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Teacher's Lesson Note

2023 - 24

Thermal Engineering - II

Mechanical Engg. & Mech. I. I

4th Sem

TEACHERS LESSON NOTE

Date	Period	Class	Subject	Topic (Concept)	Sub-Topic (Sub-Concept)	Learning Activities to be taken up	TLM to be used	Evaluative Questions	Expected learning outcome	Project work to be assigned	Signature of the Teacher	Signature of the Headmaster	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14
6/2/24	1st Week	1st		Performance of I.C Engine.		Define Mechanical Efficiency.			→ Basic Revision of previous semester thermal subject. → Discuss Mechanical Effeciency.		06.02.24		
8/2/24		2nd				Indicated thermal Efficiency.			→ Detail Discussion of Indicated thermal Efficiency.		08.02.24		
9/2/24		3rd				Mean effective Pressure.			- Revision - Mean effective pressure.		09.02.24		
9/2/24		4th				Brake thermal Efficiency . Overall Efficiency.			Brake thermal Efficiency. Overall Effeciency.		07.02.24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
10/2/24	Ex. and Work	3rd				Mean Effective pressure & Specific fuel Consumption.			Mean Effective pressure & Specific fuel consumption —		Attended 10/02/24		
10/2/24		2nd				Define air fuel Ratio & Calorific value of fuel.			Explaination of air fuel ratio & Calorific Value of fuel.		Attended 10/02/24		
12/2/24		3rd				Work out problems to determine Efficiency.			-Revision-		Attended 12/02/24		
20/2/24		4th				Specific fuel Consumption.			Discussion Question & Answer Solve some Numerical problems		Attended 20/02/24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
22/2/24	3rd Week	1st	Air compressor.			Functions of Compressors.			Application and uses of Air compressor.		Attended 22.02.24		
23/2/24		2nd				classify air Compressor.			Classification of Air Compressor. → According to no. of stage. → According to moving part → According to power of power cylinder.		Attended 23/02/24		
24/2/24		3rd				classification of air Compressor & principle of Operation.			Classification of Air compressor → Single stage Air Compressor → Multi stage Air Compressor.		Attended 24/02/24		
24/2/24		4th				Describe the parts of Reciprocating Air Compressor.			Different parts of Reciprocating Air Compressor.		Attended 24/04/24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
27/2/24	4th Week	1st				Working principle of Reciprocating Air-Compressor.			Air Compressor - Terms. - Inlet pressure - Discharge Pr. - compression Ratio - free air delivery - Swept volume		Attended 27/02/24		
28/2/24		2nd				Terminology of reciprocating Compressor.			Working of Single stage Reciprocating Air Compressor.		Attended 28/02/24		
28/2/24		3rd				Pressure Ratio free air delivered (such as bore, stroke, pressure)			Working of Multi Stage Reciprocating Air Compressor.		Attended 28/02/24		
29/2/24		4th				Volumatric Efficiency.			Workdone by a Single stage Reciprocating Air compressor without clearance volume.		Attended 29/02/24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
29/2/24	5th Week	1st				Work done of Single Stage compressor with & without clearance.			Work done by a single stage Reciprocating air compressor with clearance volume.		29/02/24		
12/3/24		2nd				Workdone of Single Stage compressor with & without clearance.			→ Intercooling of air in a two-stage Reciprocating air compressor. → Incomplete or inperfect intercooling		12.03.24		
13/3/24		3rd				Solve Simple problems.			Numerical Solve problem -Revision-		13/03/24		
14/3/24		4th				Solve Simple problems			-Class Test-		14.03.24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
15/3/24	6th Week	1st		Properties of Steam.		Difference bet^n gas & vapours.			Difference between gas & vapour.		15/03/24		
15/3/24		2nd				formation of Steam.			formation of Steam.		15/03/24		
16/3/24		3rd				Representation on P-V, T-S Diagram.			Study of Pressure-volume temperature and entropy Diagram		16.03.24		
16/3/24		4th				Representation on H-S & T-H Diagram.			study of enthapy and and entropy and Temperature enthapy diagram.		16.03.24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
