

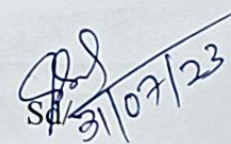
BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING



LESSON PLAN

SUBJECT: HYDRAULIC MACHINES & INDUSTRIAL FLUID POWER (TH 3)
FACULTY: PRASANTA KUMAR PADHI (PTGF)

ACCADEMIC SESSION: 2023-24
SEMESTER: 5TH
SEC: A


H O D (Mechanical Engg.)

BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
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LESSON PLAN

Discipline: MECHANICAL Engineering	Semester: 5thA		Name of the teaching faculty: P.K. PADHI
Subject: HYDRAULIC MACHINES & INDUSTRIAL FLUID POWER	No. of Days/ per week class allotted: 04 periods per week (Tue-1 period, Fri-1 period, Sat-2 periods)		Semester From Date: 01-08-2023 To Date: 30-11-2023 No. of weeks: 18 weeks
Week	Class Day	No of period available	Theory Topics
1 ST	01/08/2023	1	Introduction
	04/08/2023	1	1.1 Definition and classification of hydraulic turbines
	05/08/2023	2	1.2 Construction of impulse turbine Working principle of impulse turbine
2 ND	08/08/2023	1	1.2 Working principle of impulse turbine
	11/08/2023	1	1.3 Velocity diagram of moving blades
	12/08/2023	2	1.3 Work done of impulse turbine Derivation of various efficiencies of impulse turbine
3 RD	18/08/2023	1	1.3 Numerical on above
	19/08/2023	2	1.3 Numerical on above 1.5 Velocity diagram of moving blades and work done of Kaplan turbine

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LESSON PLAN

4 TH	22/08/2023	1	1.5 Derivation of various efficiencies of Kaplan turbine
	25/08/2023	1	1.6 Numerical on above
	26/08/2023	2	1.7 Distinguish between impulse turbine and reaction turbine
5 TH	29/08/2023	1	2.1 Construction and working principle of centrifugal pumps
	01/09/2023	1	2.2 work done of centrifugal pumps
	02/09/2023	2	2.2 derivation of various efficiencies of centrifugal pumps 2.3 Numerical on above
6 TH	05/09/2023	1	Monthly Class Test 1
	08/09/2023	1	3.1 Describe construction & working of single acting reciprocating pump
	09/09/2023	2	3.2 Describe construction & working of double acting reciprocating pump
7 th	12/09/2023	1	3.3 Derive the formula for power required to drive the pump (Single acting)
	15/09/2023	1	3.5 Define slip, State positive & negative slip
	16/09/2023	2	3.5 Establish relation between slip & coefficient of discharge

P. K. P. D. H.

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8 TH	22/09/2023	1	4.1 Elements –filter-regulator-lubrication unit
	23/09/2023	2	4.2 Pressure control valves 4.2.1 Pressure relief valves, 4.2.2 Pressure regulation valves
9 TH	26/09/2023	1	4.3 Direction control valves
	29/09/2023	1	4.3.1 3/2DCV, 5/2 DCV, 5/3DCV
	30/09/2023	2	4.3.2 Flow control valves, 4.3.3. Throttle valves
10 TH	03/10/2023	1	4.4 ISO Symbols of pneumatic components
	06/10/2023	1	4.5. Pneumatic circuits 4.5.1 Direct control of single acting cylinder
	07/10/2023	2	4.5.2 Operation of double acting cylinder 4.5.3 Operation of double acting cylinder with metering in and metering out control
11 TH	10/10/2023	1	5.1 Hydraulic system, its merit and demerits
	13/10/2023	1	5.2 Hydraulic accumulators
12 TH	17/10/2023	1	5.2.1 Pressure control valves
13 TH	27/10/2023	1	5.2.2 Pressure relief valves 5.2.3 Pressure regulation valves
14 TH	31/10/2023	1	5.3 Direction control valves 5.3.1 3/2DCV, 5/2 DCV, 5/3DCV
	03/11/2023	1	5.3.2 Flow control valves, 5.3.3 Throttle valves

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LESSON PLAN

	04/11/2023	2	5.4 Fluid power pumps 5.4.1 External and internal gear pumps
15 th	07/11/2023	1	5.4.2 Vane pump
	10/11/2023	1	5.4.3 Radial piston pumps
	11/11/2023	2	5.5 ISO Symbols for hydraulic components 5.6 Actuators
16 th	14/11/2023	1	5.7 Hydraulic circuits 5.7.1 Direct control of single acting cylinder
	17/11/2023	1	Monthly Class Test 2
	18/11/2023	2	5.7.2 Operation of double acting cylinder
17 th	21/11/2023	1	5.7.3 Operation of double acting cylinder with metering in and metering out control
	24/11/2023	1	5.8 Comparison of hydraulic and pneumatic system
18 th	28/11/2023	1	Revision & PYQ

p. k. p. d. h.

19 th	01/12/2023	1	Revision	ch-1&2
	02/12/2023	2	Revision	ch-3&4
	05/12/2023	1	Revision	ch-5
	08/12/2023	1	pyq	
	09/12/2023	2	pyq	