

Year 1

(teaching weeks stated are only a guide)

Topic	Syllabus codes
Term 1	
Atomic structure Electronic Spectroscopy Chemical forces (first half term)	A 1.1 A 4.3 A 1.2
Chemical models & evidence (as we go along)	B 1.7
Energy Changes Equilibrium (LCP, acid models, pH)* Gases & Kinetics* (second half term)	A 1.3 B 1.5 B 1.6
<p>*revisited and extended in Year 2 Practical work should begin in term 1. Practicals may be out of context with the theory covered. Qualitative and quantitative analysis can be introduced.</p>	
Term 2	
Periodic Table Main Group Chemistry From Non-Metals to Metals: Group 14 Qualitative and Quantitative Analysis Organic Preliminaries	A2.1 A2.2 B2.3 A4.1 A3.1
<p>A3.1(g,h) may be covered as you go along in term 3 instead, in relation to the FGLs as they are covered. Students need to be encouraged to read journals and to be discussing what they have read of interest. Encourage students to read ahead with the textbook so that the pace of lessons can be good. This is good preparation for what they will eventually have to do at University, as well as for interviews and for answering questions on unfamiliar ground.</p>	

Term 3

Mass spectrometry	A4.2
Addition to C=C and elimination	A3.5 (b-e)
Electrophilic addition and Markovnikov's rule	B3.9 (e-g)
Functional Group Level	A3.2 (a-f), (h)
Alcohol level	A3.3
Nucleophilic substitution	B3.9 (a-d)
Infra-red	A4.4
Green Chemistry	A3.6

Organic chemistry lends itself to doing regular practicals in context. Regular weekly tests on naming molecules from the different FGL could be given as starter activities. Atom economy and Green Chemistry concepts can be taught as you go along with FGL rather than being taught in isolation. It is a good idea to teach students general principles and get them to work things out for themselves (e.g. A3.5b). Never underestimate how difficult others (non-chemists) find thinking in 3D. To assist all students with this way of thinking/understanding regular use of molymods is recommended.

Year 2

Topic	Syllabus codes
Term 1	
Carbonyl level C=O compared with C=C Carboxylic acid level Mechanisms* Stereochemistry (first half term)	A3.4 A3.5 (a) B3.7 B3.9 (h)-(i) B3.12
Carbon dioxide level Aromatic chemistry NMR of other spin $\frac{1}{2}$ nuclei Carbon-13 nmr (second half term)	B3.8 B3.10 B4.6 A4.5
*Part of this topic (B3.9 a-g) was covered in Year 1.	
Term 2	
Acidity & Basicity Equilibrium Transition Metals Free Energy & Entropy Gases & Kinetics Crystal Structures	B3.11 B1.5 (g-q) B2.4 B1.4 B1.6 (d-j) B2.5
The target is to have taught the entire course by the end of this term and completed at least one practical under exam conditions. One or two small sections are not specifically listed, but are covered when the appropriate opportunity arises or during practical work. An example is the conversion of aromatic nitro compounds into amines.	
Term 3	
Revision	