

GOVT.POLYTECHNIC, MAYURBHANJ LERSON PLAN-2025-26 (WINTER)				
Name of the Faculty : Anup kumar Panda				
Discipline:Mechanical		W.e.f : 14.07.2025 to Date 15.11.2025		
Subject : FM & FP		Semester - 3rd		
Month	Week	Day	TOPIC	
July	3rd	1st	Introduction & Definition of a fluid, classification of fluids	
		2nd	various fluid properties such as density, specific weight, specific gravity, viscosity and surface tension and state the units	
		4th	fluid pressure, total pressure (hydrostatic force) and location of centre of pressure on vertical	
	4th	1st	horizontal, inclined and curved surfaces by fluid,	
		2nd	Numericals	
		4th	working of various measuring devices for pressure, the principle of manometers of simple, differential and inverted types	
	5th	1st	principle of buoyancy and floatation.	
		2nd	Simple numericals on Manometer , buoyancy and floatation	
	August	2nd	1st	Various types of flow, circulation and vorticity
			2nd	Stream-line, path line and streak-line, various energies of fluid
3rd			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,	
3rd		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		1st	Monthly Test 1	
		2nd	Relationship between orifice coefficients, weir and notch, Discharge over rectangular notch and weir	
		3rd	Simple numericals.	
		4th	Definition of a pipe. laws of fluid friction. Equation of loss of head through pipe due to friction,	
	5th	1st	student Mentoring Session	
		2nd		
September	1st	1st	Darcy's formula and Chezy's formula	
		2nd	2nd Assessment	
		4th	hydraulic gradient and total energy line	
	2nd	1st	Nozzle and its application	
		2nd	Power transmission through nozzle The condition of maximum power transmission through nozzle	
		4th	Expression for diameter of nozzle for maximum power transmission	
	3rd	1st	Selection of turbine on the basis of head and discharge available	
		2nd	Construction and working principle of Pelton wheel	
		4th	Velocity diagram, work done & efficiency calculation	
	4th	1st	Numericals	
		2nd	Construction and working principle of Francis Turbine	
		3rd	Velocity diagram, work done & efficiency calculation	
2nd		1st	Numericals	
		2nd	Draft tubes – types and construction, Concept of cavitation in turbines	
		4th	centrifugal pump Principle of working and applications	
October	2nd	1st	Numericals	
		2nd	Construction and working principle of Kaplan Turbine	
		4th	Velocity diagram, work done & efficiency calculation	
	3rd	1st	Numericals	
		2nd	Draft tubes – types and construction, Concept of cavitation in turbines	
		4th	centrifugal pump Principle of working and applications	
	4th	1st	Types of casings and impellers, Concept of multistage, Priming and its methods, Manometric head, Work done, Manometric efficiency, Overall efficiency. Simple numericals	
		2nd	Construction, working principle and applications of single acting reciprocating pumps	
		3rd	Internal Assessment 2	
		4th	Construction, working principle and applications of double acting reciprocating pumps	
5th	1st	Concept of Slip, Negative-slip, Cavitation and separation. Simple numericals		
	2nd	Definition of fluid power, classification – hydraulic power and pneumatic power		
November	2nd	1st	Hydraulic Systems -Basic principle of enclosed hydraulic system – Pascal's law	
		2nd	Oil hydraulic system – reservoir, filter pressure limiting valves, direction control valves	
	3rd	1st	flow control valves, actuators (linear and rotary), accumulator, pipes	
		2nd	Monthly Test 2	
4th	1st			
	2nd	various positive displacement pumps-gear, motion of rotary actuator, holding a job, hydraulic press etc.		

