


GOVT. POLYTECHNIC BOLANGIR
LESSON PLAN

Discipline : Mechanical	Semester:3rd	Name of the Teaching Faculty : Manabhanjan Bhoi
Subject :TE-I	No. of Days / per week class allotted : 4	Semester From date : 01.07.2024 to Date :08.11.2024 No. of Weesks : 18
Week	Class Day	Topics
Dt. 01.07.2024 to Dt.06.07.2024	1st	Thermodynamic Systems (closed, open, isolated)
	2nd	Thermodynamic properties of a system (pressure, volume, temperature, entropy)
	3rd	enthalpy, Internal energy and units of measurement).
	4th	Intensive and extensive properties
Dt. 08.07.2024 to Dt.13.07.2024	1st	Thermodynamic Equilibrium.
	2nd	Quasi-static Process.
	3rd	Conceptual explanation of energy and its sources
	4th	Work , heat and comparison between the two.
Dt. 15.07.2024 to Dt.20.07.2024	1st	Mechanical Equivalent of Heat.
	2nd	Work transfer, Displacement work
	3rd	State & explain Zeroth law of thermodynamics.
	4th	State & explain First law of thermodynamics
Dt. 22.07.2024 to Dt.27.07.2024	1st	Limitations of First law of thermodynamics
	2nd	steady flow energy equation and its application to turbine and compressor)
	3rd	Second law of thermodynamics (Claucius & Kelvin Plank statements).
	4th	Application of second law in heat engine, heat pump, refrigerator & determination of efficiencies & C.O.P
Dt. 29.07.2024 to Dt.03.08.2024	1st	solve simple numerical on 2nd law of thermodynamics
	2nd	solve simple numerical on 2nd law of thermodynamics
	3rd	solve simple numerical on 2nd law of thermodynamics
	4th	solve simple numerical on 2nd law of thermodynamics
Dt. 05.08.2024 to Dt.10.08.2024	1st	Laws of perfect gas:
	2nd	Explain specific heat of gas (Cp and Cv)
	3rd	Relation between Cp & Cv.
	4th	Enthalpy of a gas.
Dt. 12.08.2024 to Dt.17.08.2024	1st	Work done during a non- flow process.
	2nd	3.6 Application of first law of thermodynamics to various non flow process (Isothermal, Isobaric, Isentropic and polytrophic process)
	3rd	Solve simple problems on above.
	4th	Free expansion & throttling process.
Dt. 19.08.2024 to Dt.24.08.2024	1st	Numerical problems on various thermodynamic process
	2nd	Numerical problems on various thermodynamic process
	3rd	Numerical problems on various thermodynamic process
	4th	Numerical problems on various thermodynamic process
Dt. 26.08.2024 to Dt.31.08.2024	1st	Explain & classify I.C engine.
	2nd	Terminology of I.C Engine such as bore, dead centers, stroke volume, piston speed &RPM.
	3rd	Explain the working principle of 2-stroke & 4- stroke engine C.I & S.I engine.
	4th	Differentiate between 2-stroke & 4- stroke engine C.I & S.I engine.
Dt. 02.09.2024 to Dt.07.09.2024	1st	Carnot cycle
	2nd	Carnot cycle
	3rd	Numericals on carnot cycle
	4th	Numericals on carnot cycle
Dt. 09.09.2024 to Dt.14.09.2024	1st	Otto cycle.
	2nd	Otto cycle.
	3rd	Numericals on Otto cycle
	4th	Numericals on Otto cycle

Dt. 16.09.2024 to Dt.21.09.2024	1st	Diesel cycle.
	2nd	Diesel cycle.
	3rd	Dual cycle
	4th	Dual cycle
Dt. 23.09.2024 to Dt.28.09.2024	1st	Numericals on diesel cycle
	2nd	Numericals on diesel cycle
	3rd	Solve simple numerical on dual cycle
	4th	Solve simple numerical on dual cycle
Dt. 30.09.2024 to Dt.05.10.2024	1st	Solve simple numerical on dual cycle
	2nd	Define fuel, Types of fuel
	3rd	Types of fuel
	4th	Application of different types of fuel
Dt. 14.10.2024 to Dt.19.10.2024	1st	Application of different types of fuel
	2nd	Heating values of fuel
	3rd	Quality of I.C engine fuels Octane number
	4th	Quality of I.C engine fuels Cetane number
Dt. 21.10.2024 to Dt.26.10.2024	1st	Revision
	2nd	Revision
	3rd	Revision
	4th	Revision
Dt. 28.10.2024 to Dt.02.11.2024	1st	Q & A Discussion
	2nd	Q & A Discussion
	3rd	Q & A Discussion
	4th	Q & A Discussion
Dt. 04.11.2024 to Dt.08.11.2024	1st	Doubt clearing
	2nd	Doubt clearing
	3rd	Q & A discussion
	4th	Doubt clearing


 27/09/24
 Signature of
 Concerned Faculty


 27.09.24
 HOD (I/C)