

SYNERGY SCHOOL OF ENGINEERING,DKL
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN

Discipline: Mining	Semester: 3rd	Name of the Teaching faculty: G C SWAIN
Subject: MOM (Th4)	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	Numerical problem solve
	3rd	Young's Modulus.
	4th	Factor of safety.
2nd	1st	Numerical problem solve
	2nd	Lateral strain and Poisson's ratio.
	3rd	Explain stress-strain curve for ductile materials.
	4th	Explain the effect of axial load on bar of Uniform section
3rd	1st	Numerical problem solve
	2nd	Variable section o Solve numerical problems on above
	3rd	Numerical problem solve
	4th	Define bending moment and shear force.
4th	1st	State types of beam and types of loading.
	2nd	Explain shear force diagram and bending moment diagram for Cantilever with concentrated loading Cantilever with U.D.I. over whole span
	3rd	Numerical problem solve
	4th	Simply supported beam with concentration loading.
5th	1st	Simply supported beam with U.D.I. over whole span.
	2nd	Numerical problem solve
	3rd	State bending formula. o Define section modules & Find out section modules for beam section of simple cases Define torsion and state its effects& State application of torsion formula.
	4th	Explain working of Shaft couplings such as hydraulic and magnetic couplings Belt, chain and rope Drive. Simple and compound gear train.
6th	1st	Numerical problem solve
	2nd	Torque converters. o State function of flywheel and governors. o Explain working of watt, purler and proel governors
	3rd	State various fluid properties. Define pressure of fluid and pressure head.

	4th	oState and explain working principle of various pressure measuring devices such as: Piezometer tube
7th	1st	State and explain continuity equation. State and explain Bernoulli's theorem.
	2nd	Explain working of venturimeter. Solve numerical problems on above.
	3rd	Define and classify orifices. State the formula and discharge for rectangular orifices and solve problems..
	4th	Define and differentiate between orifice and notch. Classify notches
8th	1st	State formula for discharge through notches & solve problem on above. o State and explain laws of fluid friction.
	2nd	State and explain loss of head due to friction (Darcy weisbach formula)
	3rd	Numerical problem solve
	4th	Numerical problem solve
9th	1st	Explain hydraulic gradient and energy gradient
	2nd	Solve numerical problems as above
	3rd	Explain introduction of compressed air as a power.
	4th	Explain introduction of compressed air as a power.
10th	1st	Classify Compressor & state working principle.
	2nd	Classify Compressor & state working principle.
	3rd	Classify Compressor & state working principle.
	4th	State various method of transmission and storage of compressed air.
11th	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	State and explain the advantages of use of compressed air in mines.
12th	1st	Explain the working principle of pneumatic machines.
	2nd	Monthly Test
	3rd	Explain various air cycles utilized in I/C Engines such as: OTTO Cycle
	4th	OTTO Cycle
13th	1st	Diesel Cycle

	2nd	Diesel Cycle
	3rd	Explain working principle of 2 stroke and 4 stroke petrol engines
	4th	Explain working principle of 2 stroke and 4 stroke petrol engines
14th	1st	Explain working principle of 2 stroke and 4 stroke Diesel engines
	2nd	Explain working principle of 2 stroke and 4 stroke Diesel engines
	3rd	Define I.H.P., B.H.P. & Mechanical efficiency of I/C Engine
	4th	State various applications of I/C Engines in Mining field
15th	1st	Previous yr Question with Answer Discussion
	2nd	Previous yr Question with Answer Discussion
	3rd	Previous yr Question with Answer Discussion
	4th	Previous yr Question with Answer Discussion

Girish chandra Swain

Signature of Faculty