JHARKHAND Rai University
UGC RECOGNISED UNIVERSITY
ACCREDITED BY NAAC

Lesson Plan & Tracking

Programe : DIPLOMA	**Session : 2020-23**	**Year : 3rd**	**Sem: V**
Course: MINE ENVIRONMENTAL ENGINEERING			
Name of the Faculty: V F	**Commencement Date: 28/08/2022**	**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	Remarks (if any)
				ICT Tool/Platform/ LMS	Resources	Activity							
1	1	Unit 1	Mine Fires: Surface fire and underground fires, their causes, detection and prevention. Classification of fires										
2		Unit 1	Portable fire extinguishers their applicability, places of portable fire extinguishers in mines, maintenance of fire extinguishers.										
3		Unit 1	Spontaneous heating: Mechanism of spontaneous Heating, factors governing spontaneous heating,										
4	2	Unit 1	methods for study of spontaneous combustion of coal: crossing point method										
5		Unit 1	Stages of spontaneous heating, Detection of spontaneous heating: Physical or sensory indicators										
6		Unit 1	Precautions for prevention of spontaneous heating. Model standing orders in event of fire.										
7		Unit 1	Dealing with spontaneous heating & fires: Various methods, Sealing off: selection of site for fire stoppings,										

8	**3**	**Unit 1**	Construction of fire stopping, fittings to stopping, inspection and maintenance of fire stoppings.										
9		**Unit 2**	Sampling from sealed off area: Sampling line, Methods of sampling from behind the fire stopping, frequency of sampling										
10	**4**	**Unit 2**	Sampling accessible places: water, air displacement method, evacuated,sample,holder,type.										
11		**Unit 2**	Composition and behavior of gases in sealed off area, interpretation regarding condition of heating: Graham's ratio										
12		**Unit 2**	interpretation regarding explosibility: Cowards Diagram. Elementary knowledge of gas chromatography										
13	**5**	**Unit 2**	Re opening of sealed off area: Factors governing decision of reopening, methods of reopening,										
14		**Unit 2**	Selection of methods of reopening, precautions to be taken while reopening.										
15		**Unit 2**	Fire damp explosion**:** Introduction, Composition of firedamp Modes of emission of Firedamp,										
16	**6**	**Unit 2**	Degree of gassiness, methane layering,Mechanism of fire damp explosion,										
17		**Unit 2**	Flammability of firedamp,lower and upper limit of explosibility of firedamp, factors governing limits of flammability										
18		**Unit 2**	lag on ignition,Explosive limits of other flammable gases,										
19		**Unit 2**	Causes of fire damp explosion and its prevention. Characteristic of firedamp explosion.										

20	**7**	**Unit 3**	Coal Dust Explosion**:** Mechanism of Coal Dust explosion, Flammability limits of coal dust,										
21		**Unit 3**	factors governing explosibility of coal dust, Characteristics of coal dust explosion.										
22	**8**	**Unit 3**	Causes of coal dust explosion, Prevention of coal dust explosion.										
23		**Unit 3**	Generalized stone dusting, Quantity of stone dust, Types and properties of stone dust, stone dusting plan.										
24		**Unit 3**	Stone dust barriers, types of stone dust barriers, specifications and construction, location of primary and secondary types of barriers.										
25	**9**	**Unit 3**	Situations under which barrier may fail, maintenance and care of stone dust barriers. Water barrier, Triggered barrier.										
26		**Unit 4**	Inundation: Surface and underground causes of Inundation and its prevention, water dams, bulkhead doors										
27		**Unit 4**	Procedure of and precaution while approaching old water logged areas, pattern of bore holes, Dewatering, burn side safety boring apparatus										
28	**10**	**Unit 4**	Standard of lighting in underground & opencast mines, cap lamps, its construction, maintenance and care, cap lamp room.										
29		**Unit 4**	M*ine* rescue: Introduction, classification of mine rescues apparatus, modern self contained breathing apparatus BG 174, its construction, application and scope.										

30		**Unit 4**	Common tests of self contained compressed oxygen breathing apparatus, Chemical oxygen self-rescuers, gas mask, filter										
31	**11**	**Unit 4**	self-rescuers: their construction, application and limitations.										
32		**Unit 4**	Fresh air hose type breathing apparatus										
33		**Unit 4**	Fresh air base: location, personnel & equipments required.										
34	**12**	**Unit 4**	Layout of FAB, Resuscitation, Modern reviving apparatus.										
35		**Unit 1 & 2**	Discussion of Doubts of Unit 1 & Unit 2										
36		**Unit 3 & 4**	Discussion of Dobts of Unit 3 & Unit 4										