

<b>Discipline:-</b> Mechanical Engg.	<b>Semester:-</b> 5th	<b>Name of the Teaching Faculty:</b> Er. KAILISH PANDA
<b>Subject:-</b> HYDRAULIC MACHINES &INDUSTRIAL FLUID POWER	<b>No. Of days/week class allotted - 04</b>	<b>Semester from:</b> 15.09.2022 To: 22.12.2022
		No. Of weeks:- <b>15</b>
<b>Week</b>	<b>No. Of Period</b>	<b>Theory Topics</b>
15.09.2022 To 17.09.2022	1 <sup>st</sup>	Definition and classification of hydraulic turbines
	2 <sup>nd</sup>	<b>Vishwakarma Puja</b>
19.09.2022 To 24.09.2022	1 <sup>st</sup>	Construction and working principle of impulse turbine.
	2 <sup>nd</sup>	Velocity diagram of moving blades, work done and derivation of various efficiencies of impulse turbine.
	3 <sup>rd</sup>	Velocity diagram of moving blades, work done and derivation of various efficiencies of Francis turbine.
	4 <sup>th</sup>	Velocity diagram of moving blades, work done and derivation of various efficiencies of Kaplan turbine
26.09.2022 To 01.10.2022	1 <sup>st</sup>	Numerical on above
	2 <sup>nd</sup>	Distinguish between impulse turbine and reaction turbine.
	3 <sup>rd</sup>	Construction and working principle of centrifugal pumps
	4 <sup>th</sup>	work done and derivation of various efficiencies of centrifugal pumps.
03.10.2022 To 08.10.2022	<b>DURGA PUJA HOLIDAYS</b>	
10.10.2022 To 15.10.2022	1 <sup>st</sup>	Numerical on above
	2 <sup>nd</sup>	Describe construction & working of single acting reciprocating pump.
	3 <sup>rd</sup>	Continue..
	4 <sup>th</sup>	Describe construction & working of double acting reciprocating pump.
17.10.2022 To 22.10.2022	1 <sup>st</sup>	Derive the formula foe power required to drive the pump (Single acting & double acting)
	2 <sup>nd</sup>	Define slip.
	3 <sup>rd</sup>	State positive & negative slip & establish relation between slip & coefficient of discharge.
	4 <sup>th</sup>	Solve numerical on above

Week	No. Of period	Theory Topics
24.10.2022 To 29.10.2022	1 <sup>st</sup>	Numericals
	2 <sup>nd</sup>	Elements –filter-regulator-lubrication unit
	3 <sup>rd</sup>	Pressure control valves 1. Pressure relief valves 2. Pressure regulation valves
	4 <sup>th</sup>	Direction control valves .1 3/2DCV,5/2 DCV,5/3DCV, 2. Flow control valves ,3. Throttle valves.
31.10.2022 To 05.11.2022	1 <sup>st</sup>	ISO Symbols of pneumatic components
	2 <sup>nd</sup>	Pneumatic circuits  1 Direct control of single acting cylinder, 2. Operation of double acting cylinder, 3 Operation of double acting cylinder with metering in and metering out control
	3 <sup>rd</sup>	Hydraulic system, its merit and demerits
	4 <sup>th</sup>	Continue..
07.11.2022 To 12.11.2022	1 <sup>st</sup>	Hydraulic accumulators 1 Pressure control valves 2 Pressure relief valves 3 Pressure regulation valves
	2 <sup>nd</sup>	<b>Kartika Purnima</b>
	3 <sup>rd</sup>	Direction control valves 1 3/2DCV,5/2 DCV,5/3DCV 2 Flow control valves 3 Throttle valves
	4 <sup>th</sup>	Continue..
14.11.2022 To 19.11.2022	1 <sup>st</sup>	Fluid power pumps 1 External and internal gear pumps 2 Vane pump 3 Radial piston pumps
	2 <sup>nd</sup>	Continue..
	3 <sup>rd</sup>	<b>Prathamastami</b>
	4 <sup>th</sup>	Revision the chapter
21.11.2022 To 26.11.2022	1 <sup>st</sup>	ISO Symbols for hydraulic components.
	2 <sup>nd</sup>	Actuators
	3 <sup>rd</sup>	Continue..
	4 <sup>th</sup>	Hydraulic circuits 1 Direct control of single acting cylinder 2.Operation of double acting cylinder 3. Operation of double acting cylinder with metering in and metering out control
28.11.2022 To 3.12.2022	1 <sup>st</sup>	Continue..
	2 <sup>nd</sup>	Revision of fluid power pump
	3 <sup>rd</sup>	Describe the various types of pneumatic circuits
	4 <sup>th</sup>	Revision of Hydraulic accumulator.

<b>Week</b>	<b>No.of period</b>	<b>Theory Topics</b>
5.12.2022 To 10.12.2022	1 <sup>st</sup>	Revision on velocity diagram of impulse turbine
	2 <sup>nd</sup>	Numericals on velocity diagram of francis turbine.
	3 <sup>rd</sup>	Numericals on velocity diagram of Kaplan turbine.
	4 <sup>th</sup>	Numericals.
12.12.2022 To 17.12.2022	1 <sup>st</sup>	Comparison of hydraulic and pneumatic system
	2 <sup>nd</sup>	Continue..
	3 <sup>rd</sup>	Revision
	4 <sup>th</sup>	Revision of previous topic.
19.12.2022 To 24.12.2022	1 <sup>st</sup>	Revision
	2 <sup>nd</sup>	Discuss the long type of theory previous year asked question
	3 <sup>rd</sup>	Discuss short type of previous year asked question Discuss previous year asked question