



ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Dicipline:	Mining Engg.	Semester:	4th	Name of the Teaching Faculty	Subhrajit Khuntia
Subject:	Mine ventilation	No of Days/Week Class Allotted:		Semester From date:	10/03/2022 To date 13/06/2022
				No. of Weeks:	

WEEK	Class Day	Theory Topics
From 14/03/22 TO 19/03/22	1st	Natural ventilation & Factors affecting natural ventilation.
	2nd	Different types of thermometer, Barometer
	3rd	Wet thermometer test (Dry/wet)
	4th	Water gauge (Static pressure, Dynamic pressure)
	5th	
From 20/03/22 TO 26/03/22	1st	Ventilation pressure by using pitot static tube.
	2nd	Effects of heat & humidity.
	3rd	Natural ventilation motive column, geothermic gradient
	4th	Law of mine air friction and solve problems on above.
	5th	
From 28/03/22 TO 02/04/22	1st	Statutory provision as per CMR 2017, MMR 1961.
	2nd	Air crossing & distribution.
	3rd	ventilation stopping, air crossing, brattice partition, ventilation doors.
	4th	Different types of ventilation.
	5th	

WEEK	Class Day	Theory Topics
From 02/04/22 to 09/04/22	1st	Accessional & dedensional ventilation
	2nd	Isometric & Anisometric Ventilation.
	3rd	Boundary Ventilation.
	4th	Vertical & Combined Ventilation.
	5th	
From 11/04/22 to 16/04/22	1st	Splitting of air current & solve numerical problems on splitting
	2nd	Description of level boxes at top.
	3rd	Mechanical ventilation (Introduction)
	4th	Construction & principle of operation of centrifugal blow fan.
	5th	
From 18/04/22 to 23/04/22	1st	State fan laws & calculate fan efficiency and capacity
	2nd	Explanation of construction of mine fan with reverse arrangement
	3rd	Describe fan draft, fan drive, reverse & A/B users.
	4th	fan characteristics & mine characteristic
	5th	

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WEEK	Theory Topics					
	1st	Study of Fan characteristics & mine characteristics.				
	2nd	Study of methods of output of mine fans.				
	3rd	Introduction to Booster fan & H ₂ effects.				
	4th	do				
	5th	do				
	1st	Description of installation, location of the booster fan.				
	2nd	mechanism of booster fan, principles of the booster fan.				
	3rd	Description of purpose of Booster fan.				
	4th	do				
	5th	do				
	1st	Solving problems with derivation of formula.				
	2nd	Solving problems relating to Booster fan.				
	3rd	Solving problems relating to Booster fan.				
	4th	Complete revision of the Booster fan.				
	5th					

From 25/04/22 to 30/04/22

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WEEK	Class Day	Theory Topics
	1st	Auxiliary Ventilation (Introduction)
	2nd	Forcing or Blowing System
	3rd	Exhaust, & overlap systems, Reversible system.
	4th	Equipment for Auxiliary ventilation.
	5th	
	1st	Equipment for Auxiliary ventilation.
	2nd	Advantages & disadvantages of auxiliary ventilation.
	3rd	do
	4th	Ventilation Survey & type of surveying.
	5th	
	1st	Pressure Surveying, measurement of ventilation pressure.
	2nd	Sensitive manometer & pressure surveying using change and tube method.
	3rd	method of measurement using barometer of cross-sectional Area.
	4th	method of velocity measurement & by using anemometer.
	5th	



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WEEK	Class Day	Theory Topics	
	1st	velocity measurement by using Vootmeter.	
	2nd		Pitot-static tube.
	3rd	Smoke & cloud method.	
	4th	percentage of oxygen, methane, CO, SO ₂ & H ₂ S leakage.	
	5th		
	1st	Leakage of air in mines.	
	2nd	Leakage through surface air lock.	
	3rd	Leakage at the put bottom separation other doors.	
	4th	Leakage through stopping & at air-crossing.	
	5th		
	1st	Leakage through packing, leakage through breaks in struts & bores.	
	2nd	<u>Prevention</u> measures of leakage of	
	3rd	do	
	4th		
	5th		