Module code	SC-2243		
Module Title	Chemical Kinetics and Photochemistry		
Degree/Diploma	Bachelor of Science (Chemistry)		
Type of Module	Major Core		
Modular Credits	4	**Total student Workload**	10 hours/week
		Contact hours	4 hours/week
Prerequisite	None		
Anti-requisite	None		

Aims

The aim of this module is to provide students with fundamental concepts of chemical kinetics and photochemistry and their applications and importance in industry, energy and nature.

Learning Outcomes

On successful completion of this module, a student will be expected to be able to:

Lower order:	30%	- understand the basic concepts of molecular motion, diffusion and collision. - understand the concepts of kinetic equations. - understand the light induced excitation and photochemical reaction.
Middle order:	60%	- describe activation enthalpy and entropy and activation energy. - describe thermodynamic equilibrium and rate constants.
Higher order:	10%	- analyse the experimental data, including the graphs and errors. - work co-operatively in a team for problem solving in the practical situation.

Module Contents

- Molecular motion and diffusion
- Boltzman to Van't Hoff to Arrhenius equations.
- Arrhenius equation to collision theory to transition state theory and the Eyring equation.
- Steady state approximations
- Photochemistry, and reactions and deactivation pathways in photoexcited states.

Assessment	Formative assessment	Tutorial and feedback
	Summative assessment	Examination: 60%
		Coursework: 40% - 3 written assignments (10%) - 1 class test (10%) - 3 practical reports (20%)