GOVERNMENT POLYTECHNIC JAJPUR

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DEPARTMENT OF MINING ENGINEERING

LESSON PLAN

Discipline: MINING	Semester: 5th	Name of the Teaching faculty: Prabhudutta Mishra		
Subject: UNDERGROUND METAL MINING	No of Days/Week class alloted: 4	Semester from Date: 15/9/22 To Date: 22/12/22 No of weeks: 15		

Week	Class Day	Topics
1st	1st	Classify modes of entries – Adits, applicability of entries.
	2nd	Classify modes of entries – inclines, applicability of entries.
	3rd	Classify modes of entries – shafts ,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	CLASS TEST-I
	4th	Describe Alimak raise climber
5th	1st	Describe Alimak raise climber
	2nd	Describe Raise borer.
	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 stopping.
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	INTERNAL-I
	3rd	Describe the Open stoping with pillar support.
	4th	Describe the Open stoping with pillar support.
9th	1st	Describe the Shrinkage stoping methods with layout.
	2nd	Explain Cut & fill stoping methods with layout.
	3rd	Explain Cut & fill stoping methods with layout.

	4th	Explain Square set stoping methods with layout.
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	Describe conventional methods of drifting. Find out direction gradient of drift.
	2nd	Describe drilling and blasting, support, transportation, drainage, ventilation in mechanised method of drifting.
	3rd	Describe lighting arrangements, organization and supervision in mechanised method of drifting.
	4th	Explain causes and prevention of rock burst.
12th	1st	CLASS TEST-II
	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	DescribeLoading & Transportation System of L.H.D.
	2nd	DescribeLoading & 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 ofScraper.
	3rd	INTERNAL-II
	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 Resourses

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