

School of Chemistry

Aims and Objectives: Session 2022-2023

Module CH4453: Materials Distance Learning

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Convenor: Dr E. R. Kay

Aims: This course is to provide the basic materials science knowledge underpinning the MChem and BSc Materials Chemistry degrees in a distance-learning mode. It aims to build on the students' fundamental knowledge of metals and polymers.

The Metals section will address mechanical properties, strength, failure, microstructure, alloy formation and processing.

The Polymers section will address basic synthesis and types of polymer, mechanical properties and processing of polymers and polymer composites.

Objectives:

Metals

1. To understand the mechanical properties of metals, including stress/strain and deformation behaviour.
2. To understand the role of defects and dislocations in governing the properties of metals.
3. To understand alloy formation and know some example alloys.
4. To know about metal processing technology.
5. To know how metals are protected against corrosion.

Polymers

1. To understand the structural differences between various types of polymer.
2. To understand some different methods of synthesis for these materials.
3. To understand the different mechanical properties of polymers.
4. To appreciate various applications of polymers and polymer composites.