

**SYNERGY SCHOOL OF ENGINEERING, DHENKANAL****LESSON PLAN****SESSION(2026-27)****DEPARTMENT OF MINING ENGINEERING****LESSON PLAN(WINTER-2026)**

Discipline: MINING	Semester: 3rd	Name of the Teaching faculty: BISWAMBAR MAJHI(Lecturer in Mining)
Subject: Surface Mining Technology	No of Days/Week Class allotted: 3	from Date: 01/07/26 To Date: 05/11/26 No of weeks: 15
Week	Class Day	Topics
1st	1st	Introduction to the Surface Mining.
	2nd	State factors affecting choice of Open casting Mining method.
	3rd	Define stripping ratio.
2nd	1st	Find out cut off stripping ratio.
	2nd	Determine quarriable limit.
	3rd	State favorable conditions for mechanized Opencast Mines.
3rd	1st	Define Box cut
	2nd	Determine the location of Box cut
	3rd	Determine bench parameters-height,width &slope.
4th	1st	Define slope stability.
	2nd	Factors affecting slope stability.
	3rd	Types of slope failure.Causes and prevention of slope failure.
5th	1st	Properties &characteristics of explosives.
	2nd	INTERNAL-I
	3rd	Classify explosives,state composition and uses of explosives.
6th	1st	Define permitted explosive.Explain sheathed,equivalent sheathed
	2nd	Ultra safe explosive.State properties of permitted explosives.
	3rd	IState composition &constructional features of safety fuse,detonating fuse
7th	1st	State composition &constructional features of nonel and raydet.
	2nd	Describe different types of detonators.
	3rd	Uses &advantages of delay detonators.
8th	1st	State different types of exploder.Its construction and safety features
	2nd	Circuit tester.Describe stemming rod,crack detector knife,crimper.
	3rd	Circuit tester.Describe stemming rod,crack detector knife,crimper.
9th	1st	Explain different principles and methods of exploratory drilling in surface mining
	2nd	State different types of drill used in Opencast mining
	3rd	Describe simple constructional features of churn drill

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10th	1st	Describe simple constructional features of drills master.
	2nd	Describe simple constructional features of wagon drill.
	3rd	Describe simple constructional features of jack hammer.
11th	1st	State D.T.H.
	2nd	Describe different types of drill bits in drilling
	3rd	Describe preparation of charge.
12th	1st	Direct and inverse initiation.Stemming materials.
	2nd	State and describe plaster shooting and pop shooting, toe blasting.
	3rd	State and describe pre-splitting & cushion blasting.
13th	1st	State and describe muffle blasting & coyote hole blasting.
	2nd	State and describe chambered hole blasting & directional blasting.
	3rd	Describe layout and arrangement of different types of magazines
14th	1st	Describe layout and arrangement of different types of magazines
	2nd	INTERNAL-II
	3rd	REVISION/DOUBT CLEARING CLASS
15th	1st	REVISION/DOUBT CLEARING CLASS
	2nd	REVISION/DOUBT CLEARING CLASS
	3rd	REVISION/DOUBT CLEARING CLASS

Learning Resources:

Sl.No.	Title of the Book	Name of Authors
1	Surface Mining Technology	S.K.DAS
2	Blasting Manuals	Sandhu & Pradhan
3	Blasting Practices in Mines	S.K.DAS
4	EMT VOL I	D.J.DESHMUKH
5	Surface Mining	G.B.Mishra

P. Mishra
HOD 02/06/26

Mining Engg. Dept.
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Bisambor Maali
Signature of Faculty

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