Chemistry I (Organic): Stereochemistry
Overview (2011-12)
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Aims
To provide an introduction to the shapes of organic molecules and the basic principles and nomenclature of stereogenic elements in organic molecules.

Summary
Molecular shape, symmetry and stereogenicity/chirality are central concepts for chemistry. They allow us to understand the spectroscopic properties of molecules and their reactivity with other molecules including large biopolymers (e.g. proteins and nucleic acids). This course will introduce and review these fundamental concepts and extend the ideas presented in Dr Sophia Yaliraki’s ‘spectroscopy workshop’ (Autumn term). The course material should provide an underpinning for all your forthcoming organic courses and also the intersectional spectroscopy course given by Dr’s Charlotte Williams and Sophia Yaliraki (Autumn Term).

Objectives:
On completion of this course you should be able to:

• distinguish chiral molecules from achiral ones.
• assign (R)- and (S)-descriptions to stereogenic centres in chiral molecules.
• appreciate the difference between enantiomers and diastereomers.

Course delivery (4 lectures)
Lecture 1: will examine hybridisation and shape.
Lecture 2: will cover stereogenic centres and other stereogenic elements in enantiomers.
Lecture 3: will cover Fischer projections, (R) & (S) notation and Cahn-Ingold-Prelog (CIP) priority rules.
Lecture 4: will cover CIP priority rules for axially chiral molecules & introduce diastereoisomers, epimers and meso stereoisomers.

Reference material
For 3D Jmol models of molecules referred to in the lectures see link @ http://www.ch.ic.ac.uk/spivey/?q=firstyear

The following texts both contain information pertinent to the course content.

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