

Discipline: MINING ENGG	Semester: 4 TH	Name of the Teaching Faculty: D.S.PRADHAN
Subject: Mine Ventilation	No. of Days/per week class allotted: 4	Semester From Date: _____ To Date: _____ No. of Weeks : 15
Week	Class Day	Theory/Practical Topics
1 st	01	Definition of natural ventilation and factors affecting natural ventilation.
	02	Describe the different types of Thermometers.
	03	Describe the different types of Barometers.
	04	Describe kata thermometer.
2 nd	01	Describe water gauge, calculate ventilation pressure by using piton static tube.
	02	Explain effects of heat & humidity.
	03	Explain natural ventilation motive column, geothermic gradient.
	04	Enumerate laws of mine air friction and solve problems on above. Statutory provision as per CMR 2017, MMR 1961.
3 rd	01	Describe ventilation stopping, air crossing, ventilation door, brattice partition.
	02	Describe ventilation stopping, air crossing, ventilation door, brattice partition.
	03	Describe different types of ventilation.
	04	Accessional & declensional ventilation. Homotropical & Antitropical ventilation.
4 th	01	Boundary ventilation.
	02	Central & combined ventilation.
	03	Explain splitting of air current & solve numerical problems on splitting.
	04	Explain splitting of air current & solve numerical problems on splitting.
5 th	01	Explain splitting of air current & solve numerical problems on splitting.
	02	Describe air locks at pit top.
	03	Explain construction & principle of operation of centrifugal flow fans.
	04	Explain construction & principle of operation of centrifugal flow fans.
6 th	01	State fan laws & calculate fan efficiency and capacity.
	02	State fan laws & calculate fan efficiency and capacity.
	03	Explain installation of mine fan with reversal arrangement
	04	Describe fan drift, fan drive, evasee and diffusers.
7 th	01	Describe fan drift, fan drive, evasee and diffusers.
	02	Explain fan characteristics and mine characteristics.
	03	Explain fan characteristics and mine characteristics. Describe methods of output of mine fans.
	04	Booster fan and its Effects
8 th	01	Describe installation, location and purpose of booster fan.

	02	Describe installation, location and purpose of booster fan.
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	04	Describe installation, location and purpose of booster fan.
9 th	01	Solve problems relating to booster fan.
	02	Solve problems relating to booster fan.
	03	Solve problems relating to booster fan.
	04	Solve problems relating to booster fan.
10 th	01	Solve problems relating to booster fan.
	02	Describe systems of auxiliary ventilation.
	03	Describe systems of auxiliary ventilation.
	04	Describe systems of auxiliary ventilation.
11 th	01	Describe systems of auxiliary ventilation.
	02	Describe systems of auxiliary ventilation.
	03	Describe systems of auxiliary ventilation.
	04	Describe advantages & disadvantages of auxiliary ventilation.
12 th	01	Describe methods of pressure survey using barometer, gauge and pitot tube with manometer.
	02	Describe methods of pressure survey using barometer, gauge and pitot tube with manometer.
	03	Describe methods of pressure survey using barometer, gauge and pitot tube with manometer.
	04	Describe the method of measurement of cross-sectional area.
13 th	01	Describe the method of velocity measurements by using anemometer, voltmeter, and pitot- static tube and smoke & cloud method.
	02	Describe the method of velocity measurements by using anemometer, voltmeter, and pitot- static tube and smoke & cloud method.
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14 th	01	Determine percentage of oxygen, methane, carbon monoxide SO ₂ & H ₂ S.
	02	Determine percentage of oxygen, methane, carbon monoxide SO ₂ & H ₂ S.
	03	Describe causes and preventive measures of leakage of air in mines.
	04	Describe causes and preventive measures of leakage of air in mines.
15 th	01	Describe causes and preventive measures of leakage of air in mines.
	02	Describe causes and preventive measures of leakage of air in mines.
	03	Describe causes and preventive measures of leakage of air in mines.
	04	Describe causes and preventive measures of leakage of air in mines.