

Module code	SC-4347		
Module Title	Surface Chemical Phenomena		
Degree/Diploma	Bachelor of Science (Chemistry)		
Type of Module	Major Option		
Modular Credits	2	Total student Workload	4 hours/week
		Contact hours	2 hours/week
Prerequisite	None		
Anti-requisite	None		
Aims			
The module is designed for students to understand the fundamental concepts of surfaces and interfaces, physical and chemical processes on the interfaces, experimental methods on surface characterizations and analytical techniques, surfactants, and adsorption isotherms.			
Learning Outcomes			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order:	50%	- understand the fundamental concepts of surfaces and interfaces - understand the physical and chemical processes on the interfaces	
Middle order:	30%	- analyse the mixing-demixing, phase transition, and adsorption processes	
Higher order:	20%	- analyse a certain topic independently and collaboratively in a team	
Module Contents			
<ul style="list-style-type: none"> - Concepts and currents trends of surface phenomena Surfaces and interfaces; liquid-liquid interfaces; mixing-demixing phenomena; Gibbs free energy; spinodal and binodal curve; molecular interactions; surface energy; phase transition - Thermodynamics of interfaces Gibbs dividing interfaces; liquid-liquid interfaces; surface free energy and surface tension; thermodynamics of adsorption. - Experimental determinations of surface properties Surface tension measurement, atomic force microscopy, scanning tunnelling microscopy, plasmon field, Brewster angle microscopy, and surface enhanced Raman spectroscopy. - Preparation methods and applications of nanoparticles, liquid droplets, and quantum dots. 			
Assessment	Formative assessment	Tutorial and feedback	
	Summative assessment	Examination: 60% Coursework: 40% - 2 class tests (20%) - 2 written assignments (20%)	