19/3/24	7th week	1st				Definition of steam.			Definition of steam. State of water condition. Liquid, solid, vapour.		Checked 19.03.24		
19/3/24		2nd				Properties of steam.			Properties of steam. I. Wet steam. II. Dry steam. III. Superheated steam.		Checked 19.03.24		
20/3/24		3rd				Use of steam table & mollier chart for finding unknown properties.			Study of steam table & mollier chart and their uses.		Checked 20.03.24		
21/3/24		4th				Non flow proces of vapour.			Non flow proces of vapour.		Checked 21.03.24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
21/3/24	8th Week	1st				Flow process of Vapour.			Study of Flow Process of vapour.		21.03.24		
22/3/24		2nd				P-V, T-S & H-S Diagram.			Discussion about P-V, T-S and H-S diagram.		22.03.24		
23/3/24		2nd				Determine the change in properties.			Study and Observation change in properties.		23.03.24		
23/3/24		4th				Solve Simple Numerical			Solve Numerical problems.		23.03.24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
27/3/24	4th Week	1st		Steam Generator.		Classification & types of Boiler			Introduction to Steam Boilers. Types of Boilers. - vertical, - According to use. - According to no. of tube.		27.03.24		
27/3/24		2nd				Important terms for Boiler.			Study of important terms of Steam Boiler.		27.03.24		
28/3/24		3rd				Explain fire tube Boiler.			Study of construction and working features of fire tube Boiler.		28.03.24		
28/3/24		4th				Explain Water Tube Boiler.			Study of Water tube Boiler.		28.03.24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
29/3/24	10th Week	1st				Working of Common Boilers.			Working of Common types Boiler. → Babcok and Wilcox Boiler.		29.03.24		
29/3/24		2nd				Working of Common Boilers.			→ Lancashire Boiler. → Locomotive Boiler.		29.03.24		
30/3/24		3rd				Boiler Draught.			Boiler Draught and their types.		30.03.24		
30/3/24		4th				Boiler Draught.			Natural Draught. Artificial Draught.		30.03.24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
2/4/24	11-th hour	1st				Boiler Mounting & Accessories.			Boiler Mountings. • Safety valve - Pressure gauge - steam stop valve - Water level indicator.		02.04.24		
2/4/24		2nd				Boiler Mounting & Accessories.			Boiler Accessories, → Economiser → Air pre heater - Condenser -		02.04.24		
3/4/24		3rd		Steam Power cycle.		Carnot cycle with vapour.			Study of Carnot vapour cycle. With Diagram.		03.04.24		
3/4/24		4th				Derive Work & Efficiency of the cycle.			Discussion of Work & Efficiency of the cycle.		03.04.24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
4/4/24	12th Week	1st				Rankine cycle			· Study of Rankine cycle with Diagram.		Handed 04.04.24		
4/4/24		2nd			Rankine cycle	Representation in P-V, T-S & h-s Diagram.			Representation of Rankine cycle with P-V & T-S and H-S Diagram.		Handed 04.04.24		
09/4/24		3rd				Derive Work & Efficiency.			Rankine Cycle Work and Efficiency.		Handed 09.04.24		
9/4/24		4th		—		Effect of Various end conditions in Rankine cycle.			Effect of Various end conditions in Rankine cycle.		Handed 09.04.24		

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1	2	3	4	5	6	7	8	9	10	11	12	13	14
10/4/24	12.1h Work	1st				Reheat cycle & Regenerative cycle.			Solve Numerical problems on Carnot & Rankine vapour cycle.		10.04.24		
10/4/24		2nd				Solve Simple Numerical * Carnot vapour cycle. * Rankine cycle.			-Revision-		10.04.24		
12/4/24		3rd		Heat Transfer		Modes of Heat transfer.			Introduction to heat transfer. Modes of heat transfer.		12.04.24		
12/4/24		4th				Flourier Law of heat Conduction.			Flouriour Law of heat conduction.		12.04.24		

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12/4/24	14th Week	1st				Fourier Law of thermal Conductivity (K)			Fourier's Law of thermal Conductivity.		12.04.24		
13/4/24		2nd				Newton's Laws of Cooling.			Newton's Laws of Cooling.		13.04.24		
13/4/24		3rd				Radiation of Heat Transfer.			Radiation of Heat transfer.		13.04.24		
13/4/24		4th				Black Body - Radiation.			Black Body Radiation.		13.04.24		

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	15th week	1st				Defination of * Emissivity * Absorptivity & * Transmissibility.							
		2nd											
		3rd											
		4th											