

Course Code	CP203			
Course Title	Selected Topics of Chemistry for Engineers			
No. of Credits	3			
Pre-requisites	None			
Compulsory/Optional	Compulsory			
Aim(s): To provide the learner with essential knowledge and practice to understand the fundamental chemistry concepts required for engineering studies.				
Intended Learning Outcomes:				
On successful completion of the course, the students should be able to				
ILO 1: Apply error analysis for chemistry laboratories				
ILO 2: Analyse acidic and basic properties of aqueous solutions.				
ILO 3: Apply principles of electrochemistry, polymer chemistry and surface chemistry to explain industrial applications				
ILO 4: Formulate industrial organic chemicals in laboratory scale.				
Topics	Time Allocation/Hours			
	L	T	P	A
<ul style="list-style-type: none"> Concentration units & unit conversions Mass, volume and mole percentages, mole fraction, parts per million, parts per billion, molarity, and molality. 	01	03		08
<ul style="list-style-type: none"> Error analysis in chemistry laboratory Types of errors, significant figures, rejection of data and the Q-test, confidence limit and confidence level, accuracy, precision/reproducibility, normal distribution curve. 		03		04
<ul style="list-style-type: none"> Applications of aqueous equilibria Equilibria expressions, common ion effect, buffer systems, acid base titrations, pH curves, acid-base solutions. 	05		18	
<ul style="list-style-type: none"> Electrochemistry Electrochemical cells, galvanic cells, single electrode potential, Nernst equation, Electrode potential and spontaneous reactions, Batteries, Fuel cells, Corrosion, Hot deep galvanizing. 	05	06	09	06
<ul style="list-style-type: none"> Surface Chemistry <ul style="list-style-type: none"> Surface and interfacial chemistry; Catalysts. 				
<ul style="list-style-type: none"> Polymer Chemistry Principals of monomers and their polymers; Properties of polymers; Polymerisation, Retardation and inhibition. 	04			
<ul style="list-style-type: none"> Industrial Organic Chemistry Functional groups, Industrial chemicals and manufacturing processes. 	10	50		
Total equivalent hours	30	50		