

### SAPTHAGIRI COLLEGE OF ENGINEERING

(Affiliated to Visvesvaraya Technological University, Belagavi and Approved by AICTE New Delhi) (Accredited by NAAC with "A" Grade and Accredited by NBA for CSE, ECE, EEE, ISE and ME) (ISO 9001:2015 & ISO 14001:2015 Certified Institute)

# **Department of Chemistry**

	URSE: ENGG CHEMISTRY THEORY BJECT CODE:21CHE12										
	Course Objectives										
1	Master the basic knowledge of engineering chemistry for building technical competence in industries, research and development.										
2	To develop knowledge in the fields use of free energy in chemical equilibrium, electrochemistry and energy storage systems, corrosion and metal finishing.										
3	To understand the importance of alternative energy systems, green chemistry, volumetric analysis, Water chemistry, Instrumental methods of analysis and Nanomaterials.										

Course outcomes											
At the end of this course the students will be able to											
CO1	Analyze the concepts of electrochemical energy systems & batteries.										
CO2	Understand the fundamental concepts of corrosion, its control & techniques of Metal finishing										
CO3	Understand the importance, synthesis and applications of polymers and nanomaterials.										
CO4	Conceptualize the principles of green Chemistry, understand the properties and application of alternative fuels.										
CO5	Analyze the water quality parameters and also fundamental principles, applications of analytical techniques.										

### **CO-PO Mapping**

Mapping of Course outcomes, Program Objectives and Program specific outcomes															
	<b>Note:</b> $1 = \text{Slight } 2 = \text{Moderate } 3 = \text{Strong}$														
Course		Program Outcomes PSOs Tota													Total
outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO-1	3														
CO-2	3														
CO-3	3						1								

CO-4	3			1				
CO-5	3							
Average								

### **Course objectives:**

**CLO1** Quantitative analysis of materials by volumetric and chemical methods.

**CLO2** Instrumental methods for developing experimental skills in building technical competence

#### Lab CO

COURSE: ENGG CHEMISTRY LAB										
SUBJECT CODE: 21CHEL16										
	Course outcomes									
At the end	of this course the students will be									
CO1	Able to analyze the strength of weak acids (pKa) and measure the viscosity coefficient of organic liquid.									
CO2	Able to estimate the amount of substance present in the given solution using									
	Potentiometer, Conductometric and Colorimetric analysis									
CO3	Able to analyze the total hardness and Chemical oxygen demand in the given water									
	sample by volumetric method.									
CO4	Able to estimate percentage of nickel, copper and iron by volumetric analysis.									
CO5	Able to estimate the amount of sodium and potassium by flame photometry and									
	understand the synthesis of nanomaterials by precipitation method.									

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Course outcomes	Program Outcomes												PSOs		Total
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
CO-1	3														
CO-2	3														
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CO-4	3														
CO-5	3														
Average															