

# KIIT POLYTECHNIC, BHUBANESWAR

## LESSON PLAN

Session:-2021-2022

<b>Discipline : Metallurgy</b>	<b>Semester:3rd</b>	<b>Name of the Teaching Faculty:</b> Pramod kumar Sethi. Sr.Lecture. <b>Email Id :-</b> pksethifmt@kp.kiit.ac.in
Subject; Mineral Processing(Th.3)	No. Of Days/Week:-4	Starting date:-01/10/21 Ending date :-31/01/2022
<b>Week</b>	<b>Class Day</b>	<b>Theory Topics</b>
1st	1st	Various mineral resources of India.
	2nd	Various mineral resources of India
	3rd	Various mineral resources of India
	4th	Distinction between minerals and ore
2nd	1st	Explain scope and objective of ore dressing.
	2nd	Explain scope and objective of ore dressing
	3rd	Explain communiton and liberation.
	4th	Explain communiton and liberation
3rd	1st	Different physical and chemical property of ore with their application to mineral dressing.
	2nd	Discussion on possible questionnaire.
	3rd	Describe crushing operations.
	4th	Explain types of crushers; Blake and Dodge type jaw crushers.
4th	1st	Explain angle of nip of a crusher.
	2nd	Explain in details gyratory and roll crushers.
	3rd	Explain the principles of operation of gyratory and roll crushers.
	4th	Quiz Test
5th	1st	Classify different types of grinding equipments.
	2nd	Explain the ball mill operations.
	3rd	State the difference between open and close circuit grinding.
	4th	State the difference between dry and wet grinding.
6th	1st	Describe the types of standard screens wit screening techniques.
	2nd	Describe the types of standard screens wit screening techniques.
	3rd	Explain in details Rotap sieve shaker.

	4th	Explain the principles of screening.
7th	1st	Explain the effectiveness, capacity efficiency of industrial screens.
	2nd	Explain the effectiveness, capacity efficiency of industrial screens.
	3rd	Explain the different types of classifiers and their applications.
	4th	Discussion on possible questionnaire
8th	1st	Define jigging.
	2nd	Describe the factors affecting stratification in jigs.
	3rd	Explain types of jigs and their uses.
	4th	Explain the fundamental principles of heavy media separations.
9th	1st	Explain the different industrial process using heavy liquid and heavy suspensions, Du- point process, and Chance process.
	2nd	Explain the different industrial process using heavy liquid and heavy suspensions, Du- point process, and Chance process.
	3rd	Explain the different industrial process using heavy liquid and heavy suspensions, Du- point process, and Chance process.
	4th	Explain the different industrial process using heavy liquid and heavy suspensions, Du- point process, and Chance process.
10th	1st	Discussion on possible questionnaire
	2nd	Explain the different industrial process using heavy liquid and heavy suspensions, Du- point process, and Chance process.
	3rd	Explain the principles of screening.
	4th	Classify types of screens.
11th	1st	Explain the types of crushers ;Blake type and Dodge type crushers.
	2nd	Explain the different types of classifiers and their applications
	3rd	Explain the different types of classifiers and their applications
	4th	Discussion on possible questionnaire
12th	1st	Define froth and skin flotation.
	2nd	Discussion on possible questionnaire.
	3rd	Explain elementary principles of froth flotation.
	4th	Explain elementary principles of froth flotation
13th	1st	Explain the practical utility of frother, collector, modifier, activator, depressant.(without physic-chemical principle.)
	2nd	Explain the practical utility of frother, collector, modifier, activator, depressant.(without physic-chemical principle.)

	3rd	Quiz Test
	4th	Explain the practical utility of frother, collector, modifier, activator, depressant.(without physic-chemical principle.)
14th	1st	Describe the application with practical examples of froth flotation process.
	2nd	Describe the different types of flotation cells.
	3rd	Explain principles of magnetic separators with their application to mineral dressing
	4th	Explain principles of magnetic separator with their application to mineral dressing
15th	1st	Explain principles of electrostatic separators with their application to mineral dressing
	2nd	Explain principles of electrostatic separators with their application to mineral dressing
	3rd	Explain principles of electrostatic separators with their application to mineral dressing
	4th	Discussion on possible questionnaire

Recommended books -1.Principles of Mineral dressing by Gaudin A.M.

2. Fundamental of mineral dressing by C.Mohapatra.

Pramod kumar Sethi

