

Dicipline:	Mechanical	Semester:	3rd	Name of the Teaching Faculty: Satyakam Acharya	
Subject:	Thermal Engg - 1	No of Days/Week Class Allotted:	4	Semester From date: 15/09/22 To date 21/01/23	No. of Weeks:
WEEK	Class Day	Theory Topics			
1st	1st	Thermodynamic systems (closed, open, isolated)			
	2nd	Thermodynamic properties of a system			
	3rd	Intensive properties with examples			
	4th	Extensive properties with examples.			
	5th				
2nd	1st	Definition of thermodynamic processes, path cycle			
	2nd	Definition of state, path function, point f ⁿ			
	3rd	Thermodynamic equilibrium			
	4th	Quasi-static process			
	5th				
3rd	1st	Conceptual explanation of energy & its sources.			
	2nd	Work, heat & comparison between two			
	3rd	Mechanical equivalent of heat			
	4th	Work transfer and simple numericals.			
	5th				

Theory Topics

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WEEK	Class Day	Theory Topics
4th	1st	Displacement work
	2nd	State & explain zeroth law of thermodynamics
	3rd	State & explain 1st law of thermodynamics
	4th	Limitation of 1st law of thermodynamics
	5th	
5th	1st	Application of 1st law of thermodynamics
	2nd	Steady flow energy eqn. & its application to turbine & compressor.
	3rd	2nd law of thermodynamics
	4th	Application of 2nd law in heat engine, heat pump
	5th	
6th	1st	Application of 2nd law to refrigerator
	2nd	Determination of efficiencies & C.O.P.
	3rd	Solve simple numericals
	4th	Laws of perfect gas
	5th	

Discipline:	Mechanical	Semester:	3rd	Name of the Teaching Faculty:	Satyakam Acharya
Subject:	Thermal Engg-1	No of Days/Week Class Allotted:	1	Semester From date:	15/09/22 To date 21/01/23
		No. of Weeks:			
WEEK	Class Day	Theory Topics			
7th	1st	Boyle's law, Charles's law, Avogadro's law			
	2nd	Dalton's law of partial pressure, Gay Lussac law			
	3rd	General gas eqn, characteristic gas constant Univ. gas constant.			
	4th	Explain specific heat of a gas (C_p & C_v)			
	5th				
8th	1st	Relation between C_p & C_v			
	2nd	Enthalpy of a gas			
	3rd	Work - done during a non-flow process			
	4th	Application of 1st law of thermodynamics			
	5th				
9th	1st	Non flow process (Isothermal, Isobaric, Isentropic, polytropic process)			
	2nd	Solve simple numericals.			
	3rd	Free expansion & throttling process			
	4th	Solve simple numericals			
	5th				

WEEK	Class Day	Theory Topics
10th	1st	Explain I.C engine
	2nd	classify I.C engine
	3rd	Terminology of I.C engine
	4th	Explain working principle of 2-stroke C.I engine
	5th	Explain working principle of 4-stroke C.I engine
11th	1st	Explain 2-stroke S.I engine
	2nd	Explain 2-stroke C.I engine.
	3rd	Differentiate between 2-stroke & 4-stroke C.I engine.
	4th	Differentiate between 2-stroke & 4-stroke S.I engine.
	5th	
12th	1st	Carnot cycle
	2nd	Otto cycle
	3rd	Diesel cycle
	4th	Dual cycle
	5th	

Name: _____
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ARYAN SCHOOL OF ENGINEERING & TECHNOLOGY

Subject: Mech.	Semester: 3rd	Name of the Teaching Faculty: Satyaran Acharya	
Subject: T.E-1	No of Days/Week Class Allotted: 1	Semester From date: 15/09/22 To date: 21/01/23	No. of Weeks:

WEEK	Class Day	Theory Topics
13 th	1st	Solve simple numericals
	2nd	Definition of fuel
	3rd	Types of fuel
	4th	Application of different types of fuel
	5th	
14 th	1st	Heating values of fuel
	2nd	Discussions of previous topics
	3rd	Quality of I.C engine of fuels
	4th	Octane number
	5th	
15	1st	Cetane number
	2nd	Revision class
	3rd	Discussion of prev. topic
	4th	Solve simple numericals.
	5th	