

RGPV (DIPLOMA WING) BHOPAL		OBE CURRICULUM FOR THE COURSE		FORMAT-3	Sheet No. 1/3
Branch	Refinery and Petrochemical Engg.		Semester	4th Sem.	
Course Code		Course Name	Fluid Particle Mechanics		
Course Outcome 1	To understand properties and handling of particulate solids			Teach Hrs	Marks
Learning Outcome 1.1	To understand particulate solid characterization.			08	10
Contents	Characterization of solid particles, particle shape ,particle size, mixed particle size analysis, specific surface mixture, average particle size, number of particle size.				
Method of Assessment	End Sem		Theory External		
Learning Outcome 1.2	To separate material by screening			07	10
Contents	Screen analysis, standard screen series ,differential analysis of screens, cumulative analysis of screens, screen capacity and its efficiency, screen capacity and its efficiency, screening equipments.				
Method of Assessment	Internal Midsem				
LO1.3	To select appropriate size reduction equipment for given material.			07	08
Content	Size reduction, crushing laws, equipments for size reduction, open and closed circuit grinding.				

Method of assessment	End Sem Theory External		
Learning Outcome- 1.4	To analyze given sample by screens	05	10
Content	To analyze the given sample by differential and cumulative methods using standard screen.		
Method of assessment	End Sem Practical External		
LO1.5	To operate size reduction equipments	05	05
Content	'Study of Ball mill, Rod mill, Jaw crusher smooth roll crushers.		
Method of assessment	Internal practical		
CO2	To use appropriate mixing and agitation method and equipments.		
LO2.1	To understand mixing and agitation.	07	10
Content	Introduction, basic principles, measures of mixer performance, ribbon blender, Internal screen mixer, tumbling mixer, impact wheels.		
Method of assessment	End Sem theory External		
Learning Outcome 2.2	To select mixer for cohesive solids	08	08
Content	Change can mixers, kneaders, dispersers and masticators, mixer extruders, mixing rolls, Muller mixer, pug mills, axial mixing, liquid-liquid and gas-liquid dispersions by		

	mechanical agitator, mixing index ,mixing effectiveness.		
Method of assessment	End Sem Theory External		
Learning Outcome-2.3	To determine degree of mixing	05	05
Contents	Determine the degree of mixing given binary solid system in a mixer.		
Method of assessment	End Sem practical		
CO3	To understand working of filtration equipment for different petrochemical industries and selection of filtration process.		
Learning Outcome3.1	To learn principles of filtration	08	10
Content	Introduction, basic concept, cake filtration ,pressure drop through filter cake, filter medium resistance, constant pressure filtration ,washing filter cake.		
Method of assessment	Mid Sem Test Internal		
Learning Outcome3.2	To get knowledge of different filter	07	08
Content	Filter press, shell and leaf filter, vacuum filter, centrifugal filters, suspended batch centrifuges. Automatic batch centrifuges, continuous filtering centrifuges, filter media, filter aids microfiltration.		
Method of assessment	End Sem Theory External		
LO3.3	To operate plate and frame filters	05	10
Content	To study of plate and frame filter press and its operation.		
Method of assessment	Internal practical		

LO3.4	To get knowledge of rotary drum filter	05	10
Content	Study and operation of rotary drum filter.		
Method of assessment	Internal practical		
CO4	To understand sedimentation operation		
LO4.1	To get the basic concept of sedimentation	07	08
Content	Basic principles, design of gravity sedimentation tank, centrifugal sedimentation, basic principle of flotation.		
Method of assessment	End Sem theory external hrs-7 marks-8		
LO4.2	To get understanding of flotation	07	10
Content	Flotation agents, flotation equipments, principles of clarification, liquid clarification, gas clarification		
Method of assessment	Internal sessional, quiz,		
LO4.3	To understand setting process	05	05
Content	Study the setting characteristics of given slurry in a batch settling test		
Method of assessment	End Sem External practical		
CO5	To select suitable conveyor for conveying different materials and to understand fluidization.		
LO5.1	To handle solid material	08	10
Content	Introduction, belt conveyors, chain conveyor screen conveyor, apron conveyor, bucket elevators, pneumatic conveyors, hydraulic conveyor.		

Method of assessment	End Sem Theory External		
LO5.2	To understand fluidization	06	08
Content	Particulates and aggregative fluidization characteristics of fluidized bed due to particle size, pressure drop through fluidized bed, fluid catalytic process bed drying.		
method of assessment	End Sem theory External		
LO5.3	To get knowledge of conveyors	05	05
Content	Study of pneumatic conveyors, belt conveyors screw conveyor.		
Method of assessment	End Sem practical exam		

Marks :150 periods:115