GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR
SESSION PLAN
5TH SEMESTER, BRANCH-MECHANICAL(GROUP 1)

HYDRAULIC MACHINES & INDUSTRIAL FLUID POWER(TH-3)

Name of the Faculty – ER. SANJAYA KUMAR SAHU

Topics to be taken				Actually taken		
SL NO & CHAPTER	**No. of Periods assigned by SCTE & VT**	**Details of the topics**	**PLANNED DATE**	**Details of the topics**	**ACTUAL DATE**	**Remarks**
1. HYDRAULIC TURBINES	**15**	1.1 Definition and classification of hydraulic turbines 1.2 Construction and working principle of impulse turbine. 1.3 Velocity diagram of moving blades, work done and derivation of various efficiencies of impulse turbine. 1.4 Velocity diagram of moving blades, work done and derivation of various efficiencies of Francis turbine. 1.5 Velocity diagram of moving blades, work done and derivation of various efficiencies of Kaplan turbine 1.6 Numerical on above 1.7 Distinguish between impulse turbine and reaction turbine.	**2.08.2023 TO 25.08.2023**	1.1 Definition and classification of hydraulic turbines 1.2 Construction and working principle of impulse turbine. 1.3 Velocity diagram of moving blades, work done and derivation of various efficiencies of impulse turbine. 1.4 Velocity diagram of moving blades, work done and derivation of various efficiencies of Francis turbine. 1.5 Velocity diagram of moving blades, work done and derivation of various efficiencies of Kaplan turbine 1.6 Numerical on above 1.7 Distinguish between impulse turbine and reaction turbine.	**2.08.2023** **3.08.2023** **4.08.2023** **7.08.2023** **9.08.2023** **10.08.2023** **11.08.2023** **14.08.2023** **16.08.2023** **17.08.2023** **18.08.2023** **21.08.2023** **23.08.2023** **24.08.2023** **25.08.2023**	

2. CENTRIFUGAL PUMPS	**5**	2.1 Construction and working principle of centrifugal pumps 2.2 work done and derivation of various efficiencies of centrifugal pumps. 2.3 Numerical on above	**28.08.2023 TO 7.09.2023**	2.1 Construction and working principle of centrifugal pumps 2.2 work done and derivation of various efficiencies of centrifugal pumps. 2.3 Numerical on above	**28.08.2023** **31.08.2023** **1.09.2023** **4.09.2023** **7.09.2023**	
3. RECIPROCATING PUMPS	**10**	3.1 Describe construction & working of single acting reciprocating pump. 3.2 Describe construction & working of double acting reciprocating pump. 3.3 Derive the formula foe power required to drive the pump (Single acting & double acting) 3.5 Define slip. 3.5 State positive & negative slip & establish relation between slip & coefficient of discharge. 3.6 Solve numerical on above	**8.09.2023 TO 27.09.2023**	3.1 Describe construction & working of single acting reciprocating pump. 3.2 Describe construction & working of double acting reciprocating pump. 3.3 Derive the formula foe power required to drive the pump (Single acting & double acting) 3.5 Define slip. 3.5 State positive & negative slip & establish relation between slip & coefficient of discharge. 3.6 Solve numerical on above	**8.09.2023** **11.09.2023** **13.09.2023** **14.09.2023** **15.09.2023** **18.09.2023** **21.09.2023** **22.09.2023** **25.09.2023** **27.09.2023**	

4. PNEUMATIC CONTROL SYSTEM	**15**	4.1Elements –filter-regulator-lubrication unit 4.2 Pressure control valves 4.2.1 Pressure relief valves 4.2.2 Pressure regulation valves 4.3 Direction control valves 4.3.1 3/2DCV,5/2 DCV,5/3DCV 4.3.2 Flow control valves 4.3.3. Throttle valves 4.4 ISO Symbols of pneumatic components 4.5. Pneumatic circuits 4 .5.1 Direct control of single acting cylinder 4.5.2 Operation of double acting cylinder 4.5.3 Operation of double acting cylinder with metering in and metering out control	**29.09.2023 TO 6.11.2023**	4.1Elements –filter-regulator-lubrication unit 4.2 Pressure control valves 4.2.1 Pressure relief valves 4.2.2 Pressure regulation valves 4.3 Direction control valves 4.3.1 3/2DCV,5/2 DCV,5/3DCV 4.3.2 Flow control valves 4.3.3. Throttle valves 4.4 ISO Symbols of pneumatic components 4.5. Pneumatic circuits 4 .5.1 Direct control of single acting cylinder 4.5.2 Operation of double acting cylinder 4.5.3 Operation of double acting cylinder with metering in and metering out control	**29.09.2023** **4.10.2023** **5.10.2023** **6.10.2023** **9.10.2023** **11.10.2023** **12.10.2023** **13.10.2023** **16.10.2023** **18.10.2023** **19.10.2023** **1.11.2023** **2.11.2023** **3.11.2023** **6.11.2023**	

