GOVT.POLYTECHNIC, MAYURBHANJ LESSON PLAN-2026-27 (WINTER)

Name of the Faculty : Anup kumar Panda

Discipline: Mechanical | Subject : FM & FP | W.e.f : 01.07.2026 to Date 05.11.2026 | Semester - 3rd

Month	Week	Day		TOPIC
July	1st	4th	Unit 1	Introduction & Definition of a fluid, classification of fluids
	2nd	1st		various fluid properties such as density, specific weight, specific gravity, viscosity and surface tension and state the units
		2nd		fluid pressure, total pressure (hydrostatic force) and location of centre of pressure on vertical
		4th		horizontal , inclined and curved surfaces by fluid,
	3rd	1st		Numericals
		2nd		working of various measuring devices for pressure, the principle of manometers of simple, differential and inverted types
	4th	1st		principle of buoyancy and floatation.
		2nd		Simple numericals on Manometer , buoyancy and Floatation
		4th	Unit 2	Various types of flow, circulation and vorticity
	5th	1st		Stream-line, path line and streak-line, various energies of fluid
		2nd		law of conservation of mass, energy equation -Bernoulli's theorem, the limitations of same-application of Bernoulli's equation
		4th		the working of venturimeter, pitot tube,
August	1st	1st		equation of flow rate and velocity with respect to venturimeter and pitot tube respectively, the working of flowmeter: current meter
		2nd		Definition –orifice, orifice coefficient such as Cc, Cv, Cd
		4th		Class Test 1
	2nd	1st		Relationship between orifice coefficients, weir and notch, Discharge over rectangular notch and weir
		2nd		Simple numericals.
		4th	Unit 3	Definition of a pipe. laws of fluid friction, Equation of loss of head through pipe due to friction,
	3rd	1st		Darcy's formula and Chezy's formula
		2nd		hydraulic gradient and total energy line
		4th		Nozzle and its application
	4th	1st		Power transmission through nozzle The condition of maximum power transmission through nozzle
		2nd		Expression for diameter of nozzle for maximum power transmission
	5th	1st		Selection of turbine on thebasis of head and discharge available
September	1st	2nd		1st Internal Assessment
		4th		Construction and working principle of Pelton wheel
	2nd	1st		Velocity diagram, work done & efficiency calculation, Numericals
		2nd		Construction and working principle of Francis Turbine
		4th		Velocity diagram, work done & efficiency calculation
	3rd	4th		Numericals
	4th	1st		Construction and working principle of Kaplan Turbine
		2nd		Velocity diagram, work done & efficiency calculation
		4th	Unit 4	Numericals
	5th	1st		Draft tubes – types and construction, Concept ofcavitation in turbines
		2nd		centrifugal pump Principle of working and applications
October	1st	4th		Types of casings and impellers, Concept of multistage, Priming and its methods,
	2nd	1st		Manometric head, Work done, Manometric efficiency, Overall efficiency. Simple numericals
		2nd		Class Test - 2
		4th		Construction, working principle and applications ofsingle acting reciprocating pumps
	3rd	1st		Construction, working principle and applications of double acting reciprocating pumps
		2nd		Concept of Slip, Negative slip, Cavitation and separation. Simple numericals
		4th		Definition of fluid power, classification – hydraulic power and pneumatic power
	4th	4th		Hydraulic Systems -Basic principle of enclosed hydraulic system – Pascal's law
	5th	1st		Oil hydrauiic system – reservoir, filter pressure limiting valves, direction control valves
		2nd	Unit 5	flow control valves, actuators (linear and rotary)
		4th		2nd Internal Assessment
November	1st	1st		accumulator, pipes
		2nd		various positive displacement pumps-gear, motion of rotary actuator,
		4th		holding a job, hydraulic press etc.

30.06.26 | 30/6/26 | 30.06.26

Subject Expert Gp | Hod Mechanical Gp Mayurbhanj | Academic co-ordinator Gp Mayurbhanj