

Discipline : MECHANICAL ENGG	Semester : 4TH	Name of the Teaching Faculty: SABYASACHI JAGANNATH MISHRA.
Subject: THERMAL ENGG-II	No. of days/per week class allotted: 04	Semester From date : 05.04.2021 To Date: 30.06.2021 No. of Weeks: 15
Week	Class Day	Theory / Practical Topics
1 ST	1 ST	Introduction to thermodynamics
	2 ND	Introduction to Vapor Power cycles
	3 RD	Explain Steam Power Plant with its Layout
	4 TH	Explain Steam Power Plant with its Layout Contd.
2 ND	1 ST	Explain working of steam power plant cycle
	2 ND	Explain Carnot vapor cycle with property diagram
	3 RD	Explain Rankine vapor cycle with property diagram
	4 TH	Explain Rankine vapor cycle with property diagram Contd.
3 RD	1 ST	Explain modifications to Rankine vapor cycle
	2 ND	Problem solving
	3 RD	Explain the qualities of ideal working fluid of power cycle
	4 TH	Explain Binary vapor cycles
4 TH	1 ST	Previous year question discussion, Assignment
	2 ND	Introduction to Gas Power cycles
	3 RD	Explain the concept of I C engine
	4 TH	Explain the concept of I C engine contd.
5 TH	1 ST	Explain Otto cycle with property diagram
	2 ND	Explain Diesel cycle with property diagram
	3 RD	Explain Dual cycle with property diagram
	4 TH	Problem solving
6 TH	1 ST	Problem solving
	2 ND	Problem solving
	3 RD	Compare Otto, Diesel and Dual cycles
	4 TH	Differentiate between 2S and 4S engine
7 TH	1 ST	Previous year question discussion, Assignment
	2 ND	Introduction to Fuels and Combustion
	3 RD	Explain Hydrocarbon fuels
	4 TH	Explain the different combustion reactions
8 TH	1 ST	Explain the different combustion reactions contd.
	2 ND	Explain enthalpy of formation and enthalpy of reaction
	3 RD	Explain heating values for fuels
	4 TH	Explain Octane number
9 TH	1 ST	Explain Cetane number
	2 ND	Previous year question discussion, Assignment
	3 RD	Introduction to Heat transfer
	4 TH	Explain the different modes of heat transfer
10 TH	1 ST	State Fourier law of heat conduction, define thermal conductivity
	2 ND	Explain steady state heat conduction in solids
	3 RD	Problem solving

	4 TH	Explain convective heat transfer, State Newton's law of cooling
11 TH	1 ST	Problem solving
	2 ND	Explain radiation heat transfer, State Stefan Boltzman law
	3 RD	Problem solving
	4 TH	Explain the different theories of radiation
12 TH	1 ST	Explain surface absorption, reflection and transmission
	2 ND	State Kirchhoff's law
	3 RD	Define heat exchanger and classify it
	4 TH	Explain the different types of heat exchangers with its application
13 TH	1 ST	Explain the different types of heat exchangers with its application
	2 ND	Previous year question discussion, Assignment
	3 RD	Introduction to refrigeration cycles
	4 TH	Explain the concept of refrigerators and heat pumps
14 TH	1 ST	Problem solving
	2 ND	Explain reversed Carnot cycle with its limitations
	3 RD	Explain ideal vapor compression refrigeration cycle
	4 TH	Explain actual vapor compression refrigeration cycle
15 TH	1 ST	Explain actual vapor compression refrigeration cycle contd.
	2 ND	Introduction to Gas refrigeration cycle
	3 RD	Previous year question discussion, Assignment
	4 TH	Important question discussion

Learning Resouces:

01. Thermal Engineering by M M Rathore, Mc Graw Hill Education
02. A textbook of Thermal Engg by R S Khurmi and J K Gupta, S Chand Publisher
03. Steam Tables by K K Ramalingam, Scitech Publication

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