

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF
ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN
Session-2023-2024

Discipline: Metallurgical Engg. Semester: 3rd ~~(2nd)~~

Subject: Mineral Processing (M.P.)

Name of the Teaching Faculty: Anadi Charan Jena

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

Semester From Date: 1.8.23 To Date: 30-11.23 No. of Weeks: 16

Week	Class Day	Theory /Practical Topics
1st Topic-1	1st	Mineral Resources of India Unit operations
	2nd	Contd. Mineral Resources of India
	3rd	Contd. Mineral Resources of India
	4th Topic-2	Introduction to Crushing
2nd	1st	Comminution, Introduction
	2nd	Liberation, principles
	3rd	Crushing Devices, Types
	4th	Crushing operations
3rd	1st Topic-3	Angle of nip, Derivation
	2nd	Comparison between Dodge & Blake Crusher
	3rd	Roll crusher
	4th	Contd. Roll crusher.


Signature of the Faculty

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

Semester From Date: 1-8-23 To Date: 30-11-23 No. of Weeks: 16

Week	Class Day	Theory /Practical Topics
4th	1st	Rotary crusher, diagram, operation.
	2nd Topic-4	Grinding
	3rd	Grinding circuit
	4th	Grinding equipment
5th	1st	Ball mills
	2nd	Characteristics of ball mills
	3rd	Rod mills & Tube mills
	4th	Open circuit and closed circuit grinding
6th	1st Topic-5	Laboratory size analysis
	2nd	Contd- Laboratory size analysis
	3rd	Size analysis methods
	4th	Screens, Types of Screens.


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Week	Class Day	Theory /Practical Topics
7 th	1 st	Screening methods
	2 nd	Ro-tap sieve shaker, operations
	3 rd	Industrial Screening
	4 th	Principles of Screening, Mechanisms.
8 th	1 st	Characteristics of Screening
	2 nd	Classification, principles
	3 rd	Contd. classification
	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	Wzifley Tabling.


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Week	Class Day	Theory / Practical Topics
10 th	1 st	operation of Welfley Table, Advantages
	2 nd	Jigging, Principles
	3 rd	stratification in jigs
	4 th	Type of Jigs, Descriptions.
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	Contd- Industrial processes using heavy liquids.
12 th	1 st	Use of heavy suspensions
	2 nd	Industrial Processes using heavy suspensions
	3 rd	Flotation process
	4 th	Principles of froth flotation.


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Semester From Date: 1.8.23 To Date: 30.11.23 No. of Weeks: 16

Week	Class Day	Theory /Practical Topics
13 th	1st	SKin and froth flotation
	2nd	Frothers, uses
	3rd	Collectors, modifiers, frothers
	4th	Types of flotation cells.
14 th	1st	Description of flotation cells
	2nd	Applications of flotation processes
	3rd Topic-10	Magnetic and electrostatic separation
	4th	principles of the processes
15 th	1st	Types of magnetic separators, Applications
	2nd	principles of electrostatic separation
	3rd	Types of electrostatic separators
	4th	Applications of electrostatic separators.


Signature of the Faculty