

UTKAL GOURAV MADHUSUDAN INSTITUTE OF TECHNOLOGY, RAYAGADA
Academic Lesson Plan for Winter Semester- 2022

Name of the Teaching Faculty: Er. Rajendra Mohanty Department: Mechanical Engineering
Semester: 3rd Subject: THERMAL ENGINEERING-1
No. of periods per week: 4 Total Periods: 60
End Semester Exam: 80 Class test: 20
Total Marks: 100 Theory - 4

Sl. No.	Week	Period	Topic to be covered
1.	1 st	1 st	Thermodynamic Systems
2.		2 nd	Thermodynamic properties of a system
3.		3 rd	Do
4.		4 th	Intensive and extensive properties
5.	2 nd	1 st	Define thermodynamic processes.
6.		2 nd	Thermodynamic Equilibrium.
7.		3 rd	Quasi-static Process.
8.		4 th	Conceptual explanation of energy and its sources
9.	3 rd	1 st	Work , heat and comparison between the two.
10.		2 nd	Mechanical Equivalent of Heat.
11.		3 rd	Work transfer, Displacement work
12.		4 th	Do
13.	4 th	1 st	State & explain Zeroth law of thermodynamics.
14.		2 nd	State & explain First law of thermodynamics.
15.		3 rd	Limitations of First law of thermodynamics
16.		4 th	Application of First law of Thermodynamics
17.	5 th	1 st	Do
18.		2 nd	Do
19.		3 rd	Second law of thermodynamics
20.		4 th	Application of second law in heat engine,
21.	6 th	1 st	heat pump, refrigerator
22.		2 nd	determination of efficiencies & C.O.P
23.		3 rd	Solve Numerical
24.		4 th	Do
25.	7 th	1 st	Laws of perfect gas
26.		2 nd	Do
27.		3 rd	Explain specific heat of gas
28.		4 th	Relation between Cp& Cv.
29.	8 th	1 st	Enthalpy of a gas.
30.		2 nd	Work done during a non- flow process.
31.		3 rd	Application of first law of thermodynamics
32.		4 th	to various non flow process
33.	9 th	1 st	Solve simple problems on above.
34.		2 nd	Free expansion & throttling process.

35.		3 rd	Explain & classify I.C engine.
36.		4 th	Do
37.	10 th	1 st	Terminology of I.C Engine
38.		2 nd	Do
39.		3 rd	Explain the working principle of 2-stroke & 4- stroke engine
40.		4 th	Do
41.	11 th	1 st	Differentiate between 2-stroke & 4- stroke engine
42.		2 nd	Do
43.		3 rd	Carnot cycle
44.		4 th	Otto cycle.
45.	12 th	1 st	Do
46.		2 nd	Diesel cycle.
47.		3 rd	Do
48.		4 th	Dual cycle.
49.	13 th	1 st	Do
50.		2 nd	Solve simple numerical.
51.		3 rd	Do
52.		4 th	Do
53.	14 th	1 st	Define Fuel.
54.		2 nd	Types of fuel.
55.		3 rd	Do
56.		4 th	Application of different types of fuel.
57.	15 th	1 st	Heating values of fuel.
58.		2 nd	Do
59.		3 rd	Quality of I.C engine fuels Octane number, Cetane number.
60.		4 th	Do

The above lesson plan prepared by the concerned faculty.

Er. Rajendra Mohanty

PTGF, MECHANICAL DEPARTMENT