PNS SCHOOL OF ENGINEERING & TECHNOLOGY,MARSHAGHAI,KENDRAPARA LESSON PLAN		
Discipline : Mechanical	Semester:3RD	Name of the Teaching Faculty : Er.Jyotirmay Jena
Subject : TE-I	No. of Days / per week class allotted : 4	Semester From date : 14.07.2025 to Date :15.11.2025 No. of Weesks : 15
Week	Class Day	Topics
1st	1st	Sources of Energy: Brief description of energy Sources: Classification of energy sources: Renewable, Non-Renewable;
	2nd	Fossil fuels, including CNG, LPG; Solar Energy:
	3rd	Flat plate and concentrating collectors & its applications
	4th	Solar Water Heater
2nd	1st	Photovoltaic Cell
	2nd	Solar Distillation
	3rd	Wind Energy
	4th	Tidal Energy
3rd	1st	Ocean Thermal Energy
	2nd	Geothermal Energy
	3rd	Biogas, Biomass
	4th	Bio-diesel
4th	1st	Hydraulic Energy
	2nd	Nuclear Energy
	3rd	Fuel cell.
	4th	REVIEW
5th	1st	Internal Combustion Engines: Assumptions made in air standard cycle analysis
	2nd	CARNOT CYCLE
	3rd	OTTO CYCLE
	4th	DIESEL CYCLE
6th	1st	Internal and external combustion engines
	2nd	Internal and external combustion engines
	3rd	NUMERICALS SOLVED
	4th	NUMERICALS SOLVED
7th	1st	advantages of I.C. engines over external combustion engines; classification of I.C. engines
	2nd	neat sketch of I.C. engine indicating component parts;
	3rd	Function of each part and materials used for the component parts
	4th	Working of four-stroke PETROL ENGINE
8th	1st	Working of 2-stroke PETROL ENGINE
	2nd	Working of 2-stroke DIESEL ENGINE
	3rd	Working of four-stroke DIESEL ENGINE
	4th	Comparison of two stroke and four stroke engines
9th	1st	Comparison of C.I. and S.I. engines;
	2nd	Valve timing and port timing diagrams for four stroke and two stroke engines.
	3rd	Principle of operation of simple and Zenith carburettors;
	4th	Fuel system of Diesel engines; Types of injectors and fuel pumps;

10th	1st	Cooling system: air cooling, water cooling system with thermo siphon method of
	2nd	Cooling system: air cooling, water cooling system with radiation & forced method of circulation
	3rd	Comparison of air cooling and water cooling system;
	4th	Ignition systems – Battery coil
11th	1st	Ignition systems – MAGNETO
	2nd	Types of lubricating systems used in I.C. engines with line diagram;
	3rd	Types of governing of I.C. engines – hit and miss method,
	4th	quantitative method, qualitative method and combination methods of governing
12th	1st	Objective of super charging
	2nd	Performance of I.C. Engines: Brake power; Indicated power; Frictional power;
	3rd	Brake and Indicated mean effective pressures
	4th	Brake and Indicated thermal efficiencies
13th	1st	Mechanical efficiency;Relative efficiency; Performance test
	2nd	Morse test;
	3rd	Heat balance sheet
	4th	Methods of determination of B,P., I.P. and F.P
14th	1st	Air Compressors: Functions of air compressor; Uses of compressed air; Types of air
	2nd	Single stage reciprocating air compressor - its construction and working
	3rd	Multi stage compressors – Advantages over single stage compressors
	4th	Rotary compressors: Centrifugal compressor, axial flow type compressor and vane type compressors.
15th	1st	Refrigeration & Air-conditioning: Refrigeration; Refrigerant; COP
	2nd	Air Refrigeration system: components, working & applications;Vapour Compression system: components, working & applications
	3rd	Air conditioning; Classification of Air- conditioning systems; Comfort and Industrial Air-Conditioning
	4th	Window Air- Conditioner; Summer Air-Conditioning system, Winter Air-Conditioning system, Year-round Air-Conditioning system.

Signature of Lecturer

11/07/25

Signature of H.O.D

11.07.25

Signature of Principal