

## DEPARTMENT OF MINING ENGINEERING

## LESSON PLAN

DISCIPLINE: MINING ENGINEERING			SEMESTER: 3RD	NAME OF THE TEACHING FACULTY: RAJIV LOCHAN BAL	
SUBJECT: SURFACE MINING TECHNOLOGY SUBJECT CODE: TH1			NO OF DAYS/WEEK CLASS ALLOTTED: 4	SEMESTER FROM DATE: 01/08/2023 TO 30/11/2023 NO OF WEEKS: 17 NO. OF PERIOD AVAILABLE: 62	
Month	Week	No of periods available	Class Day	Theory topics to be covered	
AUGUST	1st	4P	1ST	State factors affecting choice of Open casting Mining method.	
			2ND	Define stripping ratio.	
			3RD	Determine overburden/ore ratio.	
			4TH	Find out cut off stripping ratio.	
	2nd	4P	1ST	Determine quarriable limit.	
			2ND	State favorable conditions for mechanized Opencast Mines.	
			3RD	State limitations of large open pits.	
			4TH	Define Box cut,	
	3th	3P	1ST	Determine the location of Box cut.	
			2ND	Determine bench parameters- height, width & slope.	
			3RD	Determine length of bench for overburden and ore	
	4th	4P	1ST	Define slope stability.	
			2ND	Factors affecting slope stability.	
			3RD	Types of slope stability.	
			4TH	Causes and prevention of slope stability.	
SEPTEMBER	5th	4P	1ST	Define explosive, state constituents of explosives.	
			2ND	Properties & characteristics of explosives.	
			3RD	Explain PMS and SMS.	
			4TH	Explain PMS and SMS.	
	6th	4P	1ST	Define permitted explosive, classify permitted explosive.	
			2ND	Revision & Doubt clearing Classes.	
			3RD	Explain sheathed, equivalent sheathed	
			4TH	ultra safe explosive.	
	7th	4P	1ST	State properties of permitted explosives.	
			2ND	State composition & constructional features of safety fuse,	
			3RD	detonating fuse, detonating relay, igniter cord, nonel and raydet.	
			4TH	CLASS TEST 1	
	8th	3P	1ST	Describe different detonator uses & advantages of delay detonators.	
			2ND	State different types of exploder.	

	9th	4P	3RD	construction and safety features, circuit tester.
			1ST	Describe stemming rod, crack detector knife, crimper.
			2ND	Explain different principles and methods of exploratory drilling in surface mining.
			3RD	principles and methods of exploratory drilling in surface mining.
OCTOBER	10th	3P	4TH	State different types of drill used in Opencast mining.
			1ST	Describe simple constructional features of churn drill.
			2ND	Drills master
			3RD	wagon drill
	11th	4P	1ST	jack hammer.
			2ND	State D.T.H..
			3RD	Describe different types of drill bits in drilling
			4TH	Describe preparation of charge.
	12th	4P	1ST	State procedure of firing shots.
			2ND	direct and inverse initiation.stemming materials.
			3RD	water ampoules, cushion firing. Define blasting efficiency.
			4TH	State and describe plaster shooting and pop shooting, toe blasting.
	13th	4P	1ST	State and describe pre-splitting.
			2ND	coyote hole blasting
			3RD	Electronics Blasting System (EBS) .
			4TH	cushion blasting
NOVEMBER	14th	4P	1ST	muffle blasting
			2ND	chambered hole blasting
			3RD	directional blasting
			4TH	CLASS TEST 2
	15th	4P	1ST	Describe layout and arrangement of different types of magazines
			2ND	Large magazine layout
			3RD	Portable magazine Layout
			4TH	State their safety features.
	16th	4p	1ST	Revision & Previous year question & answer discussion
			2ND	Revision & Previous year question & answer discussion
			3RD	VST
			4TH	VST
	17th	1P	1ST	Doubt Clearing.

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