

School of Chemistry

Aims and Objectives: Session 2023-2024

Module CH2601: Organic Chemistry 2

Course Title: Interconverting Functional Groups

Duration: 10 hours

Lecturers: Dr C. M. Young

Aims: The aim of this course is to discuss functional group chemistry and its importance in synthesis. Methods for the interconversion of functional groups will be described and illustrated with examples from the synthesis of medicinally important compounds.

Objectives:

1. To appreciate the methods for oxidation and reduction of oxygen containing functional groups and the reagents employed.
2. To know the relative reactivity of the oxidising and reducing agents and how they are employed to achieve selective oxidations.
3. Discussion of methods for the oxidation of alkenes, from epoxidation to oxidative cleavage, to include ozonolysis.
4. Discussion of methods for the reduction of alkenes and alkynes.
5. Discussion of methods for the synthesis and interconversion of alkyl halides and alcohols.
6. Survey the various methods available for the synthesis of carboxylic acids and their transformations into other functional groups.
7. Survey the methods for the synthesis of nitrogen containing functional groups (amines, amides, nitriles, nitro compounds). Oxidation and reduction of nitrogen containing functional groups.
8. All the synthetic procedures discussed above will be illustrated with examples, concentrating on compounds with medicinal or biological importance.