry</b></p> <ul style="list-style-type: none"> <li>• Electrode potentials</li> <li>• Cell reactions and Spontaneity</li> <li>• Secondary Standards</li> <li>• Spontaneous Direction of Reactions</li> </ul>	
<b>HALF TERM</b>		



<p><b>Acids and Bases</b></p> <ul style="list-style-type: none"><li>• Bronsted-Lowry Acids and Bases</li><li>• pH</li><li>• The pH Scale</li><li>• Calculating pH</li><li>• Calculating pH nad Kw</li><li>• Kw and Calculations</li><li>• Definitions –Acids and Bases</li><li>• Reactions of Acids</li><li>• Strong Bases</li><li>• Weak Acids and Bases</li><li>• pH, Kw, Ka and pKa Review</li></ul> <p><b>Titration and Buffers</b></p> <ul style="list-style-type: none"><li>• pH Titration curves</li><li>• Indicators</li><li>• Buffers</li><li>• Qualitative Buffers</li><li>• Quantitative acidic buffers</li></ul> <p><b>Recommended Practical Activities</b></p> <ul style="list-style-type: none"><li>• <i>RPA 7 – Measuring the rate of reaction by initial rate method and a continuous monitoring method</i></li><li>• <i>RPA 9 – Investigate how pH changes when a weak acid reacts with a strong base and a strong acid reacts with a weak base</i></li></ul>	<p><b>Energetics</b></p> <ul style="list-style-type: none"><li>• Enthalpy Changes</li><li>• Born Haber Cycle</li><li>• Entropy Change <math>\Delta S</math></li><li>• Free Energy Change <math>\Delta G</math></li><li>• Entropy in Physical changes</li></ul> <p><b>Recommended Practical Activities:</b></p> <p><i>RPA 8 – Measuring the EMF of an electrochemical cell</i></p> <p><i>RPA 11 – Carry out simple test-tube reactions to identify transition metal ions in aqueous solution</i></p>	
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