

School of Chemistry

Aims and Objectives: Session 2023-2024, Semester 2

Module CH1402: Inorganic and Physical Chemistry 1 (Laboratory)

Duration: Approx. 24 hours (8 × tasks, in-person with some online components).

Staff: Dr R. T. Baker, Dr P. A. Connor, Dr S. M. Francis and Professor F. D. Morrison (Co-ordinator).

Aims: The inorganic and physical chemistry laboratory class consists of a series of eight experiment-based activities designed to illustrate basic chemical phenomena and reinforce concepts covered in lectures. It is also intended to develop general experimental, analytical, data analysis, presentation, and writing skills.

Objectives: Undertake eight activities to further develop an understanding of basic chemical phenomena; to expose students to several physical phenomena and data evaluation techniques used to investigate the chemical and physical properties of elements and compounds. The activities will be based on some combination of eight of the following:

1. Data handling and analysis
2. Hess's law
3. The gas laws
4. The photo-electric effect and Planck's constant
5. The spectrum of atomic hydrogen
6. Preparing buffers and buffer capacity
7. Shape-selective adsorption by a zeolite
8. Transition metal complexes
9. Activation energy for a hopping semiconductor
10. Model building – close-packed structures and interstitial site