

ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Discipline: MECHANICAL ENGINEERING	Semester: 5th	Name of the Teaching Faculty: PARESH KUMAR MAJI	
Subject: HYDRAULIC & INDUSTRIAL FLUID POWER	No of Days/Week Class Allotted: 4	Semester From date: 15-9-22 To date: _____	No. of Weeks: 15

WEEK	Class Day	Theory Topics
1st 15-09-22 & 19-09-22 to 20-09-22	1st 15-09-22	<u>HYDRAULIC TURBINES</u> :- Definition & classification
	2nd 19-09-22	Impulse turbine - working principle & construction.
	3rd 20-09-22	velocity diagram of moving blades. Derivation of various efficiencies of Impulse turbine
	4th	
	5th	
2nd 21-09-22 & 22-09-22 to 26-09-22 to 27-9-22	1st 21-09-22	Kaplan Turbine :- construction & working principle.
	2nd 22-09-22	velocity diagram of it & work done.
	3rd 26-09-22	Derivation of efficiencies of Kaplan Turbine.
	4th 27-09-22	Francis Turbine - construction & working principle
	5th	
3rd 28-09-22 to 29-09-22 & 10-10-22 to 11-10-22	1st 28-09-22	velocity diagram of moving blade of Francis turbine & its working.
	2nd 29-09-22	Derivation of various efficiencies of Francis turbine.
	3rd 10-10-22	Numerical on the above
	4th 11-10-22	Reaction turbine.
	5th	

WEEK	Class Day	Theory Topics
12-10-22 to 18-10-22 4th	1st 12-10-22	Distinguish between impulse turbine & Reaction turbine.
	2nd 13-10-22	Problem practice & doubt clearing
	3rd 17-10-22	Problem practice & doubt clearing.
	4th 18-10-22	<u>CENTRIFUGAL PUMPS</u> :- Working principle of Centrifugal pump.
	5th	
19-10-22 to 26-10-22 5th	1st 19-10-22	Work done & derivation - Various efficiencies of Centrifugal Pump
	2nd 20-10-22	Numerical problem of the above.
	3rd 24-10-22	Problem practice of it.
	4th 26-10-22	Practice problem on it
	5th	
27-10-22 to 2-11-22 6th	1st 27-10-22	<u>Reciprocating pump</u> :- Describe reciprocating pump
	2nd 31-10-22	Construction & working principle of it
	3rd 1-11-22	Types of it - Single acting - Double acting
	4th 2-11-22	Derivation & Construction of single acting reciprocating pump
	5th	

Discipline:	Mechanical Engineering	Semester: 5th	Name of the Teaching Faculty: PARESH KUMAR MAJI	
Subject:	H.M & I.F.P	No of Days/Week Class Allotted: 4	Semester From date: _____ To date: _____	No. of Weeks: 15

WEEK	Class Day	Theory Topics
7th	1st 3-11-22	Working of double acting of reciprocating pump.
	2nd 7-11-22	Derive the formula for power required.
	3rd 8-11-22	Formula for power required to drive pump.
	4th 9-11-22	Single acting & AMP
	5th	
8th	1st 10-11-22	Derive power required for double acting pump.
	2nd 14-11-22	Define slip
	3rd 15-11-22	State positive & amp
	4th 16-11-22	State negative & amp
	5th	
9th	1st 17-11-22	Differentiate between -ve & +ve slip.
	2nd 21-11-22	State Define coefficient of discharge
	3rd 22-11-22	Establish the relation of slip.
	4th 23-11-22	Equation for coefficient of discharge.
	5th	

WEEK	Class Day	Theory Topics
24-11-22 to 30-11-22 10th	1st 24-11-22	Establish between Slip & co-efficient of discharge
	2nd 28-11-22	Solve numerical on above
	3rd 29-11-22	problem practice & doubt clearing
	4th 30-11-22	Problem practice & doubt clearing.
	5th	
1-12-22 to 7-12-22 11th	1st 1-12-22	<u>PNEUMATIC CONTROL SYSTEM</u> :- Elements - Filter - regulator lubrication unit.
	2nd 5-12-22	pressure control valves & its type.
	3rd 6-12-22	pressure relief valves
	4th 7-12-22	pressure regulation valves
	5th	
8-12-22 to 14-12-22 12th	1st 8-12-22	Direction of control valve 1/2 De, 5/2 DeV, 5/3 DeV
	2nd 12-12-22	Flow control valves
	3rd 13-12-22	Throttle valves
	4th 14-12-22	ISO Symbols of pneumatic components.
	5th	

Discipline:	Mechanical Engineering	Semester: 5th	Name of the Teaching Faculty: PARESH KUMAR MAJJI	
Subject:	H.M. & I.F.P	No of Days/Week Class Allotted: 4	Semester From date: 15-09-22 To date: _____	No. of Weeks: 15

WEEK	Class Day	Theory Topics
15-12-22 & 19-12-22 to 21-12-22 13th	1st 15-12-22	Pneumatic circuits:- Direct control of single acting cylinder.
	2nd 19-12-22	operation of double acting cylinder
	3rd 20-12-22	operation of double acting cylinder with metering
	4th 21-12-22	Operation of double acting cylinder with metering out control.
	5th	
22-12-22 & 26-12-22 to 28-12-22 14th	1st 22-12-22	<u>HYDRAULIC CONTROL SYSTEM:-</u> Hydraulic system. Merit & demerits.
	2nd 26-12-22	Hydraulic accumulators Pressure control valves
	3rd 27-12-22	pressure relief valves
	4th 28-12-22	pressure regulation valves
	5th	
15th 29-12-22	1st 29-12-22	Direction control valves:- 3/2 Dev, 5/2 Dev, 5/3 Dev
	2nd	Flow control valves
	3rd	Throttle Valve, External & internal gear pumps vane pump, Radial piston pump.
	4th	ISO-symbols for hydraulic components. Actuators, Hydraulic circuit, comparison of hydraulic & pneumatic systems
	5th	