5. HYDRAULIC CONTROL SYSTEM	**15**	5.1 Hydraulic system, its merit and demerits 5.2 Hydraulic accumulators 5.2.1 Pressure control valves 5. 2.2 Pressure relief valves 5.2.3 Pressure regulation valves 5.3 Direction control valves 5.3.1 3/2DCV,5/2 DCV,5/3DCV 5.3.2 Flow control valves 5.3.3 Throttle valves 5.4 Fluid power pumps 5.4.1 External and internal gear pumps 5.4.2 Vane pump 5.4.3 Radial piston pumps 5.5 ISO Symbols for hydraulic components. 5.6 Actuators 5.7 Hydraulic circuits 5.7.1 Direct control of single acting cylinder 5.7.2 Operation of double acting cylinder 5.7.3 Operation of double acting cylinder with metering in and metering out control 5.8 Comparison of hydraulic and pneumatic system	**8.11.2023 TO 8.12.2023**	5.1 Hydraulic system, its merit and demerits 5.2 Hydraulic accumulators 5.2.1 Pressure control valves 5. 2.2 Pressure relief valves 5.2.3 Pressure regulation valves 5.3 Direction control valves 5.3.1 3/2DCV,5/2 DCV,5/3DCV 5.3.2 Flow control valves 5.3.3 Throttle valves 5.4 Fluid power pumps 5.4.1 External and internal gear pumps 5.4.2 Vane pump 5.4.3 Radial piston pumps 5.5 ISO Symbols for hydraulic components. 5.6 Actuators 5.7 Hydraulic circuits 5.7.1 Direct control of single acting cylinder 5.7.2 Operation of double acting cylinder 5.7.3 Operation of double acting cylinder with metering in and metering out control 5.8 Comparison of hydraulic and pneumatic system	8.11.2023 9.11.2023 10.11.2023 15.11.2023 16.11.2023 17.11.2023 20.11.2023 22.11.2023 23.11.2023 24.11.2023 29.11.2023 30.11.2023 1.12.2023 4.12.2023 6.12.2023 7.12.2023 8.12.2023	

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GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR
SESSION PLAN
5TH SEMESTER, BRANCH-MECHANICAL(GROUP 2)

HYDRAULIC MACHINES & INDUSTRIAL FLUID POWER(TH-3)

Name of the Faculty – ER. JAGNYA PRASAD BEHERA

Topics to be taken				Actually taken		
SL NO & CHAPTER	**No. of Periods assigned by SCTE & VT**	**Details of the topics**	**PLANNED DATE**	**Details of the topics**	**ACTUAL DATE**	**Remarks**
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2. CENTRIFUGAL PUMPS	**5**	2.1 Construction and working principle of centrifugal pumps 2.2 work done and derivation of various efficiencies of centrifugal pumps. 2.3 Numerical on above	**29.08.2023 TO 8.09.2023**	2.1 Construction and working principle of centrifugal pumps 2.2 work done and derivation of various efficiencies of centrifugal pumps. 2.3 Numerical on above	**29.08.2023** **1.09.2023** **2.09.2023** **4.09.2023** **8.09.2023**	
3. RECIPROCATING PUMPS	**10**	3.1 Describe construction & working of single acting reciprocating pump. 3.2 Describe construction & working of double acting reciprocating pump. 3.3 Derive the formula foe power required to drive the pump (Single acting & double acting) 3.5 Define slip. 3.5 State positive & negative slip & establish relation between slip & coefficient of discharge. 3.6 Solve numerical on above	**9.09.2023 TO 26.09.2023**	3.1 Describe construction & working of single acting reciprocating pump. 3.2 Describe construction & working of double acting reciprocating pump. 3.3 Derive the formula foe power required to drive the pump (Single acting & double acting) 3.5 Define slip. 3.5 State positive & negative slip & establish relation between slip & coefficient of discharge. 3.6 Solve numerical on above	**9.09.2023** **11.09.2023** **12.09.2023** **15.09.2023** **16.09.2023** **18.09.2023** **22.09.2023** **23.09.2023** **25.09.2023** **26.09.2023**	

