DEPARTMENT OF MECHANICAL ENGINEERING, GOVT. POLYTECHNIC, DEOGARH		
LESSON PLAN FOR ACADEMIC SESSION 2023-24		
Discipline: Mining	**Semester: 3RD**	**Name of the Teaching faculty: Meenaketan Majhi, Sr. Lect.(Mechanical)**
Subject: MOM	**No of Days/Week class alloted: 4**	**Semester from Date: 01.08.2023 To Date: 30.11.2023 No of weeks: 15**
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
		State bending formula.
	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	Explain working of watt, purler and proel governors.
6th	1st	State various fluid properties.
	2nd	Define pressure of fluid and pressure head
	3rd	State and explain working principle of various pressure measuring devices such as:Piezometer
	4th	State and explain continuity equation.
7th	1st	State and explain Bernoulli's theorem.
		Explain working of venturimeter.
	2nd	Solve numerical problems on above.
	3rd	Solve numerical problems on above.
	4th	Define and classify orifices.
8th	1st	State the formula and discharge for rectangular orifices and solve problems.
	2nd	State the formula and discharge for rectangular orifices and solve problems.
	3rd	Define and differentiate between orifice and notch.
		Classification notches.
	4th	State formula for discharge through notches & solve problem on above.
9th	1st	State and explain laws of fluid friction.
	2nd	State and explain loss of head due to friction (Darcy weisbach formula)
	3rd	Explain hydraulic gradient and energy gradient and Solve numerical problems as above.
	4th	class test 1
10th	1st	Explain introduction of compressed air as a power.
	2nd	Explain introduction of compressed air as a power.
	3rd	Classify Compressor & state working principle.
	4th	Classify Compressor & state working principle.
	1st	Classify Compressor & state working principle.

11th	2nd	State the various methods of transmission and storage of compressed air.
	3rd	State the various methods of transmission and storage of compressed air.
	4th	State the various methods of transmission and storage of compressed air.
12th	1st	State and explain the advantages of use of compressed air in mines.
	2nd	State and explain the advantages of use of compressed air in mines.
	3rd	State and explain the advantages of use of compressed air in mines.
	4th	Explain the working principle of pneumatic machines.
13th	1st	Explain the working principle of pneumatic machines.
	2nd	Explain the working principle of pneumatic machines.
	3rd	Explaination of OTTO air cycle utilized in I/C Engines .
	4th	Explaination of DIESEL air cycle utilized in I/C Engines .
14th	1st	Explain working principle of 2 stroke petrol engine
	2nd	Explain working principle of 2 stroke diesel engine
	3rd	Explain working principle of 4 stroke petrol engine
	4th	Explain working principle of 4 stroke diesel engine
15th	1st	Define I.H.P., B.H.P. & Mechanical efficiency of I/C Engine.
	2nd	State various applications of I/C Engines in Mining field.
	3rd	State various applications of I/C Engines in Mining field.
	4th	CLASS TEST 2

Signature of Faculty