



ATME

College of Engineering



DEPARTMENT OF MECHANICAL ENGINEERING

Lesson Plan & Work-done Diary for AY: 2026-27, ODD Semester

Course with Code: Turbomachines –BME502				Faculty: Mr. Raghu		Semester & Section: 5th Sem		
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
1		Bridge class- 1	PPT					
2		Bridge class-2	PPT					
3		Bridge class-3	PPT					
4		Introduction Class	PPT					
5		Module-1: Introduction: Definition of turbo machine, parts of turbo machines	PPT					
6		Comparison with positive displacement machines, Classification	PPT					
7		Dimensionless parameters and their significance	PPT					
8		Unit and specific quantities	PPT					
9		Model studies and its numerical	Chalk					



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10		Numericals	Chalk					
11		Thermodynamics of fluid flow: Application of first and second law of thermodynamics to turbomachines, Efficiencies of turbo machines	PPT					
12		Static and Stagnation states, overall isentropic efficiency, stage efficiency (their comparison) and polytropic efficiency for both compression and expansion processes.	Chalk					
13		Reheat factor for expansion process. Simple Numerical on stage efficiency and polytropic efficiency	Chalk					
14		Numerical	Chalk					
15		Module-2: Energy exchange in Turbo machines: Euler's turbine equation	Chalk					
16		Alternate form of Euler's turbine equation	Chalk					
17		Degree of Reaction, utilization factor, Relation between degree of reaction and Utilization factor	Chalk					



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18		Velocity triangles for different values of degree of reaction, Quiz-1	PPT, SRS/MS form					
19		Problems on Turbines	Chalk					
20		Problems on Turbines	Chalk					
21		Problems on Turbines	Chalk					
22		General Analysis of Turbo machines: Radial flow compressors and pumps – general analysis	Chalk					
23		Expression for degree of reaction, velocity triangles, Effect of blade discharge angle on energy transfer and degree of reaction	Chalk					
24		General analysis of axial flow pumps and compressors, degree of reaction, velocity triangles	PPT					
25		Problems on compressor and blower	Chalk					
26		Problems on pumps	Chalk					
27		Module-4: Hydraulic Turbines: Classification, various efficiencies	PPT					



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28		Pelton Wheel – Principle of working, velocity triangles, design parameters, maximum efficiency,	Chalk					
29		Problems on Pelton Wheel	Chalk					
30		Problems on Pelton Wheel	Chalk					
31		Francis turbine – Principle of working, velocity triangles, design parameters	PPT					
32		Pelton Turbine Experiment	Chalk/Lab					
33		Problems on Francis turbine	Chalk					
34		Problems on Francis turbine	Chalk					
35		Kaplan and Propeller turbines: Principle of working, velocity triangles, design parameters Theory and types of Draft tubes	PPT					
36		Problems on Kaplan turbine, Quiz-2	Chalk, SRS/MS form					
37		Francis Turbine Experiment	Chalk/Lab					
38		Module-3: Steam Turbines: Classification, Single stage impulse	Chalk					



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		turbine, condition for maximum blade efficiency, stage efficiency						
39		Numericals on Single stage impulse turbine	Chalk					
40		Numericals on Single stage impulse turbine	Chalk					
41		KaplanTurbine Experiment	Chalk/Lab					
42		Need and methods of compounding	Chalk					
43		Multistage impulse turbine, expression for maximum utilization factor	Chalk					
44		Numericals on Multistage impulse turbine	Chalk					
45		Centrifugal Air blower Experiment	Chalk/Lab					
46		Reaction turbine: Parsons's turbine, condition for maximum utilization factor, reaction staging.	Chalk					
47		Numericals on Reaction turbine	Chalk					
48		Module-5: Centrifugal Pumps: Classification and parts of centrifugal pump, different heads and efficiencies of centrifugal pump,	PPT					



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49		Centrifugal Pump Experiment	Chalk/Lab					
50		Theoretical head – capacity relationship, Minimum speed for starting the flow, Maximum suction lift, Net positive suction head	Chalk					
51		Cavitation, Need for priming, Pumps in series and parallel. Problems on Centrifugal Pumps	Chalk					
52		Problems on Centrifugal Pumps, Quiz-3	Chalk, SRS/MS form					
53		Lab-Experiment repetition class	Chalk					
54		Lab IA	Chalk/Lab					
55		Centrifugal Compressors: Stage velocity triangles, slip factor, power input factor	PPT					
56		Stage work, Pressure developed, stage efficiency and surging	PPT					
57		Problems on Centrifugal compressors	Chalk					



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	Activity	Planned	Actual	Remarks
1	Theory Classes	50		
2	Demonstrations & Lab Visit/ Experiment conduction	7		
3	Assignments/ Quizzes/ report	3+3		
4	Tutorials/ Extra classes	--		
5	Internal Assessments	3		
6	ICT based Teaching. (% of usage in Curriculum)	40%		
Planning			Execution	
Faculty Signature:			Faculty Signature:	
HoD Signature:			HoD Signature:	