

SECOND YEAR REVISION COURSE

Trinity Term
Prof Ben Davis
4 Lectures

This course provides revision for essential knowledge of the organic chemistry course, considered under two broad headings, molecular structure and molecular reactivity. Each of the reaction types will be illustrated with examples showing their application to synthetic organic chemistry.

Generally Recommended Books:

Functional Groups: Characteristics & Interconversions OCP 35 Meakins

A cracking summary of the 1st year basic reactions that are essential

Some modern methods of Organic Synthesis Carruthers

An excellent text that is particularly good on redox and full of interesting examples. There is a good new 4th edn.

Advanced Organic Chemistry Parts A & B Carey & Sundberg

Great general text.

I'll recommend additional individual texts on each topic for each lecture.

Lecture Topic

- 1 Molecular Structure 1: Stereochemistry & Conformational Analysis** - review of definitions, representations of stereochemistry, stereocontrol in reactions. Importance of rotations around single bonds in the understanding of structure and reactivity.
- 2 Alicyclic considerations**
Molecular Structure 2 : Spectroscopic Analysis - application of ms, IR, UV/Vis and NMR spectroscopy in the assignment of structure to molecules.
and
Molecular Reactivity 1: The Basics - Mechanistic principles in brief incl catalysis.
- 3 Substitution.**
Molecular Reactivity 2: Core 2nd yr Reactivity - Aromatic, carbocyclic and heterocyclic chemistry. Reactive Intermediates
- 4 Molecular Reactivity 3: Synthetic Utility** - Reduction and Oxidation chemistry. Organoelement chemistry.