



IIPM SCHOOL OF ENGINEERING & TECHNOLOGY

LESSON PLAN: 2023-24

Sub: Th.4 (a). MINERAL DRESSING

Branch : Mining Semester : 6th

Faculty name : Sanjay Kumar Majhi

Duration : 60 hours

Objective :

- Explain the dynamic natural agencies that are constantly moulding the landscape of earth. He will be able to visualize the erosional and depositional landforms created by natural agencies.
- Distinguish between Igneous, Sedimentary and Metamorphic rocks and their texture and structures.
- Distinguish and identify the various structures that one may encounter in the field.
- Underline the importance of crystal structures in the identification and study of minerals.
- Identify minerals based on their physical properties. They will possess a sound knowledge of silicate structures.

Learning Outcome: In majority of the cases, materials that need to be mined in order to reach the hidden treasure are rocks and minerals. It is therefore, essential for a mining engineer to have the basic knowledge of geology.

Sl. No	Chapter	Proposed Week for Teaching	Lecture No.	Sub. Topic	Important Teaching Points	Content Source
01	I	1 ST	01	mineral dressing	Introduction	Principles of Mineral Dressing
02			02	mineral dressing	objective & scope of application of mineral dressing in surface & u/g mines.	Principles of Mineral Dressing
03			03	Unit Operations	Working principle of Blake & dodge jaw crushers	Principles of Mineral Dressing
04			04	Unit Operations	Diff. Between Blake & dodge jaw crushers	Principles of Mineral Dressing
05		2 ND	01	Unit Operations	gyratory & cone crushers	Principles of Mineral Dressing
06			02	Unit Operations	roll crusher.	Principles of Mineral Dressing

07	II		03	Unit Operations	cone crushers	Principles of Mineral Dressing
08			04	Unit Operations	Unit Test & Doubt class	-----
09		3 RD	01	Grinding	introduction	Principles of Mineral Dressing
10			02	Grinding	principle of ball mill operation	Principles of Mineral Dressing
11			03	Grinding	open circuit grinding, close circuit grinding,	Mineral Processing Technology
12			04	Grinding	wet grinding.	Mineral Processing Technology
13		4 TH	01	Grinding	dry grinding.	Mineral Processing Technology
14			02	Grinding	Doubt class	-----
15			03	Lab. Sizing	introduction	Mineral Processing Technology
16			04	Lab. Sizing	procedure for size analysis	Mineral Processing Technology
17		5 TH	01	Lab. Sizing	use of standard screen	Mineral Processing Technology
18			02	Lab. Sizing	Particles shape & size	Mineral Processing Technology
19			03	Lab. Sizing	Sub-level technique	Mineral Processing Technology
20			04	Lab. Sizing	Unit test	-----
21		6 TH	01	Industrial Screening	introduction	Principles of Mineral Dressing
22			02	Industrial Screening	principle of industrial screening	Principles of Mineral Dressing
23			03	Industrial Screening	Classification or types	Principles of Mineral Dressing
24			04	Industrial Screening	operation of classifier	Principles of Mineral Dressing
25		7 TH	01	Industrial Screening	their application.	Principles of Mineral Dressing
26			02	Industrial Screening	Doubt class	-----
27			03	Gravity Concentra tion	Introduction	Mineral Processing Technology

28	III	8 TH	04	Gravity Concentra tion	principles of wilfly table	Mineral Processing Technology
29			01	Gravity Concentra tion	its operation	Mineral Processing Technology
30			02	Gravity Concentra tion	Intro. On jigs	Mineral Processing Technology
31			03	Gravity Concentra tion	elementary idea regarding the operation jigs.	Mineral Processing Technology
32			04	Gravity Concentra tion	Shaking table	Mineral Processing Technology
33	IV	9 TH	01	Gravity Concentra tion	Unit Test	-----
34			02	Heavy Media Separation	Introduction	Principles of Mineral Dressing
35			03	Heavy Media Separation	fundamental principle of heavy media separation	Principles of Mineral Dressing
36			04	Heavy Media Separation	Dense medium	Principles of Mineral Dressing
37		10 TH	01	Heavy Media Separation	Lab. Heavey Liquid test	Principles of Mineral Dressing
38			02	Heavy Media Separation	Organic efficiency	Principles of Mineral Dressing
39			03	Heavy Media Separation	Doubt class	Principles of Mineral Dressing
40			04	Heavy Media Separation	DMS Circuit	Principles of Mineral Dressing
41		11 TH	01	Heavy Media Separation	Unit Test	-----
42			02	Flotation	Introduction	Mineral Processing Technology
43	03		Flotation	principle of froth floatation	Mineral Processing Technology	
44	04		Flotation	Classification of minerals	Mineral Processing Technology	
45	V	12 TH	01	Flotation	Collector & frothers	Mineral Processing Technology
46			02	Flotation	Regulators & imp. Of ph	Mineral Processing Technology
47			03	Flotation	Typical floatation plant	Mineral Processing Technology
48			04	Flotation	Control of floatation plant	Mineral Processing Technology

49		13 TH	01	Floatation	practical utility of frother, collection, modifiers & depressants.	Mineral Processing Technology
50	02		Floatation	illustrate floatation cell.	Mineral Processing Technology	
51	03		Floatation	Doubt class on Previous Topics	Mineral Processing Technology	
52	04		Magnetic & Electrostatic S Magnetic	Introduction	Principles of Mineral Dressing	
53		14 TH	01	Magnetic & Electrostatic Separators	Working Principle of Magnetic Separators	Principles of Mineral Dressing
54	02		Magnetic & Electrostatic Separators	Magnetic properties of Substances	Principles of Mineral Dressing	
55	03		Magnetic & Electrostatic Separators	Applications of Magnetic Separators	Principles of Mineral Dressing	
56	04		Magnetic & Electrostatic Separators	Working Principle of electrostatic separators.	Principles of Mineral Dressing	
57		15 TH	01	Magnetic & Electrostatic Separators	Applications of electrostatic separators.	Principles of Mineral Dressing
58	02		Magnetic & Electrostatic Separators	Use in O/C & u/g Mines of electrostatic separators & Magnetic Separators	Principles of Mineral Dressing	
59	03		Magnetic & Electrostatic Separators	Unit Test	-----	
60	04		Magnetic & Electrostatic Separators	Doubt Clearing Class	-----	

Books Suggested:

- Principles of Mineral Dressing A.M.Gaudin
- Mineral Processing Technology B.A.Wills

Signature of Lecturer

Faculty Member

HOD

Principal/ Director