LESSON PLAN

SPINTRONIC TECHNOLOGY & ADVANCE RESEARCH, TARABOI, KHURDHA

Name of Subject : **THERMAL ENGINEERING-II**
Subject Code : **TH:2**
Semester : 4th Semester
Branch : Mechanical Engg.
Name of faculty : Er. A. DAS

Sl. No.	Topic Name	No. of Classes Required	Cumulative No. of Classes
1	Introduction to Gas Turbines & Brayton Cycle	1	1
2	P-V and T-S Diagrams of Brayton Cycle	1	2
3	Classification of Gas Turbines (Open & Closed Cycle)	1	3
4	Comparison of Gas Turbine with I.C. Engines	1	4
5	Comparison of Gas Turbine with Steam Turbines	1	5
6	Applications and Limitations of Gas Turbines	1	6
7	Open Cycle Gas Turbine – Layout & Working	1	7
8	Closed Cycle Gas Turbine – Layout & Working	1	8
9	Jet Propulsion – Principle & Fuels	1	9
10	Turbojet, Ramjet & Rocket Engines – Working & Comparison	1	10
11	Formation of Steam under Constant Pressure	1	11
12	Industrial Uses of Steam	1	12
13	Steam Properties – Regions, Definitions & Terms	1	13
14	Steam Tables & Mollier Chart – Introduction	1	14
15	Properties of Wet Steam using Tables	1	15
16	Properties of Dry & Superheated Steam	1	16
17	Thermodynamic Processes using Steam Tables	1	17
18	Throttling & Polytropic Processes	1	18
19	Steam Calorimeters – Types & Working	1	19
20	Numerical Problems on Steam Properties & Calorimeters	1	20
21	Introduction & Classification of Steam Boilers	1	21
22	Cochran Boiler – Construction & Working	1	22
23	Babcock and Wilcox Boiler – Construction & Working	1	23
24	Water Tube vs Fire Tube Boilers	1	24
25	High Pressure Boilers – Lamont & Benson	1	25
26	Boiler Mountings – Safety & Control Devices	1	26
27	Boiler Accessories – Feed Pump, Economizer, Superheater	1	27
28	Boiler Performance Terms & Draught Systems	1	28
29	Introduction to Steam Nozzles	1	29
30	Flow of Steam through Nozzles	1	30
31	Velocity & Heat Drop – Analytical & Mollier Method	1	31
32	Discharge & Critical Pressure Ratio	1	32
33	Area Calculation for Maximum Discharge	1	33
34	Effect of Friction & Supersaturated Flow	1	34
35	Steam Jet Injector – Working	1	35
36	Numerical Problems on Steam Nozzles	1	36
37	Applications of Steam Nozzles	1	37
38	Revision of Steam Nozzles	1	38
39	Introduction & Classification of Steam Turbines	1	39
40	Impulse vs Reaction Turbines	1	40
41	De-Laval Turbine – Construction & Velocity Diagrams	1	41
42	Work Done, Efficiencies & Thrust in Turbines	1	42
43	Methods of Speed Reduction & Compounding	1	43
44	Parson’s Reaction Turbine – Working & Diagrams	1	44
45	Governing of Steam Turbines	1	45

REFERENCES:

1. A Course in Thermal Engineering – S. Domkundwar & C. P. Kothandaraman, Dhanpat Rai & Publication, New Delhi

2. Thermal Engineering – R. K. Rajput, Laxmi Publication New Delhi

3. Thermal Engineering – P. L. Ballaney, Khanna Publishers, 2002

4. Treatise on Heat Engineering in MKS and SI Units – V. P. Vasandani & D.S. Kumar, Metropolitan Book Co. Pvt. Ltd, New Delhi.