

**UTC Chemistry Department Learning Cycles 2019 – Year 13**

Cycle 2.6	Cycle 2.7	Cycle 2.8	Cycle 2.9	Cycle 2.10 Revision of all topics
Topics	Topics	Topics	Topics	Topics
<b>Required Practical 10b</b> <b>Aromatic chemistry</b> <ul style="list-style-type: none"> <li>Bonding</li> <li>Electrophilic substitution</li> </ul> <b>Amines</b> <ul style="list-style-type: none"> <li>Preparation</li> <li>Base properties</li> <li>Nucleophilic properties</li> </ul> <b>Polymers</b> <ul style="list-style-type: none"> <li>Condensation polymers</li> <li>Biodegradability and disposal of polymers</li> </ul> <b>Amino acids, proteins and DNA</b> <ul style="list-style-type: none"> <li>Amino acids</li> <li>Proteins</li> <li>Enzymes</li> <li>DNA</li> <li>Action of anticancer drugs</li> </ul> <b>Organic synthesis</b>	<b>Thermodynamics</b> <ul style="list-style-type: none"> <li>Born-Haber cycles</li> <li>Gibbs free-energy change and entropy change</li> </ul> <b>Rate equations</b> <ul style="list-style-type: none"> <li>Rate equations</li> <li>Determination of rate equations</li> </ul> <b>Required Practical 7</b> Equilibrium constant $K_p$ for homogeneous systems Properties of Period 3 elements and their oxides	<b>Electrode potentials and electrochemical cells</b> <ul style="list-style-type: none"> <li>Electrode potentials and cells</li> <li>Commercial applications of electrochemical cells</li> </ul> <b>Required Practical 8</b> <b>Acids and bases</b> <ul style="list-style-type: none"> <li>Bronsted-Lowry acid-base equilibria in aqueous solution</li> <li>Definition and determination of pH</li> <li>The ionic product of water</li> <li>Weak acids and bases</li> <li>pH curves, titrations and indicators</li> <li>Buffer action</li> </ul> <b>Required Practical 9</b>	<b>Transition metals</b> <ul style="list-style-type: none"> <li>General properties of transition metals</li> <li>Substitution reactions</li> <li>Shapes of complex ions</li> <li>Formation of coloured ions</li> <li>Variable oxidation states</li> <li>Catalysts</li> </ul> <b>Reactions of ions in aqueous solution</b> <b>Required Practical 11</b>	<b>Revision of AS and A2 topics – see specification</b>  <b>Exam question practise</b>
<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>	<b>Topic Assessments Used</b>
End of module assessment – past exam questions	End of module assessment – past exam questions	End of module assessment – past exam questions	End of module assessment – past exam questions	Past exam papers