

**DEPARTMENT OF MINING ENGINEERING**

**LESSON PLAN**

<b>Discipline:</b> <b>MINING</b>	<b>Semester:</b> <b>4TH</b>	<b>Name of the Teaching faculty: Rajiv Lochan Bal</b>	
<b>Subject:</b> <b>UNDERGROUND COAL MINING</b>	<b>No of Days/Week class alloted: 4</b>	<b>Semester from Date: 10/3/2022</b> <b>No of weeks: 16</b>	<b>To Date: 10/6/2022</b>
<b>Week</b>	<b>Class Day</b>	<b>Topics</b>	
1st	1st	Define mine and different methods of mining.	
	2nd	Classify Underground Coal Mining Methods.	
	3rd	Describe the various application of Bord & Pillar method.	
	4th	Describe various layouts of Bord & Pillar method.	
2nd	1st	Describe depillaring method with stowing.	
	2nd	Describe depillaring method with caving.	
	3rd	State precautions against fire during and after depillaring.	
	4th	State precautions against water during and after depillaring.	
3rd	1st	State and describe various machineries used in working face.	
	2nd	State and describe various machineries used in working face.	
	3rd	State and describe various machineries used in working face.	
	4th	Define contigeous seam. Describe working of contiguous seams.	
4th	1st	Describe working of seams above goaved out area.	
	2nd	Describe working of seams below goaved out area.	
	3rd	State advantages and disadvantages of Bord & Pillar method.	
	4th	Describe Longwall advancing methods.	
5th	1st	Describe Longwall retreating methods.	
	2nd	Define single unit and double unit face.	
	3rd	Describe cyclic L/W layouts.	
	4th	Describe non-cyclic L/W layouts.	
6th	1st	Describe mechanized longwall working with armoured flexible conveyor, shield support and shearer loader	
	2nd	Describe mechanized longwall working with armoured flexible conveyor, shield support and shearer loader	
	3rd	Define Thick seams.	
	4th	CLASS TEST 1, Previous year questions, quiz test	
7th	1st	Classify Thick seam Mining.	
	2nd	Describe layouts of horizontal slicing.	
	3rd	Describe layouts of incline slicing.	
	4th	Describe layouts blasting gallery.	
8th	1st	Describe layouts sublevel caving.	

	2nd	State conditions of Horizon Mining.
	3rd	State advantages, disadvantages of Horizon Mining.
	4th	State limitations of Horizon Mining.
9th	1st	Describe the layout of Horizon Mining.
	2nd	Describe hydraulic stowing.
	3rd	Describe Pneumatic stowing.
	4th	State properties of various types of roof & roof behavior.
10th	1st	Describe Pressure arch theory in B&P.
	2nd	Describe Pressure arch theory in Longwall working.
	3rd	Describe testing of roof.
	4th	Classify support system in Mines construction.
11th	1st	Classify support system in Mines construction.
	2nd	Classify support system in Mines construction.
	3rd	Describe principle of operation application of support system
	4th	Describe load bearing capacity assessment of support system.
12th	1st	Define angle of draw, State factors of subsidence.
	2nd	Define critical area of extraction.
	3rd	Describe the factors affecting subsidence
	4th	CLASS TEST 2, Previous year questions, quiz
13th	1st	State & describe precautionary measures against damage due to subsidence.
	2nd	State & describe precautionary measures against damage due to subsidence
	3rd	Define shaft pillar, Describe vertical shaft.
	4th	Describe inclined shaft.
14th	1st	Determine shape and size of shaft.
	2nd	Determine location of shaft.
	3rd	Describe sinking through normal ground, State shaft plumbing.
	4th	Describe sinking through difficult ground.
15th	1st	Describe cementation method.
	2nd	Describe freezing Method.
	3rd	Explain mechanized shaft sinking. sinking upward, widening and deepening of shafts.
	4th	Explain sinking upward.
16th	1st	Shaft widening.
	2nd	Shaft deepening.
	3rd	previous year question discussion
	4th	Previous year questions, quiz

Signature of Faculty

HOD  
Mining  
MINING ENGINEERING  
OSME, KEONJHAR

PRINCIPAL  
OSME, KEONJHAR