

GOVT. POLYTECHNIC MAYURBHANJ
LESSON PLAN OF MINERAL PROCESSING
ACADEMIC YEAR (2025-26) WINTER

Name of the Teaching Faculty: SUBRAT KUMAR BEHERA

Discipline: Metallurgy engineering.

Semester: 3rd

Subject: MINERAL PROCESSING, Course code: WTRC 213

No. of Days / per week class allotted : 03

Semester From date: 14.07.2025

To Date: 15.11.2025

MONTH	Week	Day	Unit	Topics
AUGUST	2 nd	1 st	UNIT-1	Definition and importance OF ORE & MINERAL , Role in the metallurgy industry
		2 nd		Various mineral resources of India , Mineral and Ore , Types of Ores Metallic ores, Non-metallic ore
		4th		scope and objective of Ore dressing ,Different physical and chemical property of ore with their application to mineral dressing
	3 rd	1 st	UNIT-2	scope and objective of Ore dressing ,Different physical and chemical property of ore with their application to mineral dressing
		2 nd		Importance of Comminution in mineral processing
		4th		Mechanisms of size reduction
	4 th	1 st		Mechanisms of size reduction
		2 nd		Mechanisms of size reduction
		4th		Blake jaw Crusher ,Dodge jaw Crusher,
	5 th	1 st		Blake jaw Crusher ,Dodge jaw Crusher,
		2 nd		1 st Monthly Test
		4th		NUAKHAI HOLIDAY

SEPTEMBER	1st	1 st	UNIT-3	Roll crusher & angle of Nip ,capacity and reduction ratio of crusher
		2 nd		Roll crusher & angle of Nip ,capacity and reduction ratio of crusher
		4th		Laws of Crushing
	2nd	1 st		Laws of Crushing
		2 nd		Ball mill operation
		4th		Ball mill operation
	3rd	1 st		open circuit grinding and close circuit grinding
		2 nd		Ro-tap Sieve Shaker Particle size analysis
		4th		Basic fundamentals & principle of jigging , operations and application of wilfley table

OCTOBER		1 st	UNIT-4	suspensions
		2 nd		Principle of froth flotation , practical utility of frother, collector, modifier, activators, depressant
		4th		INTERNAL ASSESSMENT 1
				MAHASAPTAMI HOLIDAY
	5 th	1 st		MAHASAPTAMI HOLIDAY
		2 nd		Magnetic and Electrostatic separator with their application to mineral dressing(Two Drum Ball-Norton Wet magnetic High Tension or Huff's Electrostatic separation
		4th		Magnetic and Electrostatic separator with their application to mineral dressing(Two Drum Ball-Norton Wet magnetic High Tension or Huff's Electrostatic separation
	1 st	1 st		Advanced Comminution Techniques: High-Pressure Grinding Rolls (HPGR)
		2 nd		Vijaya dashmi HOLIDAY
		4th		Ultra-Fine Grinding (UFG)
	2 nd	1 st		RASA PURNIMA HOLIDAY
		2 nd		Microwave-Assisted Comminution
		4th		Advanced Gravity Separation Techniques: Multi-Gravity Separator (MGS)
	3 rd	1 st		Advanced Gravity Separation Techniques: Multi-Gravity Separator (MGS)
		2 nd		Advanced Flotation Techniques: Microbubble & Nanobubble Flotation
		4th		INTERNAL ASSESSMENT 2
	4 th	1 st		DIWALI HOLIDAY
		2 nd		
		4TH		Advanced Flotation Techniques: Microbubble & Nanobubble Flotation

NOVEMBER	5th	1 st	UNIT-4	Doubt Clear Class
		2 nd		Advanced Flotation Techniques: Microbubble & Nanobubble Flotation
		4th		2 ND Monthly Test
	2nd	1 st		Magnetic & Electrostatic Separation: High-Intensity Magnetic Separation (HIMS)
		1 st		Magnetic & Electrostatic Separation: High-Intensity Magnetic Separation (HIMS)
		2 nd		Sustainable & Eco-Friendly Mineral Processing: Dry Beneficiation Technique
		4th		Sustainable & Eco-Friendly Mineral Processing: Dry Beneficiation Technique
	3rd	1 st		Zero-Waste Processing
		2 nd		Zero-Waste Processing
		4th		3 RD Monthly Test

11.8.25
Subject Expert
Metallurgy Engg.

11/04/2025
HOD, Metallurgy Engg.
Govt. Polytechnic Mayurbhanj

11/04/2025
Academic Co-ordinator
Govt. Polytechnic Mayurbhanj