

Lesson Plan
Department of Metallurgical Engineering
UGIE Rourkela
Session :2023-24

UTKALMANI GOPABANDHU INSTITUTE OF ENGINEERING, ROURKELA Session: 2022-23			
Discipline: Metallurgical Engineering	Semester: 3rd	Name of the Teaching Faculty: SUMEETA RANI SARAP	
Subject: Mineral processing(TH-03)	No. of days/per week class allotted: 4	Semester from Date: 01. 08. 2023 to Date: 30.11.2023 No. of weeks: 15	
Week	Class No.	Module	Lecture Topics
1	1	Chapter -1: Unit Operations : Oredressing	Introduction
	2		Various mineral resources of India
	3		Distinction between Mineral and Ore
	4		scope and objective of Ore dressing
2	5	Chapter -2: Crushing	crushing operations
	6		Various type of crushers
	7		-do-
	8		-do-
3	9		-do-
	10		Capacity and reduction ratio of crusher
	11		-do-
	12		Angle of nip of a crusher
4	13		Gyratory and roll crushers
	14		Principle of operation of gyratory and roll crushers
	15		-do-
	16		Types of grinding equipment
5	17	Chapter-3: Grinding	-do-
	18		Ball mill operations
	19		-do-
	20		-do-
6	21		Difference between open circuit and close circuit grinding
	22		-do-

7	23	Chapter-4: Laboratory Sizing Technique	methods of size analysis
	24		types of standard screens
	25		Rotap sieve shaker
	26		-do-
8	27	Chapter-5: Industrial Screening	principle of screening
	28		Types of screening
	29		Industrial screens
	30		-do-
9	31	Chapter-6: Gravity Concentration	classifiers and their applications
	32		-do-
	33		principles of flowing film concentration
	34		wilfley table
10	35	Chapter-7: Heavy Media Separations :	-do-
	36		Jigging
	37		stratification in jigs
	38		-do-
11	39	Chapter-8: Flotation	Types of jigs
	40		principle of heavy media separations
	41		different industrial process
	42		-do-
12	43	Chapter-9: Magnetic & Electrostatic Separator	Du - Pont process
	44		chance process
	45		froth and skin flotation
	46		principle of froth flotation
13	47	Chapter-10: Flotation	-do-
	48		practical utility
	49		-do-
	50		-do-
14	51	Chapter-11: Magnetic & Electrostatic Separator	Magnetic separator
	52		-do-
	53		Electrostatic Separator
	54		-do-
15	55	Chapter-12: Applications of Magnetic & Electrostatic Separator	Applications of Magnetic & Electrostatic Separator
	56		-do-
	57		Revision class
	58		Revision class
15	59		Revision class
	60		Important question discussion