4. PNEUMATIC CONTROL SYSTEM	**15**	4.1Elements –filter-regulator-lubrication unit 4.2 Pressure control valves 4.2.1 Pressure relief valves 4.2.2 Pressure regulation valves 4.3 Direction control valves 4.3.1 3/2DCV,5/2 DCV,5/3DCV 4.3.2 Flow control valves 4.3.3. Throttle valves 4.4 ISO Symbols of pneumatic components 4.5. Pneumatic circuits 4 .5.1 Direct control of single acting cylinder 4.5.2 Operation of double acting cylinder 4.5.3 Operation of double acting cylinder with metering in and metering out control	**29.09.2023 TO 7.11.2023**	4.1Elements –filter-regulator-lubrication unit 4.2 Pressure control valves 4.2.1 Pressure relief valves 4.2.2 Pressure regulation valves 4.3 Direction control valves 4.3.1 3/2DCV,5/2 DCV,5/3DCV 4.3.2 Flow control valves 4.3.3. Throttle valves 4.4 ISO Symbols of pneumatic components 4.5. Pneumatic circuits 4 .5.1 Direct control of single acting cylinder 4.5.2 Operation of double acting cylinder 4.5.3 Operation of double acting cylinder with metering in and metering out control	**29.09.2023** **30.09.2023** **3.10.2023** **6.10.2023** **7.10.2023** **9.10.2023** **10.10.2023** **13.10.2023** **16.10.2023** **17.10.2023** **31.10.2023** **3.11.2023** **4.11.2023** **6.11.2023** **7.11.2023**	

5. HYDRAULIC CONTROL SYSTEM	**15**	5.1 Hydraulic system, its merit and demerits 5.2 Hydraulic accumulators 5.2.1 Pressure control valves 5. 2.2 Pressure relief valves 5.2.3 Pressure regulation valves 5.3 Direction control valves 5.3.1 3/2DCV,5/2 DCV,5/3DCV 5.3.2 Flow control valves 5.3.3 Throttle valves 5.4 Fluid power pumps 5.4.1 External and internal gear pumps 5.4.2 Vane pump 5.4.3 Radial piston pumps 5.5 ISO Symbols for hydraulic components. 5.6 Actuators 5.7 Hydraulic circuits 5.7.1 Direct control of single acting cylinder 5.7.2 Operation of double acting cylinder 5.7.3 Operation of double acting cylinder with metering in and metering out control 5.8 Comparison of hydraulic and pneumatic system	**10.11.2023 TO 8.12.2023**	5.1 Hydraulic system, its merit and demerits 5.2 Hydraulic accumulators 5.2.1 Pressure control valves 5. 2.2 Pressure relief valves 5.2.3 Pressure regulation valves 5.3 Direction control valves 5.3.1 3/2DCV,5/2 DCV,5/3DCV 5.3.2 Flow control valves 5.3.3 Throttle valves 5.4 Fluid power pumps 5.4.1 External and internal gear pumps 5.4.2 Vane pump 5.4.3 Radial piston pumps 5.5 ISO Symbols for hydraulic components. 5.6 Actuators 5.7 Hydraulic circuits 5.7.1 Direct control of single acting cylinder 5.7.2 Operation of double acting cylinder 5.7.3 Operation of double acting cylinder with metering in and metering out control 5.8 Comparison of hydraulic and pneumatic system	10.11.2023 11.11.2023 17.11.2023 18.11.2023 20.11.2023 21.11.2023 24.11.2023 25.11.2023 28.11.2023 1.12.2023 2.12.2023 4.12.2023 8.12.2023	

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