

OUTCOME BASED CURRICULUM

PRPC

SEMESTER III	INDUSTRIAL PROCESS CALCULATION	FORMAT-3	SHEET NO	
COURSE CODE			HRS	MARKS
COURSE OUTCOME-1	To apply the concept of units and dimensions in solving refinery and petrochemical engineering problems.			
LEARNING OUTCOME-1	To use different system of units for physical quantities dimension and units.			
CONTENTS	To use different system of units for physical quantities dimension and units.			
METHOD OF ASSESSMENT				
LEARNING OUTCOME-2	To differentiate fundamental and derived quantities			
CONTENTS	Fundamental and derived quantities, unit in different systems.			
METHOD OF ASSESSMENT				
LEARNING OUTCOME-3	To convert units of particular quantity from one system to another system.			
CONTENTS	Conversion of units, dimensional equation.			
METHOD OF ASSESSMENT				
COURSE OUTCOME-2	To apply the concept of mole, weight, density and volume for basic chemical calculation.			
LEARNING OUTCOME-1	To use mole concept for mathematical calculation in refinery industry.			
CONTENTS	Basic chemical calculation introduction, mole concept, atomic weight, molecular weight and equivalent weight and mass reactions in chemical reactions.			
METHOD OF ASSESSMENT				
LEARNING	To find molarity, normality and normality of a given solution.			

CONTENTS	Methods of expressing the composition of mixtures and solutions. Weight percent, mole percent, volume percent, molarity, molality and normality, density specific gravity and 'API gravity', Baume.		
METHOD OF ASSESSMENT			
COURSE OUTCOME-3	To use ideal gas law for solving refinery engineering problems.		
LEARNING OUTCOME-1	To describe various gas laws used for calculations in problem refinery		
CONTENTS	Behaviour of ideal gases - Boyle's law, Charlie's law, Avogadro's hypothesis, partial pressure, Dalton's law of partial pressure, Amagats law of pure component volume.		
METHOD OF ASSESSMENT			
LEARNING OUTCOME-2			
CONTENTS	Standard conditions, application of ideal gas law, vapour pressure.		
METHOD OF ASSESSMENT			
COURSE OUTCOME-4	To solve the material balance problems in refinery and petrochemical industry.		
LEARNING OUTCOME-1	To prepare a diagram for various unit problem regarding material balance.		
CONTENTS	Material balance – Introduction process flow sheet and block diagram.		
METHOD OF ASSESSMENT			
LEARNING OUTCOME-2	To differentiate process with chemical reaction and without chemical reaction.		
CONTENTS	Processes involving no chemical reaction, processes involving chemical reaction, concept of limiting and excess reactant, Tie and Key component		
METHOD OF ASSESSMENT			
LEARNING OUTCOME-3	To describe the concept of conversion, recycling purifying operations.		
	percentage conversion and degree of comparison simple		

	of some common process.		
METHOD OF ASSESSMENT			
COURSE OUTCOME-5	To calculate calorific value and air required for combustion for various fuels in industry		
LEARNING OUTCOME-1	To classify fuel on the basis of structure.		
CONTENTS	Fuel and combustion – Introduction, calorific value of fuels proximate and ultimate analysis of coal, simple calculations.		
METHOD OF ASSESSMENT			
LEARNING OUTCOME -2	To determine air required for combustion in petrochemical industry.		
CONTENTS	Air Requirement for combustion and flue gases. Theoretical and excess air requirement for combustion sample combustion calculations.		
METHOD OF ASSESSMENT			