Discipline : MECHANICAL ENGINEERING	Semester:- 5TH	Name of the Teaching Faculty: - SUVENDU PANDA
Subject:- HMIF (TH-3)	No of Days/per Week Class Allotted :- 04	Semester From:- 15.09.2022To:- 22.12.2022
Week	**Class Day**	**Theory**
1st	1st	Definition of hydraulic turbines
	2nd	Classification of hydraulic turbines
	3rd	Construction of impulse turbine.
	4th	Working principle of impulse turbine.
2nd	1st	Velocity diagram of moving blades of impulse turbine.
	2nd	Work done and derivation of various efficiencies of impulseturbine.
	3rd	Velocity diagram of moving blades of Francis turbine.
	4th	Work done and derivation of various efficiencies of Francis turbine.
3rd	1st	Velocity diagram of moving blades of Kaplan turbine.
	2nd	Work done and derivation of various efficiencies of Kaplan turbine.
	3rd	Numerical on impulse turbine
	4th	Numerical on Kaplan turbine
4th	1st	Numerical on Francis turbine
	2nd	Distinguish between impulse turbine and reaction turbine.
	3rd	Class test 1
	4th	Construction of centrifugal pumps
5th	1st	Working principle of centrifugal pumps
	2nd	Work done of centrifugal pumps.
	3rd	Derivation of various efficiencies of centrifugal pumps.
	4th	Numerical on above
6th	1st	Describe construction of single acting reciprocating pump.
	2nd	Describe working of single acting reciprocating pump.
	3rd	Describe construction of double acting reciprocating pump.
	4th	Describe working of double acting reciprocating pump.
7th	1st	Derive the formula for power required to drive the pump (Single acting & double acting)
	2nd	Define slip
	3rd	State positive & amp; negative slip &amp

	4th	Establish relation between slip & coefficient of discharge
8th	1st	Solve numerical on above
	2nd	Elements–filter-regulator-lubrication unit
	3rd	Pressure control valves
	4th	Pressurereliefvalves
9th	1st	Pressure regulation valves
	2nd	Direction control valves
	3rd	3/2DCV, 5/2 DCV, 5/3DCV
	4th	Flow control valves
10th	1st	Throttle valves
	2nd	ISO Symbols of pneumatic components
	3rd	Pneumatic circuits
	4th	Direct control of single acting cylinder
11th	1st	Operation of double acting cylinder
	2nd	Operation of double acting cylinder with metering in control
	3rd	Operation of double acting cylinder with metering out control
	4th	Hydraulic system
12th	1st	Hydraulic system, its merit and demerits
	2nd	Hydraulic accumulators
	3rd	Pressure control valves
	4th	Pressure relief valves
13th	1st	Pressure regulation valves
	2nd	Direction control valves
	3rd	3/2DCV, 5/2DCV, 5/3DCV
	4th	Flow control valves Throttle valves
14th	1st	External and internal gear pumps Vane pump
	2nd	Radial piston pumps
	3rd	ISO Symbols for hydraulic components.
	4th	Actuators
	1st	Direct control of single acting cylinder

15th	2nd	Operationofdoubleactingcylinder
	3rd	Operationofdoubleactingcylinderwithmeteringinandmeteringoutcontrol
	4th	Comparisonofhydraulicandpneumatic system

S. panda

Teaching Faculty

HOD, MECHANICAL