SYNERGY POLYTECHNIC, BHUBANESWAR
A/P- Bhimpur, Phulnakhara Dist-Khorda Odisha-752101
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DISCIPLINE - MINING ENGINEERING	SEM- 4th	NAME OF THE TEACHING FACULTY- Amaresh Gonel
SUBJECT- Mine Ventilation	NO. OF DAYS/WEEK CLASS ALLOTED 4	SEMESTER FROM DATE 16.01.24 TO 25.04.24 NO. OF WEEKS 15
WEEK	**CLASS DAY**	**THEORY/PRACTICAL TOPICS**
I	1st	Introduction about Natural Ventilation
	2nd	Definition of natural ventilation and factors affecting natural ventilation.
	3rd	Describe the different types of Thermometer.
	4th	Describe the different types of Barometer & Describe kata thermometer .
2nd	1st	Describe water gauge & Calculate ventilation pressure by using pitot static tube .
	2nd	Explain effects of heat & humidity .
	3rd	Explain natural ventilation motive column, geothermic gradient.
	4th	Enumerate laws of mine air friction and solve problems on above.
3rd	1st	Statutory provision as per CMR 2017,MMR 1961.
	2ND	Introduction Air Crossing and distribution
	3rd	Describe ventilation stopping, air crossing, ventilation door, brattice partition.
	4th	Describe different types of ventilation .
4th	1st	Accessional & declensional ventilation.
	2nd	Homotropal & Antitropal ventilation.
	3rd	Explain Boundary ventilation.
	4th	Central & combined ventilation.
5th	1st	Explain splitting of air current & solve numerical problems on splitting.
	2nd	Describe air locks at pit top.
	3rd	Describe air locks at pit top.
	4th	Introduction about Mechanical Ventilation
6th	1st	Explain construction of operation of centrifugal flow fans
	2nd	Explain principle of operation of centrifugal flow fans
	3rd	State fan laws .

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	4th	Calculate fan efficiency and capacity.
7th	1st	Explain installation of mine fan with reversal arrangement.
	2nd	Describe fan drift, fan drive, evasee and diffusers.
	3rd	Explain fan characteristics and mine characteristics.
	4th	Describe methods of output of mine fans.
8th	1st	Introduction about Booster fan and its Effects
	2nd	Introduction about Booster fan and its Effects
	3rd	Describe installation, location and purpose of booster fan
	4th	Describe installation of booster fan
9th	1st	Describe purpose of booster fan.
	2nd	Describe location of booster fan.
	3rd	Solve problems relating to booster fan
	4th	Solve problems relating to booster fan
10th	1st	Solve problems relating to booster fan
	2nd	About Auxiliary Ventilation
	3rd	About Auxiliary Ventilation
	4th	Describe systems of auxiliary ventilation.
11th	1st	Describe systems of auxiliary ventilation.
	2nd	Describe advantages of auxiliary ventilation
	3rd	Describe disadvantages of auxiliary ventilation.
	4th	About Ventilation Survey
12Th	1st	About Ventilation Survey
	2nd	Describe methods of pressure survey using barometer.
	3rd	Describe methods of pressure survey using gauge .
	4th	Describe methods of pressure survey using pitot tube with manometer.
13th	1st	Describe the method of measurement of cross-sectional area.
	2nd	Describe the method of measurement of cross-sectional area.
	3rd	Describe the method of velocity measurements by using anemometer.

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	4th	Describe the method of velocity measurements by voltmeter.
14th	1st	Describe the method of velocity measurements by using pitot- static tube method.
	2nd	Describe the method of velocity measurements by using smoke & cloud method.
	3RD	Determine percentage of oxygen, methane.
	4th	Determine percentage of carbon monoxide SO2 & H2S.
15th	1st	Introduction Leakage of air in Mines
	2nd	Describe causes of leakage of air in mines.
	3RD	Describe preventive measures of leakage of air in mines.
	4th	Describe causes and preventive measures of leakage of air in mines.

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Sign of faculty

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HOD
Dept. of Mining

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Principal
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