GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR
SESSION PLAN
3RD SEMESTER, BRANCH-MECHANICAL(GROUP 1)

THERMAL ENGINEERING-1(TH-4)

Name of the Faculty –ER. SIBASISH SAHU

Details to be taken				Actually taken		
SL NO & CHAPTER	**No. of Periods assigned by SCTE & VT**	**Details of the topics**	**PLANNED DATE**	**Details of the topics**	**ACTUAL DATE**	**Remarks**
1. Thermodynamic concept & Terminology	**12**	1.1 Thermodynamic Systems (closed, open, isolated) 1.2 Thermodynamic properties of a system (pressure, volume, temperature, entropy, enthalpy, Internal energy and units of measurement). 1.3 Intensive and extensive properties 1.4 Define thermodynamic processes, path, cycle , state, path function, point function. 1.5 Thermodynamic Equilibrium. 1.6 Quasi-static Process. 1.7 Conceptual explanation of energy and its sources 1.8 Work , heat and comparison between the two. 1.9 Mechanical Equivalent of Heat. 1.10 Work transfer, Displacement work	**1/08/2023 TO 22/08/2023**	1.1 Thermodynamic Systems (closed, open, isolated) 1.2 Thermodynamic properties of a system (pressure, volume, temperature, entropy, enthalpy, Internal energy and units of measurement). 1.3 Intensive and extensive properties 1.4 Define thermodynamic processes, path, cycle , state, path function, point function. 1.5 Thermodynamic Equilibrium. 1.6 Quasi-static Process. 1.7 Conceptual explanation of energy and its sources 1.8 Work , heat and comparison between the two. 1.9 Mechanical Equivalent of Heat. 1.10 Work transfer, Displacement work	**1/08/2023** **2/08/2023** **4/08/2023** **5/08/2023** **8/08/2023** **9/08/2023** **11/08/2023** **12/08/2023** **16/08/2023** **18/08/2023** **19/08/2023** **22/08/2023**	

2. Thermodynamics	**12**	2.1 State & explain Zeroth law of thermodynamics. 2.2 State & explain First law of thermodynamics. 2.3 Limitations of First law of thermodynamics 2.4Application of First law of Thermodynamics (steady flow energy equation and its application to turbine and compressor) 2.4 Second law of thermodynamics (Claucius & Kelvin Plank statements). 2.5 Application of second law in heat engine, heat pump, refrigerator & determination of efficiencies & C.O.P (solve simple numerical	**23/08/2023 TO 16/09/2023**	2.1 State & explain Zeroth law of thermodynamics. 2.2 State & explain First law of thermodynamics. 2.3 Limitations of First law of thermodynamics 2.4Application of First law of Thermodynamics (steady flow energy equation and its application to turbine and compressor) 2.4 Second law of thermodynamics (Claucius & Kelvin Plank statements). 2.5 Application of second law in heat engine, heat pump, refrigerator & determination of efficiencies & C.O.P (solve simple numerical	**23/08/2023** **25/08/2023** **26/08/2023** **29/08/2023** **1/09/2023** **2/09/2023** **8/09/2023** **9/09/2023** **12/09/2023** **13/09/2023** **15/09/2023** **16/09/2023**	

3. Properties Processes of perfect gas	**10**	3.1 Laws of perfect gas: Boyle's law, Charle's law, Avogadro's law, Dalton's law of partial pressure, Guy lussac law, General gas equation, characteristic gas constant, Universal gas constant. 3.2 Explain specific heat of gas (Cp and Cv) 3.3 Relation between Cp & Cv. 3.4 Enthalpy of a gas. 3.5 Work done during a non- flow process. 3.6 Application of first law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytrophic process) 3.6 Solve simple problems on above. 3.7 Free expansion & throttling process.	**20/09/2023 TO 6/10/2023**	3.1 Laws of perfect gas: Boyle's law, Charle's law, Avogadro's law, Dalton's law of partial pressure, Guy lussac law, General gas equation, characteristic gas constant, Universal gas constant. 3.2 Explain specific heat of gas (Cp and Cv) 3.3 Relation between Cp & Cv. 3.4 Enthalpy of a gas. 3.5 Work done during a non- flow process. 3.6 Application of first law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytrophic process) 3.6 Solve simple problems on above. 3.7 Free expansion & throttling process.	**20/09/2023** **22/09/2023** **23/09/2023** **26/09/2023** **27/09/2023** **29/09/2023** **30/09/2023** **3/10/2023** **4/10/2023** **6/10/2023**	

4. Internal combustion engine	**8**	4.1 Explain & classify I.C engine. 4.2 Terminology of I.C Engine such as bore, dead centers, stroke volume, piston speed &RPM. 4.3 Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine. 4.4 Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine.	**7/10/2023 TO 1/11/2023**	4.1 Explain & classify I.C engine. 4.2 Terminology of I.C Engine such as bore, dead centers, stroke volume, piston speed &RPM. 4.3 Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine. 4.4 Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine.	**7/10/2023** **10/10/2023** **11/10/2023** **13/10/2023** **17/10/2023** **18/10/2023** **31/10/2023** **1/11/2023**	
5. Gas Power Cycle	**10**	5.1 Carnot cycle 5.2 Otto cycle. 5.3 Diesel cycle. 5.4 Dual cycle. 5.5 Solve simple numerical	**2/11/2023 TO 18/11/2023**	5.1 Carnot cycle 5.2 Otto cycle. 5.3 Diesel cycle. 5.4 Dual cycle. 5.5 Solve simple numerical	**2/11/2023** **3/11/2023** **4/11/2023** **7/11/2023** **8/11/2023** **10/11/2023** **11/11/2023** **15/11/2023** **17/11/2023** **18/11/2023**	

6. Fuels and Combustion	**8**	6.1 Define Fuel. 6.2 Types of fuel. 6.3 Application of different types of fuel. 6.4 Heating values of fuel. 6.5 Quality of I.C engine fuels Octane number, Cetane number	**21/11/2023 TO 2/12/2023**	6.1 Define Fuel. 6.2 Types of fuel. 6.3 Application of different types of fuel. 6.4 Heating values of fuel. 6.5 Quality of I.C engine fuels Octane number, Cetane number REVISION-	**21/11/2023** **22/11/2023** **24/11/2023** **25/11/2023** **28/11/2023** **29/11/2023** **1/12/2023** **2/12/2023** **6/12/2023** **8/12/2023**	

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GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR
SESSION PLAN
3RD SEMESTER, BRANCH-MECHANICAL(GROUP 2)

THERMAL ENGINEERING-1(TH-4)

Name of the Faculty –ER. SANJAYA KUMAR SAHU

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