

HYDRAULIC MACHINES & INDUSTRIAL FLUID POWER
(TH-03)

LIST OF MONTH WISE AVAILABLE DAYS/ PERIODS

Month	Sept.	Oct	Nov	Dec	Jan	TOTAL
Month Wise No. of Academic Days Available	07	10	22	25		64
Month Wise No. of Academic Periods Available						

TOPIC WISE DISTRIBUTION PERIODS

Sl. No.	Name of the chapter as per the Syllabus	No. of Periods as per the Syllabus	No. of periods actually needed	Expected marks
01	HYDRAULIC TURBINES	15	14	20
02	CENTRIFUGAL PUMPS	05	06	20
03	PNEUMATIC SYSTEM	20	15	25
04	HYDRAULIC SYSTEM	20	24	30
	Total	60	59	95

**Signature of
Lecturer**

**Signature of
HOD I/C**

**Signature of
Academic I/C**

**Signature of
VP**

CHAPTER NO -01

HYDRAULIC TURBINES

Article No.	Name of the Article	Periods Needed	Lect. Sign With Date	Authenticity duly verified by H.O.D.	Sign. Of V.P.
1.1	Definition and classification of hydraulic turbines	01			
1.2	Construction and working principle of impulse turbine	01			
	continue	01			
1.3	Velocity diagram of moving blades, work done and derivation of various efficiencies of impulse turbine .	01			
	continue	01			
	problem	01			
1.4	Velocity diagram of moving blades, work done and derivation of various efficiencies of Francis turbine .	01			
	continue	01			
	problem	01			
1.5	Velocity diagram of moving blades, work done and derivation of various efficiencies of Kaplan turbine	01			
	continue	01			
1.6	Problem on above	01			
1.7	Distinguish between impulse turbine and reaction turbine	01			
	Problems	01			
	<i>Short Questions with Answer and Long Questions With Hint</i>	01			
	TOTAL	14			

CENTRIFUGAL PUMPS

Article No.	Name of the Article	Periods Needed	Lect. Sign With Date	Authenticity duly verified by H.O.D.	Sign. Of V.P.
2.1	Construction and working principle of centrifugal pumps	01			
	continue	01			

2.2	work done and derivation of various efficiencies of centrifugal pump	01			
2.3	Problem on above.	01			
	Cont.	01			
	<i>Short Questions with Answer and Long Questions With Hint</i>	01			
	TOTAL	06			

CHAPTER NO -03

RECIPROCATING PUMPS

Article No.	Name of the Article	Periods Needed	Lect. Sign With Date	Authenticity duly verified by H.O.D.	Sign. Of V.P.
3.1	Describe construction & working of single acting reciprocating pump	01			
	Cont...	01			
	problem	01			
3.2	Describe construction & working of double acting reciprocating pump.	01			
	Cont.....	01			
	problem	01			
3.3	Derive the formula for power required to drive the pump (Single acting & double acting	01			
3.4	Define slip.	01			
3.5	State positive & negative slip establish relation between slip & coefficient of discharge.				
	Cont.....	01			
3,6	problems	01			
	problems	01			
	<i>Short Questions With Answer and Long Questions With Hint</i>	01			
	TOTAL	12			

CHAPTER NO -05
HYDRAULIC CONTROL SYSTEM

Article No.	Name of the Article	Periods Needed	Lect. Sign With Date	Authenticity duly verified by H.O.D.	Sign. Of V.P.
5.1	Hydraulic system, its merit and demerits	01			
5.2	Hydraulic accumulators	01			
5.2.1	Pressure control valves	01			
	Cont....	01			
5.2.2	Pressure relief valves	01			
	Cont..	01			
5.2.3	Pressure regulation valves	01			
	Cont.....	01			
5.3	Direction control valves	01			
5.3.1	3/2DCV,5/2 DCV,5/3DCV	01			
5.3.2	Flow control valves	01			
5.3.3	Throttle valves	01			
5.4	Fluid power pumps	01			
5.4.1	External and internal gear pumps	01			
5.4.2	Vane pump	01			
5.4.3	Radial piston pumps	01			
5.5	ISO Symbols for hydraulic components.	01			
5.5	Actuators	01			
5.7	Hydraulic circuits	01			
5.7.1	Direct control of single acting cylinder	01			
5.7.2	Operation of double acting cylinder	01			
5.7.3	Operation of double acting cylinder with metering in and metering out control	01			
5.8	Comparison of hydraulic and pneumatic system	01			
	<i>Short Questions With Answer and Long Questions With Hint</i>	01			
	TOTAL	24			

SYLLABUS TO BE COVERED UP TO I.A-1,2 &3.

Learning Resources:

Sl. No.	Author	Title of the book	Publisher
01	DR.JAGDISH LAL H	HYDRAULIC MACHINES	METROPOLITAN BOOK CO
02	ANDREW H	HYDRAULICS	
03	K SHANMUGA, SUNDARAM	HYDRAULIC &PNEUMATIC CONTROL	S.CHAND
04	MAJUMDAR	HYDRAULIC &PNEUMATIC CONTROL	TMH
05	J.F. BLACKBURN, G.REETHOF &J.L SHEARER	FLUID POWER CONTROL	

