

LESSON PLAN

Discipline: Metallurgical Engineering	Semester: 3 rd Semester	Name of the Teaching Faculty: Er Suvendu Muduli
Subject: Mineral Processing Sub code: Th-2 (MTPC203)	No of days /Week class allotted:03	Semester from Date: 01/7/2026 to 05/11/2026 No of weeks: 21

Course Outcomes:

CO1. Understanding of Mineral Processing principles. To explain the basic principles & importance of mineral dressing including key concepts like ore, gangue & beneficiation.

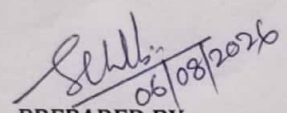
CO2. Mastery of mineral separation techniques. To apply various mineral processing techniques & explain their underlying physical & chemical principles.

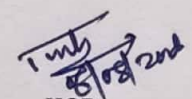
CO3. Ability to integrate theory with industrial applications. To apply theoretical knowledge to solve practical problems in mineral processing industry.

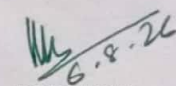
CO4. Ability to work with advanced technologies.

Month	Week	No of periods available	Class Day	Theory topics	CO
July	1 st	1P	02-07-2026	Defination and important,	CO1
	2 ND	3P	03-07-2026	role in the metallurgy industry	CO1
			07-07-2026	Various mineral resources of India	CO1
			09-07-2026	Mineral and ore , types of ores Metallic ores	CO1
			10-07-2026	Non metallic ores	CO1
	3 RD	3P	14-07-2026	Scope and objective of ore dressing	CO1
			17-07-2026	Different physical and chemical property of ore with their applications to mineral processing	CO1
			21-07-2026	Quiz test	CO1
	4 TH	3P	23-07-2026	Size reduction	CO1
			24-07-2026	Importance of comminution in mineral processing	CO1
			28-07-2026	Mechanisms of size reduction	CO1
	5 TH	3P	30-07-2026	CLASS TEST	CO1
			31-07-2026	Blake jaw crusher	CO2
			04-08-2026	Dodge jaw crusher	CO3
Aug	1 ST	3P	06-08-2026	Roll crusher	CO2
			07-08-2026	Law of crushing	CO2
			11-08-2026	Ball mill Operation	CO2
	2 ND	2P	13-08-2026	Open circuit grinding	CO2
			14-08-2026	Close circuit grinding	CO2
			18-08-2026	Sizing & Concentration Methods	CO2
	3 RD	3P	20-08-2026	Ro-tap sieve shaker particle size analysis	CO2
			21-08-2026	Basic fundamentals & principle of jigging	CO2
			25-08-2026	Quiz test	CO2
	4 TH	2P	28-08-2026	Revision & Discussion	CO2
			01-09-2026	1 st Internal Assessment	CO1 to CO2
Sep	1 ST	2P	03-09-2026	Operation and application of Wilfley table	CO3

	2 ND	3P	08-09-2026	Principle of heavy media separation	CO3
			10-09-2026	Industrial process using heavy liquid and heavy suspension	CO3
			11-09-2026	Principle of froth flotation	CO3
	3 RD	3P	17-09-2026	Practical utility of frother , collector, modifier, activators, depressant	CO4
			18-09-2026	Magnetic and electrostatic separator with their application to minerals dressing	CO4
			22-09-2026	Advanced topics in mineral dressing	CO4
	4 TH	3P	24-09-2026	Quiz test	CO4
			25-09-2026	Revision & Discussion	CO4
			29-09-2026	CLASS TEST	CO4
Oct	1 ST	3P	01-10-2026	Advanced comminution techniques: high pressure Grinding	CO4
			06-10-2026	Microwave-Assisted Comminution	CO4
			08-10-2026	Advanced Gravity Separation Techniques	CO4
	2 ND	3P	09-10-2026	Multi- gravity separator,	CO4
			13-10-2026	Microbubble & Nanobubble Flotation Magnetic Separation	CO4
			15-10-2026	advanced Flotation	CO4
	3 RD	1P	16-10-2026	Revision & Discussion	
	4 TH	3P	22-10-2026	2 nd Internal Assessment	CO4
			23-10-2026	Refining processes,	CO4
			27-10-2026	High intensity Magnetic separation	CO4
	5 TH	2P	29-10-2026	Sustainable &eco friendly Mineral processing	CO4
			30-10-2026	Dry beneficiation technique, zero waste processing	CO1 to CO4
Nov	1 ST	2P	03-11-2026	Viva	CO1 to CO4
			05-11-2026	Course wrap-up & question bank discussion	


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