

Discipline:	Mining	Semester:	3rd	Name of the Teaching Faculty: AJITA SAHDD	
Subject:	MOM	No of Days/Week Class Allotted:	_____	Semester From date: 15/09/22 To date: 13/01/23	No. of Weeks:
WEEK	Class Day	Theory Topics			
1st	1st	Define Elasticity and Hooke's Law.			
	2nd	Define Limit of Proportionality.			
	3rd	Define young's modulus and problems.			
	4th	Various factors of safety, lateral strain and poisson's ratio.			
	5th				
2nd	1st	Explain stress-strain curve for ductile materials.			
	2nd	Explain the effect of axial load on a bar of uniform section and variable section.			
	3rd	Solve numerical problem on uniform section and variable section.			
	4th	Define bending moment and shear force.			
	5th				
3rd	1st	Describe various types of beam and types of loading.			
	2nd	Explain shear force diagram and bending moment diagram.			
	3rd	Describe cantilever with concentrated loading.			
	4th	Cantilever with U.D.L over whole span system.			
	5th				

WEEK	Class Day	Theory Topics
4th	1st	Describe simply supported beam with concentration loading.
	2nd	Simply supported beam with U.D.L over whole span.
	3rd	State bending formula and solve some problem.
	4th	Define section modulus and discuss of problem on it.
	5th	
5th	1st	Discuss out section modulus for beam section of simple class.
	2nd	Define torsion and states it's effects and application of torsion formula.
	3rd	Describe working of shaft coupling such as hydraulic and magnetic couplings.
	4th	Working principle of Belt, chain and rope drive.
	5th	
6th	1st	Function of simple and compound gear train and torque converters.
	2nd	Function of flywheel and governors.
	3rd	Explain working of watt, Porter and Proell governors.
	4th	Define various types and properties of fluid.
	5th	

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WEEK	Class Day	Theory Topics		
7th	1st	Describe pressure of fluid and pressure head.		
	2nd	Discuss working principle of various pressure measuring device.		
	3rd	Working principle of Piezometer tube.		
	4th	State and explain continuity equation.		
	5th			
8th	1st	Discuss and explain Bernoulli's theorem		
	2nd	Working principle of venturimeter. solve numerical problem.		
	3rd	Define and classify orifices and uses.		
	4th	Define formula and discharge for rectangular orifices and solve problems.		
	5th			
9th	1st	Define and differentiate between orifice and notch.		
	2nd	Classify various types of notches.		
	3rd	State formula for discharge through notch and solve problem on above.		
	4th	State and explain laws of fluid friction.		
	5th			

WEEK	Class Day	Theory Topics
10 th	1st	discuss loss of head due to friction.
	2nd	Darcy weisbach formula and solve some problems.
	3rd	explain hydraulic gradient and discuss problems.
	4th	EXPLAIN energy gradient and discuss some problems.
	5th	
11 th	1st	discuss and Introduction of compressed air as a power.
	2nd	classify compressors and state working principle
	3rd	various methods of transmission and storage of compressed air.
	4th)
	5th	
12 th	1st	discuss use of compressed air in mines.
	2nd	advantages and disadvantages of compressed air use in mines.
	3rd	discuss the working principle of pneumatic machines.
	4th	solve some problems above as.
	5th	

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WEEK	Class Day	Theory Topics		
13 th	1st	Discuss various air cycles utilized in I/C engines.		
	2nd	Discuss utilization of I/C engine. OTTO cycle, Diesel cycle.		
	3rd	"	"	
	4th	Explain working principle of 2 stroke petrol and diesel engine.		
	5th			
14 th	1st	Explain working principle of 4 stroke petrol and diesel engine.		
	2nd	Define I.H.P and B.H.P and Mechanical efficiency of I/C engine.		
	3rd	"	"	
	4th	State various applications of I/C engines in mining field.		
	5th			
15 th	1st	Review class		
	2nd	Review class		
	3rd	doubt clear class		
	4th	doubt clear class		
	5th			