

GOVT. PG

ACADEMI

**Discipline :
MECHANICAL
ENGG.**

Semester: 4th Sem

**Subject : Thermal
Engineering-II**

**No. of Days /
per week class
allotted : 04**

MONTH	Week	Day	
JANUARY	3rd	2nd	
		3rd	
		6th	
	4th	1st	
		3rd	
		6th	
	5th	1st	
		2nd	
		3rd	
	FEBRUARY	1st	6th
2nd		1st	
		2nd	
		3rd	
		6th	
3rd		1st	
		2nd	
		6th	
4th		1st	
		2nd	
		3rd	
		6th	
			1st

	5th	2nd
		3rd
MARCH	1st	1st
	2nd	1st
		3rd
		6th
	3rd	1st
		2nd
		3rd
		6th
	4th	1st
		2nd
		3rd
		6th
	5th	3rd
		6TH
APRIL	1st	2nd
		3rd
		6th
	2nd	1st
		1st
		2nd
		3rd
		6th
	3rd	1st
		2nd
		6th
	4TH	1st
		2nd
		3rd

OLYTECHNIC MAYURBHANJ , TIKARPADA

IC SESSION-20223-24 , LESSON PLAN

Name of the Teaching Faculty :SASMITA SAHA

Semester From date : 16/1/24 To Date : 26/4/24

Topics

CHAPTER -1. Performance of I.C engine : Performance of I.C engine: Define mechanical efficiency, Indicated thermal efficiency

Relative Efficiency, brake thermal efficiency overall efficiency

Mean effective pressure & specific fuel consumption.

Solve related problems

Define air-fuel ratio & calorific value of fuel.

Work out problems to determine efficiencies & specific fuel consumption

Work out problems to determine efficiencies & specific fuel consumption

CHAPTER-2 :Air Compressor : Explain functions of compressor & industrial use of compressor air

Classify air compressor & principle of operation

Describe the parts and working principle of reciprocating Air compressor.

Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered & Volumetric efficiency

Derive the work done of single stage with clearance.

Derive the work done of single stage without clearance.

Derive the work done of two stage compressor without clearance .

problem solve

Derive the work done of two stage compressor with clearance.

Solve simple problems (without clearance only)

CLASS TEST-I

CHAPTER- 3 :Properties of Steam Difference between gas & vapours ,Formation of steam.

Representation on P-V, T-S, H-S, & T-H diagram.

Definition & Properties of Steam

Use of steam table for finding unknown properties

Use of mollier chart for finding unknown properties

Solve problem
Non flow & flow process of vapour.
Revision
Determine the changes in properties & solve simple numerical.
Solve problem
CHAPTER-4: Steam Generator :Classification & types of Boiler.Important terms for Boiler.
Comparison between fire tube & Water tube boiler.
Description & working of Cochran boiler
Description & working of Lancashire boiler
Description & working of Babcock & Wilcox Boiler
Boiler Draught (Forced, induced & balanced)
Boiler mountings & accessories
Revision
CHAPTER -5: Vapour Power Cycles: Carnot cycle with vapour
Derive work & efficiency of the cycle.
Rankine cycle.Representation in P-V, T-S & h-s diagram. Derive Work & Efficiency.
Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.
Effect of Various end conditions in Rankine cycle
INTERNAL EXAMINATION
Reheat cycle ,Regenerative Cycle.
Solve problem
CHAPTER- 6: Heat Transfer :Modes of Heat Transfer (Conduction, Convection, Radiation).
Modes of Heat Transfer (Conduction, Convection, Radiation).
Fourier law of heat conduction and thermal conductivity (k).
Newton's laws of cooling, Revision
Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law)
Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility.
Revision
Question Discussion.
CLASS TEST-II