Govt. Polytechnic, Nawada

Lesson Plan

Lecturer Name :- kundan kumar			No of Week- 22
Subject :- Power Engineering			Subject Code :-1625502
Semester :- Vth			Branch :- Mechanical Engg.

Unit-01 :-	**Introduction to I.C. Engine :**		
Sl. No.	Topic Covered	Duration requred in hrs.	Platform
1.1	Power Cycles - Carnot, Otto, Diesel, Dual, Brayton Cycle, representation on P-V, T-S diagram and Simple numerical on Otto cycle only.	3	Google Classroom/vcs/ youtube
1.2	Classification of I.C. Engines	3	Google Classroom/vcs/ youtube
1.3	Two stroke and four stroke Engines Construction and working, comparison, valve timing Diagram.	3	Google Classroom/vcs/ youtube
1.4	Brief description of I.C. Engine combustion (SI & CI), scavenging, preignition, detonation, supercharging, turbo charging, simple	3	Google Classroom/vcs/ youtube
1.5	List of fuel, lubricant additives and their adv	3	Google Classroom/vcs/ youtube
Classl Test		2	GOOGLE FORM
Unit-02 :-	**I.C. Engine Testing and Pollution Control :**		
Sl. No.	Topic Covered	Duration requred in hrs.	Platform
2.1	Engine Testing - I.P., B.P. Mechanical, Thermal relative and volumetric efficiency, BSFC, Heat Balance sheet.	4	Google Classroom/vcs/ youtube
2.2	Morse Test, Motoring test	4	Google Classroom/vcs/ youtube
2.3	Pollution Control - Pollutants in exhaust gases of petrol and diesel engines, their effects on environment, exhaust gas analysis for petrol and diesel engine. Catalytic	4	Google Classroom/vcs/ youtube
Classl Test		2	GOOGLE FORM
Unit-03 :-	**AIR COMPRESSER :**		
Sl. No.	Topic Covered	Duration requred in hrs.	Platform

3.1	Introduction	3	Google Classroom/vcs/ youtube
3.2	uses of compressed air - Classification of air compressors - Definition: - Compression ratio - Compressor capacity	3	Google Classroom/vcs/ youtube
3.3	Reciprocating air compressor - Construction and working of single stage and two stage compressor - Efficiency: - Volumetric , Isothermal & Mechanical (only simple numerical) - Advantages of multi staging.	3	Google Classroom/vcs/ youtube
3.4	Rotary Compressor - Construction and working of screw, lobe, vane, centrifugal compressors (No numerical) - Comparison and applications of reciprocating and rotary compressors - Purification of air to remove oil, moisture and dust	3	Google Classroom/vcs/ youtube
3.5	Methods of energy saving in air compressors	3	Google Classroom/vcs/ youtube
Classl Test		2	GOOGLE FORM
Unit-04 :-	**Gas Turbine And Jet Propulsion :**		
Sl. No.	Topic Covered	Duration requred in hrs.	Platform
4.1	Classification and applications of gas turb	3	Google Classroom/vcs/ youtube
4.2	Constant volume and constant pressure gas turbines. - Closed cycle and open cycle gas turbines and their comparison.	3	Google Classroom/vcs/ youtube
4.3	Methods to improve thermal efficiency of gas turbine- Regeneration, inter- cooling, reheating using T- Ø	3	Google Classroom/vcs/ youtube
4.4	Jet Propulsion - Principles of turbojet, turbo propeller, Ram jet.	3	Google Classroom/vcs/ youtube
4.5	Rocket propulsion - Solid propellants and liquid propellants, components of liquid propellants rocket engine.	3	Google Classroom/vcs/ youtube
Classl Test		2	GOOGLE FORM

Unit-05 :-	**Refrigeration and Air- Conditioning :**		
Sl. No.	Topic Covered	Duration requred in hrs.	Platform
5.1	Introduction - COP of Heat Pump and refrigerator, Tonnes of Refrigeration.	3	Google Classroom/vcs/ youtube
5.2	Vapour compression system - Vapour compression refrigeration cycle, components of Vapour Compression Cycle. Applications- Water cooler,Domestic refrigerator	3	Google Classroom/vcs/ youtube
5.3	Psychrometry - Properties of air, psychrometric chart & processes (No Numerical)	3	Google Classroom/vcs/ youtube
5.4	Air conditioning systems - Definition of Air conditioning and classification of Air conditioning	3	Google Classroom/vcs/ youtube
Classl Test		2	GOOGLE FORM