



Techno India NJR Institute of Technology

Academic Administration of Techno NJR Institute

Syllabus Deployment

Name of Faculty	: Mrs. Nisha Patel	Subject Code: 7ME4-22
Subject	: Thermal Engineering Lab-II	
Department	: Mechanical Engineering	Sem: VII
Total No. of Lectures Planned: 13		Max. Marks: 75(IA: 45, ETE: 30)

COURSE OUTCOMES:

At the end of this course students will be able to:

- CO1: Conduct constant speed and variable speed tests on IC engines and interpret their performance.
- CO2: Estimate energy distribution by conducting heat balance test on IC engines
- CO3: Evaluate performance parameters of steam power plant.
- CO4: Determine performance parameters of refrigeration and air-conditioning systems
- CO5: Evaluate the performance of turbo machines.

LAB No.	LIST OF EXPERIMENTS
1	To perform constant speed load test on a single cylinder diesel engine and to plot performance curves: indicated thermal efficiency, brake thermal efficiency, mechanical efficiency Vs. Brake power and heat balance sheet.
2	To estimate the Indicated Power, Friction Power and Mechanical Efficiency of a multi-cylinder Petrol Engine. (Morse Test)
3	Analysis of engine exhaust gases using Orsat apparatus /Engine gas analyzer.
4	Determination of coefficient of performance of Refrigeration cycle and tonnage capacity of refrigeration unit.
5	To determine the COP and tonnage capacity of a Mechanical heat pump.
6	To study various controls used in Refrigeration and Air conditioning system.
7	Study of commercial Refrigeration equipments like cooling towers, hermetically sealed compressors, automotive swash plate compressor etc.
8	To study automotive air conditioning system.

9	Determination of dryness fraction of steam.
10	Study and Performance of Simple Steam Turbine
11	Performance characteristics of Hydraulic turbines
12	Study and Performance of Gas Turbine Plant.
13	Performance characteristics of variable and rated speed centrifugal pump.

TEXT/REFERENCE BOOKS

1. MATHUR, M.L., AND SHARMA, R.P., A COURSE IN INTERNAL COMBUSTION ENGINES, DHANPAT RAI AND SONS, 2008.
2. GANESAN, V., GAS TURBINES 3RD EDITION, TATA MCGRAW HILL BOOK COMPANY, NEW DELHI, 2010.