

School of Chemistry

Aims and Objectives: Session 2023-2024, Semester 2

Module CH2601: Organic Chemistry 2

Course Title: Aromatic and Heterocyclic Chemistry

Duration: 8 hours

Lecturers: Professor D. Philp

Aims: To consider the principles of aromaticity. To develop an understanding of basic mechanistic and reactivity principles of aromatic and heteroaromatic systems. To develop a knowledge of common reactions involving aromatic and heteroaromatic compounds.

Objectives:

1. To understand the concept of aromaticity and its applicability to carbocyclic and heterocyclic systems.
2. To understand aromatic stabilisation energy and the effect of aromaticity on acidity and basicity of organic compounds and their NMR spectra.
3. Understand the nomenclature used for common aromatic compounds.
4. To understand key reactions of aromatic substrates including electrophilic aromatic substitution and nucleophilic aromatic substitution.
5. To consider the effect of substituents on the rate and regioselectivity of aromatic substitution reactions.
6. To be able to devise selective routes to polysubstituted aromatic compounds using multistep synthetic sequences.
7. To consider other reactions of aromatic compounds, including the formation, reactivity and application of arynes and diazonium salts.
8. To understand the structure and reactivity of heteroaromatic compounds, including pyrroles, indoles, pyridines and imidazoles.