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.	**18.01.2024 TO 29.01.2024**	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.	**18.01.2024** **20.01.2024** **22.01.2024** **24.01.2024** **25.01.2024** **29.01.2024**	

2. Air Compressor	**12**	2.1 Explain functions of compressor & industrial use of compressor air 2.2 Classify air compressor & principle of operation. 2.3 Describe the parts and working principle of reciprocating Air compressor. 2.4 Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered &Volumetric efficiency. 2.5 Derive the work done of single stage & two stage compressor with and without clearance. 2.6 Solve simple problems (without clearance only)	**31.01.2024 TO 17.02.2024**	2.1 Explain functions of compressor & industrial use of compressor air 2.2 Classify air compressor & principle of operation. 2.3 Describe the parts and working principle of reciprocating Air compressor. 2.4 Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered &Volumetric efficiency. 2.5 Derive the work done of single stage & two stage compressor with and without clearance. 2.6 Solve simple problems (without clearance only)	**31.01.2024** **1.02.2024** **3.02.2024** **5.02.2024** **7.02.2024** **8.02.2024** **10.02.2024** **12.02.2024** **15.02.2024** **17.02.2024**	

3. Properties of Steam	**12**	3.1 Difference between gas & vapours. 3.2 Formation of steam. 3.3 Representation on P-V, T-S, H-S, & T-H diagram. 3.4 Definition & Properties of Steam. 3.5 Use of steam table & mollier chart for finding unknown properties. 3.6 Non flow & flow process of vapour. 3.7 P-V, T-S & H-S, diagram. 3.8 Determine the changes in properties & solve simple numerical.	**19.02.2024 TO 4.03.2024**	3.1 Difference between gas & vapours. 3.2 Formation of steam. 3.3 Representation on P-V, T-S, H-S, & T-H diagram. 3.4 Definition & Properties of Steam. 3.5 Use of steam table & mollier chart for finding unknown properties. 3.6 Non flow & flow process of vapour. 3.7 P-V, T-S & H-S, diagram. 3.8 Determine the changes in properties & solve simple numerical.	**19.02.2024** **21.02.2024** **22.02.2024** **24.02.2024** **26.02.2024** **28.02.2024** **29.02.2024** **2.03.2024** **4.03.2024**	

4. Steam Generator	**12**	4.1 Classification & types of Boiler. 4.2 Important terms for Boiler. 4.3 Comparison between fire tube & Water tube Boiler. 4.4 Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler) 4.5 Boiler Draught (Forced, induced & balanced) 4.6 Boiler mountings & accessories.	**6.03.2024 TO 23.03.2024**	4.1 Classification & types of Boiler. 4.2 Important terms for Boiler. 4.3 Comparison between fire tube & Water tube Boiler. 4.4 Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler) 4.5 Boiler Draught (Forced, induced & balanced) 4.6 Boiler mountings & accessories.	**6.03.2024** **7.03.2024** **11.03.2024** **13.03.2024** **14.03.2024** **16.03.2024** **18.03.2024** **20.03.2024** **21.03.2024** **23.03.2024**	

5. Steam Power Cycles	**8**	5.1 Carnot cycle with vapour. 5.2 Derive work & efficiency of the cycle. 5.3 Rankine cycle. 5.3.1 Representation in P-V, T-S & h-s diagram. 5.3.2 Derive Work & Efficiency. 5.3.3 Effect of Various end conditions in Rankine cycle. 5.3.4 Reheat cycle & regenerative Cycle. 5.4 Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.	**27.03.2024 TO 8.04.2024**	5.1 Carnot cycle with vapour. 5.2 Derive work & efficiency of the cycle. 5.3 Rankine cycle. 5.3.1 Representation in P-V, T-S & h-s diagram. 5.3.2 Derive Work & Efficiency. 5.3.3 Effect of Various end conditions in Rankine cycle. 5.3.4 Reheat cycle & regenerative Cycle. 5.4 Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.	**27.03.2024** **28.03.2024** **30.03.2024** **3.04.2024** **4.04.2024** **6.04.2024** **8.04.2024**	

6. Heat Transfer	**8**	6.1 Modes of Heat Transfer (Conduction, Convection, Radiation). 6.2 Fourier law of heat conduction and thermal conductivity (k). 6.3 Newton's laws of cooling. 6.4 Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation & no numerical problem. 6.5 Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility.	**10.04.2024 TO 22.04.2024**	6.1 Modes of Heat Transfer (Conduction, Convection, Radiation). 6.2 Fourier law of heat conduction and thermal conductivity (k). 6.3 Newton's laws of cooling. 6.4 Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation & no numerical problem. 6.5 Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility.	**10.04.2024** **13.04.2024** **15.04.2024** **18.04.2024** **20.04.2024** **22.04.2024** **24.04.2024** **25.04.2024** **27.04.2024**	

