

LESSON PLAN

DISCIPLINE: Mechanical engineering	Semester: 4TH	Name of the Teaching Faculty: N.BEHERA
Subject : THERMAL ENGINEERING-II	No. of Days / per week class allotted : 4	Semester From date: 16-01-2024 To Date: 26-04-2024 No. of Weeks : 12
Week	Class Day	Topics
1st	1st	<u>PERFORMANCE OF IC ENGINE</u> : Define mechanical efficiency, Indicated thermal efficiency,
	2nd	Relative Efficiency, brake thermal efficiency, overall efficiency
	3rd	Mean effective pressure & specific fuel consumption.
	4th	Define air-fuel ratio & calorific value of fuel.
2nd	1st	problems to determine efficiencies & specific fuel consumption.
	2nd	problems to determine efficiencies & specific fuel consumption.
	3rd	problems to determine efficiencies & specific fuel consumption.
	4th	revision
3rd	1st	<u>AIR COMPRESSOR</u> : Explain functions of compressor & industrial use of compressor air
	2nd	Classification of air compressor
	3rd	principle of operation.
	4th	Describe the parts and working principle of reciprocating Air compressor
4th	1st	Explain the terminology of reciprocating compressors such as bore, stroke, pressure ratio, free air delivered & Volumetric efficiency.
	2nd	Derive the work done of single stage & two stage compressor with and without clearance.
	3rd	Solve simple problems (without clearance only)
	4th	Solve simple problems (without clearance only)

5 th	1st	Solvesimpleproblems(withoutclearanceonly)
	2nd	Solvesimpleproblems(withoutclearanceonly)
	3rd	revision
	4th	revision
6th	1st	<u>PROPERTYOFSTEAM</u> :Differencebetweengas&vapours.
	2nd	Formationofsteam
	3rd	RepresentationonP-V,T-S,H-S,&T-H diagram.
	4th	Definition&PropertiesofSteam.
7th	1st	Useofsteamtable&mollierchartforfindingunknownproperties
	2nd	Useofsteamtable&mollierchartforfindingunknownproperties
	3rd	Nonflow&flowprocessofvapour
	4th	P-V,T-S&H-S,diagram.
8th	1st	Determinethechangesinproperties&solvesimplennumerical
	2nd	Determinethechangesinproperties&solvesimplennumerical
	3rd	revision
	4th	revision
9th	1st	<u>STEAMGENERATOR</u> :Classification&typesofBoiler
	2nd	ImportanttermsforBoiler
	3rd	Comparisonbetweenfirtube&WatertubeBoiler
	4th	Description&workingofcommonboilers(Cochran,Lancashire)

10th	1st	Description&workingofcommonboilers(Babcock&Wilcox Boiler)
	2nd	BoilerDraught(Forced,induced&balanced)
	3rd	Boilermountings
	4th	Boilermountings
11th	1st	Boileraccessories
	2nd	Boileraccessories
	3rd	revision
	4th	revision
12th	1st	<u>STEAMPOWERCYCLE</u> :Carnotcyclewithvapour
	2nd	Derivework&efficiencyofthecycle.
	3rd	Rankine cycle RepresentationinP-V,T-S&h-sdiagram.
	4th	DeriveWork&Efficiency.
13th	1st	EffectofVariousendconditionsinRankinecycle.
	2nd	Reheatcycle®enerativeCycle.
	3rd	simplenumericalonCarnotvapourCycle&RankineCycle.
	4th	simplenumericalonCarnotvapourCycle&RankineCycle.
14th	1st	<u>HEATTRANSFER</u> :ModesofHeatTransfer(Conduction,Convection, Radiation).
	2nd	Fourierlawofheatconductionandthermalconductivity (k)
	3rd	Newton'slawsofcooling
	4th	Radiationheattransfer(Stefan,Boltzmann)onlystatement
15th	1st	Radiationheattransfer(Kirchhoff'slaw)onlystatement
	2nd	BlackbodyRadiation,DefinitionofEmissivity,absorptivity,&transmissibility.
	3rd	Definitionofabsorptivity,&transmissibility.
	4th	revision