

School of Chemistry

Aims and Objectives: Session 2023-2024, Semester 2

Module CH2701: Physical Chemistry 2

Course Title: Thermodynamics and Electrochemistry

Duration: 8 hours

Lecturer: Professor C. J. Baddeley

Aims: The course aims to build on and to develop many concepts and equations introduced during the first year. Students should be able to apply key equations and use thermodynamic data. It aims to develop an understanding of thermodynamics and equilibria in aqueous solution and its relevance to equilibrium electrochemistry.

Objectives:

1. To understand the scope and limitations of thermodynamics, state functions, standard states and apply the first law of thermodynamics.
2. To understand entropy at a macroscopic and molecular level and the importance of entropy and Gibbs energy in determining reaction spontaneity.
3. To understand the concept of thermodynamic equilibrium and its response to pressure and temperature changes.
4. To be familiar with equilibria in aqueous solution, the use of activities and the application of thermodynamics to solution electrochemistry and electrochemical cells.