

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF
ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN
Session-2022-2023

Discipline: Mechanical Engineering Engg. Semester: 5th

Name of the Teaching Faculty: Yadabanand Sambit Barik

Subject: HMI FP No. of Days/per week class allotted 04

Semester From Date: 15.09.22 To Date: 28.12.22 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
1	1	Hydraulic Turbines. Introduction
	2	Classification of hydraulic turbines.
	3	Impulse turbine
	4	Velocity diagram of Pelton turbine.
2	5	Workdone & Power developed by Pelton turbine.
	6	Efficiency of Pelton turbine.
	7	Numerical problems of Pelton turbine.
	8	Reaction turbine Introduction.
3	9	Difference between Impulse & Reaction turbine.
	10	Velocity diagram of Radially inward flow Reaction turbine.
	11	Workdone & efficiency of Francis turbine.
	12	Velocity diagram of Axial flow turbines.

Yadabharad Sambik Bantik

Signature of the Faculty

Subject: HMI FP No. of Days/per week class allotted 04

Semester From Date: 15.09.22 To Date: 22.12.22 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
	13	Work done & efficiency of Kaplan turbine.
	14	Numerical problems of Francis & Kaplan turbine.
	15	Previous year question discussion.
	16	Centrifugal pump. Construction & components.
	17	Working principle & classification of centrifugal pump.
	18	Suction head, Delivery head, Manometric head.
	19	Reciprocating pump... Construction & components.
	20	Classification of Reciprocating pump.
	21	Working principle, Power of Reciprocating pump.
	22	Distinguish between Centrifugal & Reciprocating pump.
	23	Derive discharge & slip of Reciprocating pump.
	24	Relation between slip & coefficient of discharge.

Yadabanand Sambir Banik

Signature of the Faculty

Subject: HMIFF No. of Days/per week class allotted 04

Semester From Date : 15.09.22 To Date : 22.12.22 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
	25	Solving numericals of Reciprocating pump.
	26	Hydraulics & pneumatic control system.
	27	Elements of FRL unit
	28	Difference between Hydraulic & Pneumatic system.
	29	Pressure control valves.
	30	Pressure relief valve
	31	Components of pressure regulation valves.
	32	Direction control valves
	33	ISO symbols of pneumatic components.
	34	Classification of pneumatic circuits.
	35	Direct operation of single acting pneumatic cylinder.
	36	Double acting pneumatic cylinders.

Yadabaranand Sambik Bant

Signature of the Faculty

Subject: HMFPP No. of Days/per week class allotted 04

Semester From Date : 15.09.22 To Date : 22.12.22 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
	37	Speed control of pneumatic cylinders. by metering in out etc.
	38	Actuators & types.
	39	Hydraulic control system.
	40	Pressure control valve.
	41	Merits & demerits of hydraulic system.
	42	Hydraulic accumulators.
	43	3/2 DCV, 5/2 DCV, 5/3 DCV.
	44	Pressure Control valve (PCV)
	45	Pressure Relief valve (PRV)
	46	Direction control valve
	47	Flow control valve (FCV)
	48	Pressure Regulation valve.

Yadabanand Sambik Banik

Signature of the Faculty

Subject: HMI FP No. of Days/per week class allotted 04

Semester From Date: 15.09.22 To Date: 22.12.22 No. of Weeks: 15

Week	Class Day	Theory /Practical Topics
	49	Flow control methods
	50	Fluid conditioners.
	51	Throttle valves.
	52	Fluid Power pumps
	53	External & internal gear pump, vane pump, Radial Piston pump
	54	ISO symbols of hydraulic components.
	55	Direct control of single acting cylinders.
	56	Double acting cylinders.
	57	Revision of turbines.
	58	Problems practice of Impulse turbine.
	59	Problem practice of Reaction turbine
	60	Previous year question discussion

Yadabirama Sambit Banta
Signature of the Faculty