

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2022-2023

Discipline: Metallurgical Engineering Engg. Semester: 3rd

Name of the Teaching Faculty: Anadi Charan Jena

Subject: M.P.No. of Days/per week class allotted 04Semester From Date: 15.9.22 To Date: 22.12.22 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
1st	1st Topic-1	Mineral resources of India, unit operations
	2nd	Mineral resources of India
	3rd	- do -
	4th Topic-2	Crushing, Introduction
2nd	1st	Comminution, Purpose
	2nd	Liberation, purpose
	3rd	Types of crushers
	4th	Crushing operations
3rd	1st Topic-3	Angle of nip, Derivation
	2nd	Comparison between Blake and Dodge crusher.
	3rd	Roll crushers, principles
	4th	Roll crusher, (contd.)



Signature of the Faculty

Subject: M.P. No. of Days/per week class allotted 04

Semester From Date: 15.9.22 To Date: 22.12.22 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
4th	1st	Gratory Crusher, operation
	2nd Topic-4	Grinding, Introduction
	3rd	Grinding circuit.
	4th	Grinding Equipment
5th	1st	Ball mills, Principles
	2nd	Characteristics of Ball mills.
	3rd	Rod mills and Tube mills
	4th	open and closed circuit grinding
6th	1st Topic-5	Laboratory size analysis
	2nd	- do -
	3rd	Size analysis methods
	4th	Screens and types.


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Week	Class Day	Theory /Practical Topics
7 th	1 st	Methods of screening
	2 nd	Ro-tap sieve shaking
	3 rd	Industrial Screening
	4 th	Screening principles
8 th	1 st	Characteristics of screening
	2 nd	Classification
	3 rd	- do.
	4 th	Types of classifiers, Applications
9 th	1 st Topic-7	Gravity concentration
	2 nd	Flowing film concentration
	3 rd	Characteristics of concentration
	4 th	Welfley Tabling



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Week	Class Day	Theory / Practical Topics
10 th	1 st	operation of Wilfley Table
	2 nd	Jiggery, principles
	3 rd	stratification in jigs
	4 th	Types of jigs
11 th	1 st Topic-8	Heavy Media Separation
	2 nd	Principles of heavy media separation
	3 rd	Industrial processes using heavy liquids
	4 th	Use of heavy suspensions
12 th	1 st	Industrial processes using heavy liquids (contd)
	2 nd	Industrial processes using heavy suspensions
	3 rd	Flotations, principles.
	4 th	Principles of froth flotation methods.



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Week	Class Day	Theory/Practical Topics
13 th	1 st	Skin and Froth floatation
	2 nd	Frothing reagents, utilities
	3 rd	Collectors, modifiers, frothers
	4 th	Types of flotation cells
14 th	1 st	Description of flotation cells.
	2 nd	Applications of flotation process
	3 rd Topic-10	Magnetic and Electrostatic Separators
	4 th	Principle of the processes.
15 th	1 st	Types of Magnetic Separators, applications.
	2 nd	Principles of electrostatic separation
	3 rd	Types of electrostatic separators
	4 th	Application of Magnetic and electrostatic separators



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