



GOVERNMENT POLYTECHNIC, KORAPUT
DEPARTMENT OF MECHANICAL ENGINEERING

Discipline: MECHANICAL ENGG	Semester: 4TH	Name of the Teaching Faculty:
Subject: THERMAL ENGG -2	No. of days/per week class allotted:4	Semester From date: _____ To Date: _____ No. of Weeks:15
COURSE OUTCOMES	<p>Student will develop ability towards.</p> <ol style="list-style-type: none"> 1. Understanding the power developed in I.C engine and efficiency. 2. Understanding the principle, performance and application of air compressor. 3. Determining thermodynamic properties of steam using steam tables & mollier chart. 4. Comprehending the working of various steam generators i.e. boilers. 5. Comprehending the vapor power cycles and computing work done & efficiencies thereof 	
Week	Class Day	Theory/Practical Topics
1 ST	1 ST	Introduction to ic Engine, parts of ic Engine
	2 ND	Terminology related to ic engine, indicated power
	3 RD	Brake power, mechanical efficiency
	4 TH	Indicated thermal efficiency, brake thermal efficiency, relative efficiency, overall efficiency
2 ND	1 ST	Specific fuel consumption
	2 ND	Numericals
	3 RD	Numericals
	4 TH	Air fuel ratio, types of mixture, calorific value
3 RD	1 ST	Air compressors, industrial use of compressors
	2 ND	Classification of compressors, principle of operations
	3 RD	Reciprocating air compressor
	4 TH	Terminology related reciprocating air compressor
4 TH	1 ST	Single stage air compressor with clearance
	2 ND	Single stage air compressor without clearance
	3 RD	Multistage air compressor with clearance
	4 TH	Multistage air compressor with clearance
5 TH	1 ST	Multistage air compressor without clearance
	2 ND	Numericals
	3 RD	Numericals
	4 TH	Numericals
6 TH	1 ST	Gas, vapour, pure substance
	2 ND	Formation of steam
	3 RD	Representation on pv, ts, hs,th diagram
	4 TH	Properties of steam
7 TH	1 ST	Properties of steam
	2 ND	Mollier diagram & steam table

	3 RD	Flow & non flow process of vapour
	4 TH	Flow & non flow process of vapour
8 TH	1 ST	Numericals
	2 ND	Numericals

	3 RD	Numericals
	4 TH	Numericals
9 TH	1 ST	Boiler , classification of boiler
	2 ND	Types of boiler
	3 RD	Cochran boiler
10 TH	4 TH	Babcock & Willcox boiler
	1 ST	Boiler draught
10 TH	2 ND	Boiler draught
	3 RD	Boiler mountings
	4 TH	Boiler mountings
11 TH	1 ST	Boiler mountings
	2 ND	Boiler mountings
	3 RD	Boiler accessories
	4 TH	Boiler accessories
12 TH	1 ST	Carnot cycle
	2 ND	Carnot cycle
	3 RD	Rankine cycle
	4 TH	Rankine cycle
13 TH	1 ST	Numericals
	2 ND	Numericals
	3 RD	Numericals
	4 TH	Numericals
14 TH	1 ST	Modes of heat transfer
	2 ND	Fouriers law of heat conduction
	3 RD	Newton law of cooling
	4 TH	Radiation , law's of radiation
15 TH	1 ST	Black body radiation, emmissivity, absorbitivity,transmissibility
	2 ND	Heat exchanger
	3 RD	Heat exchanger
	4 TH	Revision

LEARNING RESOURCES:

1 Thermal Engineering R.S. Khurmi S.Chand

2 Thermal Engineering A.R.Basu Dhanpat Rai

3 Thermal Engineering A.S. Sarao Satya Prakash

4 Engineering Thermodynamics P.k.Nag TMH

5 Thermal Engineering Mahesh M Rathore TMH

Sign. Of Faculty
concerned

Signature. Of
HOD

Principal

