GOVERNMENT POLYTECHNIC JAJPUR
A/ P: Ragadi, Block: Korei, Dist.: Jajpur, Odisha- 755019
DEPARTMENT OF MINING ENGINEERING
LESSON PLAN

Discipline: Mining	Semester: 3rd	Name of the Teaching faculty: Soubhagya Ghadai	
Subject: MOM	No of Days/Week class alloted: 4	Semester from Date: 01.08.2023 To Date: 30.11.2023 No of weeks: 16	

Week	Class Day	Topics
1st	1st	Define Elasticity ' Hook's Law , Limit of Proportionality.
	2nd	Young's Modulus , Factor of safety.
	3rd	Lateral strain and Poisson's ratio.
	4th	Explain stress-strain curve for ductile materials.
2nd	1st	Explain the effect of axial load on bar of Uniform section
	2nd	Explain the effect of axial load on bar of variable section
	3rd	Solve numerical problems on above
	4th	Define bending moment and shear force.
3rd	1st	State types of beam and types of loading.
	2nd	Explain shear force diagram and bending moment diagram for Cantilever with concentrated loading.
	3rd	Explain shear force diagram and bending moment diagram for cantilever beam with U.D.L over whole span
	4th	Explain shear force diagram and bending moment diagram for Simply supported beam with concentration loading.
4th	1st	Explain shear force diagram and bending moment diagram for Simply supported beam with U.D.L over whole span
	2nd	Define section modules. ⬚ Find out section modules for beam section of simple cases.
	3rd	Define torsion and state its effects and application of torsion formula
	4th	Explain working of ⬚ Shaft couplings such as hydraulic and magnetic couplings.
5th	1st	Explain working ofBelt, chain and rope Drive, Simple and compound gear train.
	2nd	State function of flywheel and governors.
	3rd	Explain working of watt, purler and proel governors.
	4th	State various fluid properties.
6th	1st	Define pressure of fluid and pressure head
	2nd	as:Piezometer
	3rd	State and explain continuity equation.
	4th	State and explain Bernoulli's theorem.
7th	1st	Explain working of venturimeter. Solve numerical problems on above.
	2nd	Define and classify orifices.
	3rd	State the formula and discharge for rectangular orifices and solve problems.
	4th	Define and differentiate between orifice and notch.
	1st	Classification notches.

8th	2nd	State formula for discharge through notches & solve problem on above.
	3rd	State and explain laws of fluid friction.
		State and explain loss of head due to friction (Darcy weisbach formula)
	4th	Explain hydraulic gradient and energy gradient and Solve numerical problems as above.
9th	1st	class test 1
	2nd	Explain introduction of compressed air as a power.
	3rd	Classify Compressor & state working principle.
	4th	Classify Compressor & state working principle.
10th	1st	State the various methods of transmission and storage of compressed air.
	2nd	State the various methods of transmission and storage of compressed air.
	3rd	State and explain the advantages of use of compressed air in mines.
	4th	Explain the working principle of pneumatic machines.
11th	1st	Explain the working principle of pneumatic machines.
	2nd	Explaination of OTTO air cycle utilized in I/C Engines .
	3rd	Explaination of DIESEL air cycle utilized in I/C Engines .
	4th	Explain working principle of 2 stroke petrol engine
12th	1st	Explain working principle of 2 stroke diesel engine
	2nd	Explain working principle of 4 stroke petrol engine
	3rd	Explain working principle of 4 stroke diesel engine
	4th	Define I.H.P., B.H.P. & Mechanical efficiency of I/C Engine.
13th	1st	State various applications of I/C Engines in Mining field.
	2nd	State various applications of I/C Engines in Mining field.
	3rd	CLASS TEST 2
	4th	REVISION/DOUBT CLEARING CLASS
14th	1st	REVISION/DOUBT CLEARING CLASS
	2nd	REVISION/DOUBT CLEARING CLASS
	3rd	REVISION/DOUBT CLEARING CLASS
	4th	REVISION/DOUBT CLEARING CLASS
15th	1st	REVISION/DOUBT CLEARING CLASS
	2nd	REVISION/DOUBT CLEARING CLASS
	3rd	REVISION/DOUBT CLEARING CLASS
	4th	REVISION/DOUBT CLEARING CLASS

LEARNING RESOURCES

Sl. No.	Author	Title of the book	Publisher
01	O.P. Khanna	Production Technology, Vol- I& II	Dhanpat Rai Publication
02	B.S Raghuwanshi	Workshop technology, Vol- I& II	Dhanpat Rai & Co
03	P.N. Rao	Manufacturing technology, Vol- I&II	TMH
04	P.C.Sharma	Manufacturing technology, Vol- I	S. Chand

Soubhagya Khadei
Signature of Faculty   1/8/23