ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Dicipline: Mech.	Semester: 5th	Name of the Teaching Faculty: Brajamanda Mishra	
Subject: Hidraulic Machines & Industrial Fluid POWER	No of Days/Week Class Allotted: 4	Semester From date: 15/09/22 To date 21/01/23	No.of Weeks:

WEEK	Class Day	Theory Topics
1	1st	Distinguish the working principale of Pumps and turbines.
	2nd	Explain the working of centrifugal Pumps and gear pumps.
	3rd	Compare Pneumatic System with Hydraulic System.
	4th	Draw Pneumatic circuits for industrial application.
	5th	State the Properties of hydraulic System.
2	1st	Derivation and classification of hydraulic turbines
	2nd	Construction and working principle of impulse turbine
	3rd	Velocity diagram of moving blades, work done of impulse turbine
	4th	Derivation of various efficiencies of impulse turbine
	5th	
3	1st	Velocity diagram of moving blades, work done & derivation of various efficiencies of Francis turbine
	2nd	Details diagram of Kaplan turbine
	3rd	Velocity diagram of moving blades, work done and derivation of various efficiency of Kaplan turbine.
	4th	Numericals on above.
	5th	

WEEK	Class Day	Theory Topics
A	1st	Distinguish between Impulse & reaction turbines
	2nd	Construction of centrifugal pump.
	3rd	Working principles of centrifugal pump.
	4th	Derivation of various efficiencies of centrifugal pump.
	5th	
5	1st	Numericals on centrifugal pump.
	2nd	Describe construction of single-acting reciprocating pump.
	3rd	Derive working principle of single-acting reciprocating pump.
	4th	Describe the construction and working principle of double-acting reciprocating pump.
	5th	
6	1st	Derive the formula for power required to drive the pump
	2nd	Define slip. and it's types.
	3rd	State +ve and -ve slip.
	4th	Establishing the relation between them. and co-efficient of discharge.
	5th	

ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Dicipline: Mechanical	Semester: 5th	Name of the Teaching Faculty: Brijananda Mishra	
Subject: HM81F	No of Days/Week Class Allotted: 1	Semester From date: 15/09/22 To date 21/01/23	No.of Weeks:

WEEK	Class Day	Theory Topics
I	1st	Solve simple numericals on above.
	2nd	Elements – filter regulator – lubrication unit.
	3rd	Pressure controll valves.
	4th	Pressure relief valves.
	5th	
II	1st	Pressure regulation valves.
	2nd	Direct controll valves & types
	3rd	3/2 DCV, 5/2 DCV, 5/3 DCV
	4th	Flow controll valves.
	5th	
III	1st	Throttle valve
	2nd	ISO symbols of pneumatic components.
	3rd	Pneumatic circuits.
	4th	Direct controll of single-acting cylinder.
	5th	

WEEK	Class Day	Theory Topics
10	1st	Operation of double - acting cylinder
	2nd	Operation in meter-in & meter-out condition
	3rd	Hydraulic system :-
	4th	Merit & demerits of hydraulic system.
	5th	
11	1st	Hydraulic accumulators.
	2nd	Pressure controll valves
	3rd	Pressure regulation valves.
	4th	Direction controll valves.
	5th	
12	1st	3/2 DCV, 5/2 DCV, 5/3 DCV
	2nd	Flow controll valves.
	3rd	Throttle valves.
	4th	Fluid power pumps.
	5th	

ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Dicipline: Mech.	Semester: 5th	Name of the Teaching Faculty: Bijananda Mishra	
Subject: HM & IF	No of Days/Week Class Allotted: 1	Semester From date: 25/09/22 To date 21/01/23	No.of Weeks:

WEEK	Class Day	Theory Topics
13	1st	External gear pump with details diagram
	2nd	Internal gear pumps.
	3rd	Vane pump details
	4th	Radial piston pumps
	5th	
14	1st	ISO symbols for hydraulic components
	2nd	Actuators
	3rd	Hydraulic circuits
	4th	Revision of all above topics.
	5th	
15	1st	Direct control of single-acting cylinder.
	2nd	Operation of double-acting cylinder
	3rd	Operation with meter-in & meter-out ckt.
	4th	Comparision of hydraulic & pneumatic ckts.
	5th	