BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

SUBJECT: THERMAL ENGINEERING -II

FACULTY:MRS. SUNITA NAYAK

ACCADEMIC SESSION: 2023-24(S

SEMESTER:4TH

SEC:B

13/01/24

H O D (MechEngg.)

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Discipline:MechanicalEngg.	Semester:4TH SEC-B		Name of the teaching faculty: SUNITA NAYAK
Subject:THERMAL ENGG.-II	No of days/per week class allotted:4 (Wednes day, Thurs day, Friday, Sat day)		Semester from date: 16/01/2024 to date:26/04/2024 No. of weeks-15
Week	Class day	No of periods	Theory/practical topics
1st (4P)	17/01/2024	1	Discussion of Syllabus and application of Thermodynamic
	18/01/2024	1	Introduction to thermal engineering-II **1.Performance of IC engine** 1.1 Define mechanical efficiency ,indicated thermal efficiency
	19/01/2024	1	1.1 Define relative efficiency ,brake thermal efficiency, overall efficiency,
	20/01/2024	1	1.1 Define mean effective pressure and specific fuel consumption
2nd (3P)	24/01/2024	1	1.2 Define air-fuel ratio and calorific value of fuel
	25/01/2024	1	1.3 work out problems to determine efficiencies and specific fuel consumption
	27/01/2024	1	1.3 work out problems to determine efficiencies and specific fuel consumption
3rd (4P)	31/01/2024	1	**2. Air compressor** 2.1 Explain function of compressor and industrial uses of compressed air

	01/02/2024	1	2.2 classify air compressor and principle of operation
	02/02/2024	1	2.3 Describe the parts of reciprocating air compressor
	03/02/2024	1	2.3Describe the working principle of reciprocating air compressor
4th (4P)	07/02/2024	1	2.4 Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio ,free air delivered and volumetric efficiency
	08/02/2024	1	2.4 Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio ,free air delivered and volumetric efficiency
	09/02/2024	1	2.5 Derive the work done of single stage compressor without clearance
	10/02/2024	1	2.5 Derive the work done of single stage compressor with clearance
5th (3P)	15/02/2024	1	2.5 Derive the work done of two stage compressor with or without clearance
	16/02/2024	1	Class test-1
	17/02/2024	1	2.6 Solve simple problems(without clearance only)
6th (4P)	21/02/2024	1	2.6 Solve simple problems(without clearance only)
	22/02/2024	1	**3 Properties of steam** 3.1 Difference between gas and vapour 3.2 Formation of steam
	23/02/2024	1	3.3 Representation on P-V,T-S H-S and T-H diagram
	24/02/2024	1	3.3 Representation on P-V,T-S H-S and T-H diagram
7th(4P)	28/02/2024	1	3.4 Definition and properties of steam
	29/02/2024	1	3.5 Use of steam table for finding unknown properties
	01/03/2024	1	3.5 Use of mollier chart for finding unknown properties

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	02/03/2024	1	3.6 Non flow and flow process of vapour
8th(3P)	06/03/2024	1	3.6 Non flow and flow process of vapour
	07/03/2024	1	3.7 P-V,T-S AND H-S diagram
	09/03/2024	1	3.8 Determine the changes in properties and solve simple numerical
9th(4P)	13/03/2024	1	4 steam generator 4.1 classification and types of boiler
	14/03/2024	1	4.2 Important terms for boiler
	15/03/2024	1	4.3 comparison between fire tube and water tube boiler
	16/03/2024	1	4.4 description and working of common boilers (Cochran,Lancashire,babcock and wilcox boiler)
10th(3P)	20/03/2024	1	4.4 description and working of common boilers (Cochran,Lancashire,babcock and wilcox boiler
	21/03/2024	1	4.4 description and working of common boilers(Cochran,Lancashire,babcock and wilcox boiler
	22/03/2024	1	4.5 boiler draught (forced, induced and balanced)
	23/03/2024	1	4.6 boiler mounting and accessories
11th(3P)	27/03/2024	1	5 steam power cycle 5.1 Carnot cycle with vapour
	28/03/2024	1	5.2 Derive work and efficiency of the cycle
	30/03/2024	1	5.3 rankine cycle 5.3.1 representation in P-V,T-S and H-S diagram
12th(4P)	03/04/2024	1	5.3.2 derive work and efficiency of the cycle
	04/04/2024	1	5.3.3 effect of various end conditions in rankine cycle
	05/04/2024	1	5.3.4 reheat and regeneration cycle
	06/04/2024	1	5.4 solve simple numerical on carnot vapour cycle and rankine cycle

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13th(4P)	10/04/2024	1	6 Heat transfer 6.1 modes of heat transfer(conduction ,convection and radiation)
	12/04/2024	1	6.2 fourier law of heat conduction and thermal conductivity
	13/04/2024	1	6.3Newtons law of cooling
14th(3P)	18/04/2024	1	6.4 Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation
	19/04/2024	1	6.5 Black body radiation, emissivity, absorpvity and transmissivity
	20/04/2024	1	Revision
15th(1P)	24/05/2024	1	Revision
	25/05/2024	1	Class test-2
	26/04/2024	1	Revision