

Sr. No	LECTURE NO	Course Content
1	1	Introduction: Concept of Mass, Weight, Force, Pressure, Work, Power, Energy
2	2	Heat, Temperature, Specific Heat, Interchange of heat, Change of state, Mechanical equivalent of heat, Internal energy, Enthalpy
3	3	Entropy, Efficiency, Statement of Zeroth law, First law and Second Law of Thermodynamics.
4	4	Properties of Gases: Gas laws, Boyle's law, Charles's law, Combined gas law,
5	5	Gas constant, Internal energy, Relation between $C_p$ and $C_v$
6	6	Non flow process, Constant volume process,
7	7	constant pressure process, Isothermal process,
8	8	Polytropic process,
9	9	Adiabatic process
10	10	Fuels and Combustion: Introduction,
11	11	Classification, ,
12	12	Solid fuels, Liquid Fuels, Gaseous fuels.
13	13	LPG, CNG;
14	14	Bio fuels
15	15	Calorific values
16	16	Heat Engines: Thermal prime movers,
17	17	Elementary heat engines, sources of heat,
18	18	Working substances, Converting machines,.
19	19	Classification of heat engines, heat engine cycles,
20	20	Carnot cycle, Rankine cycle
21	21	Otto cycle, Diesel cycle
22	22	Power Producing Devices: Internal Combustion Engines :Introduction,
23	23	Classification, Engine details,
24	24	Otto and Diesel four stroke cycle ,
25	25	Comparison of Otto and Diesel cycle,
26	26	Indicated Power, Brake Power,
27	27	Efficiencies (Elementary Numerical Treatment)
28	28	Turbines: Introduction and Working Principles of Steam turbines,
29	29	Gas turbines, Hydraulic turbines (Elementary Treatment)
30	30	Power Absorbing Devices: Air Compressor: Introduction, Uses of Compressed air
31	31	Reciprocating Compressors, Operation of a compressor, Work for Compression,

32	32	Power required, Reciprocating compressor efficiency,
33	33	Multistage reciprocating compressor, Rotary compressors.
34	34	Pump: Introduction, Classification of pump, Reciprocating pump, Rotary Positive Displacement pump.
35	35	Centrifugal pump, axial flow pump, specific speed ,Concept of priming and cavitations
253 6	36	Refrigeration and Air conditioning: Introduction, Refrigerant, Types of refrigerators,
37	37	Vapour compression refrigeration system, Window and Split air conditioners
38	38	Power Transmission Methods and Devices: Introduction to Power transmission,
39	39	Belt, Rope, Chain and Gear drive.
40	40	Types and functioning of clutches, brakes and Dynamometer
41	41	Speed control: Introduction, Governors,
42	42	I.C. engine governing, Flywheel
43	43	Engineering Materials: Introduction, classifications,
44	44	Ferrous metallic and non ferrous metallic materials,
45	45	Non metallic and other materials
46	46	Welding ,Brazing and Soldering: Introduction of welding ,
47	47	Brazing and Soldering , Comparison of welding ,brazing and soldering
48	48	Mechanical Working of Metals and Press Operations: Hot and cold working of metals ,
49	49	Mechanical working operations, Press working operations,
50	50	A comparison between hot and cold working processes
51	51	Foundry Practice: Introduction, Pattern, Molding,
52	52	Molding materials, Cores, Casting methods
53	53	Steam and Steam Generator: Introduction , Formation of steam,
54	54	properties, use of steam tables,
55	55	Mollier charts (Elementary Numerical Treatment), Introduction and classification of steam generators
56	56	Cochran type, Lancashire boiler,
57	57	Babcock and Wilcox boiler, high pressure boiler
58	58	Boiler details, boiler performance, functioning of different mountings and accessories, Types of calorimeter
59	59	Heat Transfer: Introduction
60	60	Modes of heat transfer.