SYNERGY POLYTECHNIC, BBSR

The Lesson Plan

Discipline: Mechanical Engg	Semester: 3rd	Name of the Teaching Faculty: Soumikh Roy
Subject: Thermal Engineering I	No of Days/per week class allotted: 4	Semester from Date: 01/08/2023 to Date: 31/08/2023 No of Weeks: 5
Week	Class Day	Theory/Practical Topics
1st	1st	Different types of Thermodynamic Systems
	2nd	Thermodynamic properties of a system (Part one)
	3rd	Thermodynamic properties of a system (Part Two)
	4th	Study of Intensive and extensive properties
	5th	
2nd	1st	Define thermodynamic processes, path, cycle , state
	2nd	Understand the concept of path function, point function
	3rd	Thermodynamic Equilibrium concept
	4th	Quasi-static Process
	5th	
3rd	1st	Conceptual explanation of energy and its sources
	2nd	Comparison between the heat and work
	3rd	Mechanical Equivalent of Heat & its formula
	4th	Work transfer and Displacement work
	5th	
4th	1st	Learn Zeroth law of thermodynamics
	2nd	State & explain First law of thermodynamics
	3rd	Limitations of First law of thermodynamics
	4th	Steady flow energy equation and its implementation
	5th	
5th	1st	Second law of thermodynamics (Claucius Statement)
	2nd	2nd law of thermodynamics (Kelvin Plank statement)
	3rd	2nd law of thermodynamics Derivations
	4th	2nd law of thermodynamics (Numericals)
	5th	

Sign of Faculty

HOD

Principal 28/7/23

SYNERGY POLYTECHNIC, BBSR

The Lesson Plan

Descipline: Mechanical Engg	Semester: 3rd	Name of the Teaching Faculty: Soumikh Roy
Subject: Thermal Engineering I	No of Days/per week class allotted: 4	Semester from Date: 01/09/2023 to Date: 30/09/2023 No of Weeks: 4
Week	Class Day	Theory/Practical Topics
1st	1st	Laws of perfect gas: Boyle's law, Charle's law
	2nd	
	3rd	
	4th	
	5th	
2nd	1st	Laws of perfect gas: Avogadro's law, Dalton's law
	2nd	Guy lussac Law, General gas equation
	3rd	Characteristic gas constant, Universal gas constant
	4th	Explain specific heat of gas (Cp and Cv)
	5th	
3rd	1st	Relation between Cp & Cv
	2nd	Enthalpy of a gas
	3rd	Work done during a non- flow process
	4th	Application of 1st law in various non flow process
	5th	
4th	1st	Free expansion & throttling process
	2nd	Explain & classify I.C engine (Part One)
	3rd	Explain & classify I.C engine (Part Two)
	4th	I.C Engine Termonology
	5th	
5th	1st	Bore, dead centers, stroke volume, piston speed &RPM
	2nd	Working principle of 2-stroke SI Engine
	3rd	Working principle of 2-stroke CI Engine
	4th	Derivation of 2-stroke CI Engine
	5th	

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SYNERGY POLYTECHNIC, BBSR

The Lesson Plan

Descipline: Mechanical Engg	Semester: 3rd	Name of the Teaching Faculty: Soumikh Roy
Subject: Thermal Engineering I	No of Days/per week class allotted: 4	Semester from Date: 1/10/2023 to Date: 31/12/2023 No of Weeks: 4
Week	Class Day	Theory/Practical Topics
1st	1st	Derivation of 2-stroke SI Engine
	2nd	Study the working principle of 4- stroke engine S.I
	3rd	Study the working principle of 4- stroke engine C.I
	4th	Differentiate between 2-stroke & 4- stroke engine
	5th	
2nd	1st	Study of Carnot cycle
	2nd	Derivation of Carnot cycle
	3rd	Numerical of Carnot cycle
	4th	Study of Otto cycle
	5th	
3rd	1st	Derivation of Otto cycle
	2nd	Numerical of Otto cycle
	3rd	Study of Diesel cycle
	4th	Derivation of Diesel cycle
	5th	
4th	1st	College Holiday
	2nd	College Holiday
	3rd	College Holiday
	4th	Numerical of Diesel cycle
	5th	
5th	1st	Study of Dual cycle
	2nd	Derivation & numerical of Dual cycle
	3rd	
	4th	
	5th	

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SYNERGY POLYTECHNIC, BBSR

ne Lesson Plan

Descipline: Mechanical Engg	Semester: 3rd	Name of the Teaching Faculty: Soumikh Roy
Subject: Thermal Engineering I	No of Days/per week class allotted: 4	Semester from Date: 01/11/2023 to Date: 30/11/2023 No of Weeks: 5
Week	Class Day	Theory/Practical Topics
1st	1st	Define Fuel
	2nd	Classification of Fuel
	3rd	Types of fuel used in modern days
	4th	
	5th	
2nd	1st	Application of different types of fuel in Automobiles
	2nd	Application of different types of fuel in industries
	3rd	Heating values of fuel
	4th	Numerical on Heating values of fuel
	5th	
3rd	1st	Quality of I.C engine fuels Octane number
	2nd	Brief understanding on Octane number
	3rd	Quality of I.C engine fuels Cetane number
	4th	Brief understanding on Cetane number
	5th	
4th	1st	Revision Thermodynamic concept
	2nd	Revision of work and heat energy
	3rd	Revision of Zeroth law of thermodynamics
	4th	Revision of 1st Law of thermodynamics
	5th	
5th	1st	Revision of Second law of thermodynamics
	2nd	Revision of Laws of perfect gas
	3rd	Revision of 2-stroke & 4- stroke engine (SI & CI)
	4th	Revision of Gas Power Cycles
	5th	

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