



GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR

SESSION PLAN

4TH SEMESTER, BRANCH-MECHANICAL(GROUP 1)

TH 4 - THERMAL ENGINEERING-II

Name of the Faculty – ER. SANJAY KUMAR PANIGRAHY						
Topics to be taken						
SL NO & CHAPTER	No. of Periods assigned by SCTE & VT	Details of the topics	PLANNED DATE	Details of the topics	ACTUAL DATE	Remarks
1. Performance of I.C engine	8	1.1 Define mechanical efficiency, Indicated thermal efficiency, Relative Efficiency, brake thermal efficiency overall efficiency Mean effective pressure & specific fuel consumption. 1.2 Define air-fuel ratio & calorific value of fuel. 1.3 Work out problems to determine efficiencies & specific fuel consumption.	13/02/2023 TO 23/02/2023	1.1 Define mechanical efficiency, Indicated thermal efficiency, Relative Efficiency, brake thermal efficiency overall efficiency Mean effective pressure & specific fuel consumption. 1.2 Define air-fuel ratio & calorific value of fuel. 1.3 Work out problems to determine efficiencies & specific fuel consumption.	13.02.2023 15.02.2023 16.02.2023 20.02.2023 22.02.2023 23.02.2023	

2. Air Compressor	12	<p>2.1 Explain functions of compressor & industrial use of compressor air</p> <p>2.2 Classify air compressor & principle of operation.</p> <p>2.3 Describe the parts and working principle of reciprocating Air compressor.</p> <p>2.4 Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered & Volumetric efficiency.</p> <p>2.5 Derive the work done of single stage & two stage compressor with and without clearance.</p> <p>2.6 Solve simple problems (without clearance only)</p>	<p>25/02/2023 TO 15/03/2023</p>	<p>2.1 Explain functions of compressor & industrial use of compressor air</p> <p>2.2 Classify air compressor & principle of operation.</p> <p>2.3 Describe the parts and working principle of reciprocating Air compressor.</p> <p>2.4 Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered & Volumetric efficiency.</p> <p>2.5 Derive the work done of single stage & two stage compressor with and without clearance.</p> <p>2.6 Solve simple problems (without clearance only)</p>	<p>25.02.2023</p> <p>27.02.2023</p> <p>1.03.2023 2.03.2023</p> <p>4.03.2023 6.03.2023</p> <p>9.03.2023 11.03.2023</p> <p>13.03.2023 15.03.2023</p>	
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3. Properties of Steam	12	<p>3.1 Difference between gas & vapours.</p> <p>3.2 Formation of steam.</p> <p>3.3 Representation on P-V, T-S, H-S, & T-H diagram.</p> <p>3.4 Definition & Properties of Steam.</p> <p>3.5 Use of steam table & mollier chart for finding unknown properties.</p> <p>3.6 Non flow & flow process of vapour.</p> <p>3.7 P-V, T-S & H-S, diagram.</p> <p>3.8 Determine the changes in properties & solve simple numerical.</p>	<p>16/03/2023 TO 5/04/2023</p>	<p>3.1 Difference between gas & vapours.</p> <p>3.2 Formation of steam.</p> <p>3.3 Representation on P-V, T-S, H-S, & T-H diagram.</p> <p>3.4 Definition & Properties of Steam.</p> <p>3.5 Use of steam table & mollier chart for finding unknown properties.</p> <p>3.6 Non flow & flow process of vapour.</p> <p>3.7 P-V, T-S & H-S, diagram.</p> <p>3.8 Determine the changes in properties & solve simple numerical.</p>	<p>16.03.2023</p> <p>18.03.2023</p> <p>20.03.2023</p> <p>22.03.2023</p> <p>23.03.2023</p> <p>25.03.2023</p> <p>28.03.2023</p> <p>29.03.2023</p> <p>5.04.2023</p>	
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4. Steam Generator	12	<p>4.1 Classification & types of Boiler.</p> <p>4.2 Important terms for Boiler.</p> <p>4.3 Comparison between fire tube & Water tube Boiler.</p> <p>4.4 Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler)</p> <p>4.5 Boiler Draught (Forced, induced & balanced)</p> <p>4.6 Boiler mountings & accessories.</p>	<p>6/04/2023 TO 24/04/2023</p>	<p>4.1 Classification & types of Boiler.</p> <p>4.2 Important terms for Boiler.</p> <p>4.3 Comparison between fire tube & Water tube Boiler.</p> <p>4.4 Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler)</p> <p>4.5 Boiler Draught (Forced, induced & balanced)</p> <p>4.6 Boiler mountings & accessories.</p>	<p>6.04.2023</p> <p>8.04.2023</p> <p>10.04.2023</p> <p>12.04.2023</p> <p>13.04.2023</p> <p>15.04.2023</p> <p>17.04.2023</p> <p>19.04.2023</p> <p>20.04.2023</p> <p>24.04.2023</p>	
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5. Steam Power Cycles	8	<p>5.1 Carnot cycle with vapour.</p> <p>5.2 Derive work & efficiency of the cycle.</p> <p>5.3 Rankine cycle.</p> <p>5.3.1 Representation in P-V, T-S & h-s diagram.</p> <p>5.3.2 Derive Work & Efficiency.</p> <p>5.3.3 Effect of Various end conditions in Rankine cycle.</p> <p>5.3.4 Reheat cycle & regenerative Cycle.</p> <p>5.4 Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.</p>	<p>26/04/2023 TO 6/05/2023</p>	<p>5.1 Carnot cycle with vapour.</p> <p>5.2 Derive work & efficiency of the cycle.</p> <p>5.3 Rankine cycle.</p> <p>5.3.1 Representation in P-V, T-S & h-s diagram.</p> <p>5.3.2 Derive Work & Efficiency.</p> <p>5.3.3 Effect of Various end conditions in Rankine cycle.</p> <p>5.3.4 Reheat cycle & regenerative Cycle.</p> <p>5.4 Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.</p>	<p>26.04.2023 27.04.2023</p> <p>29.04.2023 1.05.2023 3.05.2023 4.05.2023</p> <p>6.05.2023</p>	
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6. Heat Transfer	8	<p>6.1 Modes of Heat Transfer (Conduction, Convection, Radiation).</p> <p>6.2 Fourier law of heat conduction and thermal conductivity (k).</p> <p>6.3 Newton's laws of cooling.</p> <p>6.4 Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation & no numerical problem.</p> <p>6.5 Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility.</p>	<p>8/05/2023 TO 16/05/2023</p>	<p>6.1 Modes of Heat Transfer (Conduction, Convection, Radiation).</p> <p>6.2 Fourier law of heat conduction and thermal conductivity (k).</p> <p>6.3 Newton's laws of cooling.</p> <p>6.4 Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation & no numerical problem.</p> <p>6.5 Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility.</p>	<p>8.05.2023</p> <p>10.05.2023</p> <p>11.05.2023</p> <p>13.05.2023 15.05.2023</p> <p>16.05.2023</p>	
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S.K. Panigrahy

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HOD, MECHANICAL



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