

GOVT. POLYTECHNIC DEOGARH
DEPT. OF MINING ENGG.
LESSON PLAN

Discipline : MINING	Semester: 3RD	Name of the Teaching faculty: Rahul Kumar Das
Subject: Surface Mining Technology	No of Days/Week class allotted: 4	Semester from Date- 01.08.2023 To Date-30.11.2023 No of Weeeks-15
Week	Class Days	Topic
1ST	1 st	State factors affecting choice of Open casting Mining method.
	2 nd	Define stripping ratio.
	3 rd	Determine overburden/ore ratio.
	4 th	Find out cut off stripping ratio.
2ND	1 st	Determine quarriable limit.
	2 nd	State favorable conditions for mechanized Opencast Mines
	3 rd	State limitations of large open pits.
	4 th	Define Box cut and determine the location of Box cut.
3RD	1 st	Determine the location of Box cut.
	2 nd	Determine bench parameters- height, width & slope.
	3 rd	Determine length of bench for overburden and ore.
	4 th	Define slope stability.
4TH	1 st	Factors affecting slope stability.
	2 nd	Types of slope stability.
	3 rd	CLASS TEST-1
	4 th	Causes and prevention of slope stability.
5TH	1 st	Define explosive, state constituents of explosives , properties & characteristics of explosives
	2 nd	Classify explosives, state composition and uses of explosives
	3 rd	Explain PMS and SMS.
	4 th	Define permitted explosive and classify permitted explosive
6TH	1 st	Explain sheathed, equivalent sheathed.
	2 nd	ultra safe explosive.
	3 rd	State properties of permitted explosives.
	4 th	State composition & constructional features of safety fuse.
7TH	1 st	Detonating fuse, detonating relay, igniter cord, nonel and raydet..
	2 nd	Describe different types of detonators and uses.
	3 rd	State advantages of delay detonators.
	4 th	State different types of exploder.
8TH	1 st	Construction and safety features, circuit tester.
	2 nd	INTERNAL-1
	3 rd	Describe stemming rod, crack detector knife, crimper.
	4 th	Explain different principles and methods of exploratory drilling in surface mining.
9TH	1 st	Principles and methods of exploratory drilling in surface mining.
	2 nd	State different types of drill used in Opencast mining.
	3 rd	Describe simple constructional features of churn drill
	4 th	Drills master, wagon drill and jack hammer.
10TH	1 st	Wagon drill.
	2 nd	Jack hammer.
	3 rd	State D.T.H
	4 TH	Describe different types of drill bits in drilling.

11TH	Group 1(3P)	Describe preparation of charge.
	Group 2(3P)	State procedure of firing shots.
	Group 1(3P)	Direct and inverse initiation.
	Group 2(3P)	Stemming materials.
12TH	Group 1(3P)	CLASS TEST-2
	Group 2(3P)	Water ampoules, cushion firing.
	Group 1(3P)	Define blasting efficiency.
	Group 2(3P)	State and describe plaster shooting and pop shooting, toe blasting.
13TH	Group 1(3P)	State and describe pre-splitting.
	Group 2(3P)	Cushion blasting
	Group 1(3P)	Muffle blasting, coyote hole blasting.
	Group 2(3P)	chambered hole blasting, directional blasting.
14TH	Group 1(3P)	Electronics Blasting System (EBS) .
	Group 2(3P)	Describe layout and arrangement of different types of magazines.
	Group 1(3P)	INTERNAL-2
	Group 2(3P)	State their safety features.
15TH	Group 1(3P)	REVISION/DOUBT CLEARING CLASS.
	Group 2(3P)	REVISION/DOUBT CLEARING CLASS.
	Group 1(3P)	REVISION/DOUBT CLEARING CLASS.
	Group 2(3P)	REVISION/DOUBT CLEARING CLASS.

RK Das
1/8/23

Signature of Faculty