

GOVERNMENT POLYTECHNIC JAJPUR

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DEPARTMENT OF MINING ENGINEERING

LESSON PLAN

Discipline: MINING	Semester: 4T	Name of the Teaching faculty: SOUMYA RANJAN SAMAL
Subject: UNDERGROUND COAL MINING	No of Days/Week class allotted: 4	Semester from Date: 10/3/22 To Date: 10/06/22 No of weeks: 16 <i>Extended upto 30/6/22</i>
Week	Class Day	Topics
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	CLASS TEST -I
	4th	State advantages and disadvantages of Bord & Pillar method.
5th	1st	Describe Longwall advancing methods.
	2nd	Describe Longwall retreating methods.
	3rd	Define single unit and double unit face.
	4th	Describe cyclic L/W layouts.
6th	1st	Describe non-cyclic L/W layouts.
	2nd	Describe mechanized longwall working with armoured flexible conveyor, shield support and shearer loader
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	3rd	Describe mechanized longwall working with armoured flexible conveyor,
4th	Define Thick seams.	
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	INTERNAL-1
	3rd	State conditions of Horizon Mining.
	4th	State advantages, disadvantages of Horizon Mining.

9th	1st	State limitations of Horizon Mining.
	2nd	Describe the layout of Horizon Mining.
	3rd	Describe hydraulic stowing.
	4th	Describe Pneumatic stowing.
10th	1st	State properties of various types of roof & roof behavior.
	2nd	Describe Pressure arch theory in B&P.
	3rd	Describe Pressure arch theory in Longwall working.
	4th	Describe testing of roof.
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	CLASS TEST-II
	2nd	Define angle of draw, State factors of subsidence.
	3rd	Define critical area of extraction.
	4th	Describe the factors affecting subsidence
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	INTERNAL -II
	4th	Describe sinking through normal ground, State shaft plumbing.
15th	1st	Describe sinking through difficult ground.
	2nd	Describe cementation method.
	3rd	Describe freezing Method.
	4th	Explain mechanized shaft sinking. sinking upward, widening and deepening of shafts.
16th	1st	Explain sinking upward.
	2nd	Shaft widening.
	3rd	Shaft deepening.
	4th	Previous year questions, quiz

Sl. No	Title of the Book	Name of Authors
1	Coal Mining	S Mathur
2	EMT VOL I,III	O J Deshmukh
3	Modern Coal Mining	S K Das
4	Advanced Coal Mining	RT Deshmukh & B. Borovjev
5	UMS	
6	Coal Mine Ground Control	S S Peng
7	SME Mining Engg. Handbook	
8	Strata Control	Jermic

Srimya Rajan Samal
Signature of Faculty