

DEPARTMENT OF MINING ENGINEERING
LESSON PLAN

Discipline: MINING	Semester: 5th	Name of the Teaching faculty: BINAY MOHAPATRA
Subject: UNDERGROUND METAL MINING	No of Days/Week class allotted: 4	Semester from Date: 1-7-24 To Date: 8-11-24 No of weeks: 15 Session: 2024-25
Week	Class Day	Topics
1st	1st	i) Lesson plan, Syllabus ii) Importance of this Course, Course Outcomes ii) Exams, Class Tests, Introduction to the course
	2nd	Classify modes of entries-Adits, applicability of entries
	3rd	Classify modes of entries-inclines, applicability of entries
	4th	Classify modes of entries-shafts, applicability of entries
2nd	1st	Explain formation of blocks of mineral deposit
	2nd	Explain level interval
	3rd	Explain level interval
	4th	Describe Open raising method
3rd	1st	Describe Two compartment method
	2nd	Describe Two compartment method
	3rd	Describe Jora raise lift
	4th	Describe Jora raise lift
4th	1st	Describe Long hole drilling method./Vertical Crater retreat (VCR) method
	2nd	Describe Long hole drilling method./Vertical Crater retreat (VCR) method
	3rd	Describe Alimak raise climber
	4th	Describe Alimak raise climber
5th	1st	Describe Raise borer
	2nd	INTERNAL-I
	3rd	Describe Raise borer
	4th	Describe Development of Ore passe system
6th	1st	Describe Development of Ore passe system
	2nd	comparative study between coal and metal Mining
	3rd	Classify stoping methods with application
	4th	Factors affecting methods of stoping
7th	1st	Preparatory arrangement for stoping
	2nd	Describe the Open stoping methods with layout
	3rd	Describe the Open stoping methods with layout
	4th	Describe the Open stoping methods with layout
8th	1st	Describe the Open stoping methods with layout
	2nd	Describe the Open stoping with pillar support
	3rd	Describe the Open stoping with pillar support
	4th	Describe the Shrinkage stoping methods with layout
O+h	1st	Explain Cut & fill stoping methods with layout
	2nd	Explain Cut & fill stoping methods with layout

	4th	CLASS TEST
10th	1st	Explain Square set stoping methods with layout.
	2nd	Explain Block caving methods with layout.
	3rd	Explain Sub-level caving methods with layout.
	4th	Explain Top slicing methods with layout.
11th	1st	Explain Top slicing methods with layout.
	2nd	Describe conventional methods of drifting. Find out direction gradient of drift.
	3rd	Describe drilling and blasting, support, transportation, drainage, ventilation in mechanised method of drifting
	4th	Describe lighting arrangements, organization and supervision in mechanised method of drifting.
12th	1st	Explain causes and prevention of rock burst
	2nd	Explain causes and prevention of rock burst.
	3rd	Describe use of jumbo drill with air leg
	4th	Describe use of jumbo drill with air leg
13th	1st	Describe Loading & Transportation System of L.H.D.
	2nd	Describe Loading & Transportation System of L.P.D.T. (Low Profile Dump Truck)
	3rd	Describe Loading & Transportation System of rocker shovel
	4th	Describe Loading & Transportation System of spiral chutes
14th	1st	Describe Loading & Transportation System of draw points
	2nd	Describe Loading & Transportation System of Scraper.
	3rd	INTERNAL-I
	4th	REVISION/DOUBT CLEARING CLASS
15th	1st	REVISION/DOUBT CLEARING CLASS
	2nd	REVISION/DOUBT CLEARING CLASS
	3rd	REVISION/DOUBT CLEARING CLASS
	4th	REVISION/DOUBT CLEARING CLASS

Learning Resources

Sl.No.	Title of the Book	Name of Authors
1	SME Mining Engineering Hand Book Vol I & II- 1993 edition	
2	Metal Mining	Chacharker
3	Mining Engineering Hand Book	Peele
4	EMT Vol II	D.J. Desmukh
5	Mining Ground control	Prof. B.S. Verma
6	Rock Mechanics	Jugger & Cook
7	Rock Mechanics	Jermic
8	Metalliferous Mining	Higam
9	Underground Mining Method	Bullock


Signature of faculty