

**GOVT. POLYTECHNIC MAYURBHANJ**

**LESSON PLAN**

<b>Discipline : MECHANICAL ENGG.</b>		<b>Semester: 5th Sem</b>	<b>Name of the Teaching Faculty :Debashree D. Pramanik</b>
<b>Subject : HM&amp;IFP</b>		<b>No. of Days / per week class allotted : 04</b>	<b>Semester From date : 01.08.2023      To Date : 30.11.2023</b>
<b>MONTH</b>	<b>Week</b>	<b>Day</b>	<b>Topics</b>
<b>AUGUST</b>	<b>2nd</b>	<b>2nd</b>	<b>1.0 HYDRAULIC TURBINES</b> -Introduction about hydraulic machine
		<b>3rd</b>	Definition and classification of hydraulic turbines
		<b>4th</b>	Construction and working principle of impulse turbine.
	<b>3rd</b>	<b>1st</b>	Velocity diagram of moving blades, work done and derivation of various efficiencies of impulse turbine.
		<b>3rd</b>	Velocity diagram of moving blades, work done and derivation of various efficiencies of Francis turbine
		<b>4th</b>	Velocity diagram of moving blades, work done and derivation of various efficiencies of Kaplan turbine
	<b>4th</b>	<b>1st</b>	Distinguish between impulse turbine and reaction turbine
		<b>2nd</b>	Problem solved
		<b>3rd</b>	Problem solved
		<b>4th</b>	<b>2.0 CENTRIFUGAL PUMPS</b> -Defination and classification of pump
	<b>5th</b>	<b>1st</b>	Construction and working principle of centrifugal pumps
		<b>2nd</b>	work done and derivation of various efficiencies of centrifugal pumps
		<b>4th</b>	Problem solved
<b>2nd</b>	<b>1st</b>	<b>3.0 RECIPROCATING PUMPS-</b> Describe construction & working of single acting and double acting reciprocating pump	
	<b>2nd</b>	Describe construction & working of single acting and double acting reciprocating pump	

SEPTEMBER		4th	<b>CLASS TEST-1</b>
	3rd	1st	Derive the formula for power required to drive the pump (Single acting & double acting)
		2nd	Define slip
		3rd	State positive & negative slip & establish relation between slip & coefficient of discharge
		4th	Problem solved
	4th	1st	Problem solved
		4th	<b>4.0 PNEUMATIC CONTROL SYSTEM</b> -Introduction to pneumatic circuit
	5th	1st	Elements –filter-regulator-lubrication unit
		2nd	Pressure control valves
		3rd	Pressure regulation valves
4th		Direction control valves	
OCTOBER	1st	2nd	3/2DCV,5/2 DCV,5/3DCV
		3rd	Flow control valves and throttle valves
		4th	<b>INTERNAL</b>
	2nd	1st	ISO Symbols of pneumatic components
		2nd	Pneumatic circuits
		3rd	Direct control of single acting cylinder
		4th	Operation of double acting cylinder
	3rd	1st	Operation of double acting cylinder with metering in and metering out control
		2nd	REVISION
		3rd	REVISION
		4th	<b>5.0 HYDRAULIC CONTROL SYSTEM</b> -Hydraulic system, its merit and demerits
	5th	1st	Hydraulic accumulators and Pressure control valves
		2nd	Pressure relief valves
	1st	3rd	Pressure regulation valves
		4th	Direction control valves
		1st	3/2DCV,5/2 DCV,5/3DCV

NOVEMBER	2nd	2nd	Flow control valves
		3rd	Throttle valves
		4th	Fluid power pumps
	3rd	1st	External and internal gear pumps
		2nd	Vane pump
		3rd	Radial piston pumps
		4th	ISO Symbols for hydraulic components.
	4th	1st	Actuators
		2nd	Hydraulic circuits
		3rd	Direct control of single acting cylinder
		4th	Operation of double acting cylinder
	5th	2nd	Operation of double acting cylinder with metering in and metering out control
		3rd	Comparison of hydraulic and pneumatic system
		4th	<b>CLASS TEST-2</b>

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