JHARKHAND Rai University
UGC RECOGNISED UNIVERSITY
ACCREDITED BY NAAC

Lesson Plan & Tracking

Programe : B.TECH	**Session : 2022-2023**	**Year : 2022**	**Sem: V**
Course: UNDERGROUND COAL MINING			
Name of the Faculty: SURAJ DEV SINGH	**Commencement Date:29th August 202**	**Date of Closure:**	

Lecture No.	Week	Unit	Topics to be Covered	Blended Mode			Date	Duration	Tracking of Lectures	Related Course Outcome	Signature of Faculty	Signature of HoD	Remark (if any)
				ICT Tool/Platform/ LMS	Resources	Activity							
1	1	UNIT-I	Introduction: History of coal mining;										
2		UNIT-I	coal resource and their geographical distributions;										
3		UNIT-I	Coalification- definition & process										
4	2	UNIT-I	Factors affecting coalification process,										
5		UNIT-I	modes of accumulation of coal &										
6		UNIT-I	evidences in support of in-situ and drift theories;										
7	3	UNIT-I	Geological time scale vis -à-vis formation of coal,										
8		UNIT-I	Occurrence of coal										
9		UNIT-I	Distribution of coal in various stratigraphic horizons										

10		**UNIT-I**	Coal seam structure										
11	**4**	**UNIT-I**	abnormalities of coal seam										
12		**UNIT-I**	geological and other features of Indian coalfields.										
13		**UNIT-I**	Bord and Pillar Mining: Choice of methods of mining coal seams;										
14	**5**	**UNIT-I**	Factors affecting choice of mining methods,										
15		**UNIT-I**	General principles of Bord and Pillar (B&P) development										
16		**UNIT-I**	Different schemes of development and associated merits/demerits										
17	**6**	**UNIT-I**	Design of B&P workings, statutory provisions related to B&P workings ,										
18		**UNIT-I**	Semi- mechanized and mechanized schemes of B&P development;										
19		**UNIT-I**	Mechanized face loading.										
20	**7**	**UNIT-II**	Pillar Extraction**:** Preparatory arrangement for depillaring operation,										
21		**UNIT-II**	statutory provisions on depillaring; principles of designing pillar extraction,										
22		**UNIT-II**	Factors affecting choice of pillar extraction;partial and full extraction,										

23	**8**	**UNIT-II**	depillaring with caving and stowing; mechanization in depillaring operation										
24		**UNIT-II**	Local and main fall, indications of roof weighting, measures to bring down roof at regular interval;										
25	**9**	**UNIT-II**	air blast and measures to minimize its effects;										
26		**UNIT-II**	precautions during depillaring operation against fire and inundation,										
27		**UNIT-II**	multi-section and contiguous workings, Extraction of pillars in seams prone to bumps.										
28	**10**	**UNIT-III**	Long wall Mining**:** Factors affecting long wall mining, Long wall face layouts advancing and retreating faces,										
29		**UNIT-III**	single versus double unit long wall faces, orientation of longwall faces;										
30		**UNIT-III**	single versus multiple heading gate roads, factors affecting length and width of long wall panel.										
31	**11**	**UNIT-III**	Extraction of Long wall panel, working with shearer and plough										
32		**UNIT-III**	support system of long wall face and gate roads, monolithic packing in long wall advancing gate roads,case studies of long wall faces in India.										
33		**UNIT-IV**	Roof Supports: Timber props and cogs; Friction/hydraulic props , chocks; other steel supports;										

34	**12**	**UNIT-IV**	types of roof bolts; function, applicability and advantage of roof bolting and cable bolting;										
35		**UNIT-IV**	powered supports; systematic support rules;supporting scheme of development gallery, B &P and L/W faces,depillaring district;withdrawal of support										
36		**UNIT-IV**	,Conditions requiring stowing in mines;types of stowing; suitable materials for hydraulics to wing;										