Bellerive FCJ Catholic College

Department: Chemistry A Level **Year Group: 13**

Term	Learning Focus	Key Knowledge and Skills	Assessment	Challenge and Enrichment
1	**Physical Chemistry** 3.1.8 Thermodynamics – Started in Y12 3.1.9 Rate equations 3.1.10 Equilibrium constant Kp for homogeneous systems 3.1.12 Acids and bases **Organic Chemistry** 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	• Gibbs free-energy change ΔG and entropy change ΔS • Determination of rate equation • Equilibrium constant Kp for homogeneous systems • Brønsted-Lowry acid-base equilibria in aqueous solutions, Definition and determination of pH, The ionic product of water Kw, Weak acids and bases; K_a for weak acids • Acylation • Bonding, Electrophilic substitution • Preparation, Base Properties, Nucleophilic properties • Condensation polymers, Biodegradability and disposal of polymers, Amino acids, Proteins, Enzymes, DNA, Action of anti-cancer drugs • Organic synthesis	Y13 mock exams Thermodynamics HW Required Practical 7b Required Practical 7a Rate equations HW Kp HW Required Practical 10a Required Practical 10b Carboxylic acids and derivatives HW Amines HW	Allery Chemistry (You Tube) A Level Chemistry (Resources) Doc Brown
2	**Physical Chemistry** 3.1.12 Acids and bases 3.1.11 Electrode potential and electrochemical cells **Organic Chemistry**	• pH curves, titrations and indicators, Buffer action • Electrode potentials and cells, Commercial applications of electrochemical cells	Required practical 9 Acids and bases HW Required practical 8 Electrode potentials HW	

	3.3.15 Nuclear magnetic resonance spectroscopy 3.3.16 Chromatography **Inorganic Chemistry** 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	Nuclear magnetic resonance spectroscopy • Chromatography • Properties of Period 3 elements and their oxides • General Properties of the Transition Metals, Substitution reactions, Shapes of complex ions, Formation of coloured ions, Variable oxidation, Catalysts • Reactions of ions in aqueous solution	NMR HW Required Practical 12 Chromatography HW Required practical 11 Transition metals HW Reactions of ions in aqueous solutions HW	