Discipline:		Semester:	Name of the Teaching Faculty:
MECHANICAL ENGG.		3RD	Er. DEVI PRASAD ACHARYA
Subject:		No. of days/per week class allotted: 03 Periods	Semester From date: 14/07/2025
THERMAL ENGG-I			To date:
			No of weeks: 15
MONTH	DATE	PERIODS	Theory Topics to be covered
			UNIT-I: Sources of Energy (10 Periods) Objective: Understand different types of energy sources and their applications.
JULY	18.07.2025	1	Introduction to Energy Sources
JULY	18.07.2025	2	Classification of Energy Sources: Renewable & Non-Renewable
JULY	19.07.2025	3	Fossil Fuels: Coal, Oil, Natural Gas (CNG, LPG)
JULY	19.07.2025	4	Solar Energy: Flat Plate & Concentrating Collectors
JULY	25.07.2025	5	Applications of Solar Energy
JULY	25.07.2025	6	Wind, Tidal & Ocean Thermal Energy
AUGUST	01.08.2025	7	Geothermal, Biogas, Biomass, Biodiesel
AUGUST	01.08.2025	8	Hydraulic & Nuclear Energy
AUGUST	02.08.2025	9	Fuel Cell Technology
AUGUST	02.08.2025	10	Recap & Quiz
			UNIT-II: Internal Combustion Engines (9 Periods) Objective: Understand working, parts, and classification of IC engines.
AUGUST	08.08.2025	11	Air Standard Cycle: Carnot, Otto, Diesel
AUGUST	08.08.2025	12	Combustion Engines: IC vs EC Engines
AUGUST	16.08.2025	13	Classification & Components of IC Engines
AUGUST	16.08.2025	14	Parts: Cylinder, Crankshaft, Connecting Rod, Piston, Valves
AUGUST	22.08.2025	15	Working of 4-Stroke Petrol & Diesel Engines
AUGUST	22.08.2025	16	Working of 2-Stroke Engines
AUGUST	29.08.2025	17	Comparison: 2-Stroke vs 4-Stroke, SI vs CI
AUGUST	29.08.2025	18	Valve & Port Timing Diagrams
AUGUST	30.08.2025	19	Unit Quiz & Recap
			UNIT-III: I.C. Engine Systems (9 Periods) Objective: Explain the auxiliary systems used in IC engines.
AUGUST	30.08.2025	20	Petrol Engine Fuel System & Carburetor
SEPTEMBER	06.09.2025	21	Diesel Engine Fuel System, Injectors, Pumps
SEPTEMBER	06.09.2025	22	Cooling Systems: Air & Water Cooling
SEPTEMBER	12.09.2025	23	Thermo Siphon & Radiator Circulation
SEPTEMBER	12.09.2025	24	Ignition Systems: Battery Coil & Magneto
SEPTEMBER	19.09.2025	25	Lubrication Systems: Types with Diagrams
SEPTEMBER	19.09.2025	26	Governing Methods & Applications
SEPTEMBER	20.09.2025	27	Supercharging Objectives
SEPTEMBER	20.09.2025	28	Recap & Evaluation

			UNIT-IV: Performance of I.C. Engines (9 Periods) **Objective: Measure and analyze engine performance.**
SEPTEMBER	26.09.2025	29	BP, IP, FP Concepts
SEPTEMBER	26.09.2025	30	Mean Effective Pressures, Efficiencies
OCTOBER	03.10.2025	31	Mechanical & Relative Efficiency
OCTOBER	03.10.2025	32	Performance Tests & Morse Test
OCTOBER	04.10.2025	33	Heat Balance Sheet
OCTOBER	04.10.2025	34	Determination of BP, IP, FP
OCTOBER	10.10.2025	35	Numerical Problem Practice - I
OCTOBER	10.10.2025	36	Numerical Problem Practice - II
OCTOBER	17.10.2025	37	Quiz + Recap
			UNIT-V: Air Compressors, Refrigeration & Air-Conditioning (8 Periods) **Objective: Understand compressors and HVAC systems.**
OCTOBER	17.10.2025	38	Functions & Types of Compressors
OCTOBER	18.10.2025	39	Single Stage Reciprocating Compressors
OCTOBER	18.10.2025	40	Multi-Stage Compressors & Advantages
OCTOBER	24.10.2025	41	Rotary Compressors: Centrifugal, Axial, Vane
OCTOBER	24.10.2025	42	Refrigeration: Air & Vapor Compression System
OCTOBER	31.10.2025	43	Air Conditioning Systems & Classifications
OCTOBER	31.10.2025	44	Comfort & Industrial AC; Summer, Winter, Year-Round Systems
NOVEMBER	01.09.2025	45	Final Review & Test

09/07/2025

ER. DEVI PRASAD ACHARYA
LECTURER STAGE-II, MECHANICAL ENGG.
OSME, KEONJHAR