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BHABANDHA, BERHAMPUR
SESSION PLAN
4TH SEMESTER, BRANCH-MECHANICAL(GROUP 2)

TH 4 - THERMAL ENGINEERING-II

Name of the Faculty – PROF. PODAL BIKASH KUMAR

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**
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2. Air Compressor	**12**	2.1 Explain functions of compressor & industrial use of compressor air 2.2 Classify air compressor & principle of operation. 2.3 Describe the parts and working principle of reciprocating Air compressor. 2.4 Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered &Volumetric efficiency. 2.5 Derive the work done of single stage & two stage compressor with and without clearance. 2.6 Solve simple problems (without clearance only)	**2.02.2024 TO 17.02.2024**	2.1 Explain functions of compressor & industrial use of compressor air 2.2 Classify air compressor & principle of operation. 2.3 Describe the parts and working principle of reciprocating Air compressor. 2.4 Explain the terminology of reciprocating compressor such as bore, stroke, pressure ratio free air delivered &Volumetric efficiency. 2.5 Derive the work done of single stage & two stage compressor with and without clearance. 2.6 Solve simple problems (without clearance only)	**2.02.2024** **3.02.2024** **5.02.2024** **7.02.2024** **9.02.2024** **10.02.2024** **12.02.2024** **14.02.2024** **16.02.2024** **17.02.2024**	

3. Properties of Steam	**12**	3.1 Difference between gas & vapours. 3.2 Formation of steam. 3.3 Representation on P-V, T-S, H-S, & T-H diagram. 3.4 Definition & Properties of Steam. 3.5 Use of steam table & mollier chart for finding unknown properties. 3.6 Non flow & flow process of vapour. 3.7 P-V, T-S & H-S, diagram. 3.8 Determine the changes in properties & solve simple numerical.	**19.02.2024 TO 6.03.2024**	3.1 Difference between gas & vapours. 3.2 Formation of steam. 3.3 Representation on P-V, T-S, H-S, & T-H diagram. 3.4 Definition & Properties of Steam. 3.5 Use of steam table & mollier chart for finding unknown properties. 3.6 Non flow & flow process of vapour. 3.7 P-V, T-S & H-S, diagram. 3.8 Determine the changes in properties & solve simple numerical.	**19.02.2024** **21.02.2024** **23.02.2024** **24.02.2024** **26.02.2024** **28.02.2024** **1.03.2024** **2.03.2024** **4.03.2024** **6.03.2024**	

4. Steam Generator	**12**	4.1 Classification & types of Boiler. 4.2 Important terms for Boiler. 4.3 Comparison between fire tube & Water tube Boiler. 4.4 Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler) 4.5 Boiler Draught (Forced, induced & balanced) 4.6 Boiler mountings & accessories.	**11.03.2024 TO 30.03.2024**	4.1 Classification & types of Boiler. 4.2 Important terms for Boiler. 4.3 Comparison between fire tube & Water tube Boiler. 4.4 Description & working of common boilers (Cochran, Lancashire, Babcock & Wilcox Boiler) 4.5 Boiler Draught (Forced, induced & balanced) 4.6 Boiler mountings & accessories.	**11.03.2024** **13.03.2024** **15.03.2024** **16.03.2024** **18.03.2024** **20.03.2024** **22.03.2024** **23.03.2024** **27.03.2024** **30.03.2024**	

5. Steam Power Cycles	**8**	5.1 Carnot cycle with vapour. 5.2 Derive work & efficiency of the cycle. 5.3 Rankine cycle. 5.3.1 Representation in P-V, T-S & h-s diagram. 5.3.2 Derive Work & Efficiency. 5.3.3 Effect of Various end conditions in Rankine cycle. 5.3.4 Reheat cycle & regenerative Cycle. 5.4 Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.	**3.04.2024 TO 13.04.2024**	5.1 Carnot cycle with vapour. 5.2 Derive work & efficiency of the cycle. 5.3 Rankine cycle. 5.3.1 Representation in P-V, T-S & h-s diagram. 5.3.2 Derive Work & Efficiency. 5.3.3 Effect of Various end conditions in Rankine cycle. 5.3.4 Reheat cycle & regenerative Cycle. 5.4 Solve simple numerical on Carnot vapour Cycle & Rankine Cycle.	**3.04.2024** **5.04.2024** **6.04.2024** **8.04.2024** **10.04.2024** **12.04.2024** **13.04.2024**	

6. Heat Transfer	**8**	6.1 Modes of Heat Transfer (Conduction, Convection, Radiation). 6.2 Fourier law of heat conduction and thermal conductivity (k). 6.3 Newton's laws of cooling. 6.4 Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation & no numerical problem. 6.5 Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility.	**15.04.2024 TO 27.04.2024**	6.1 Modes of Heat Transfer (Conduction, Convection, Radiation). 6.2 Fourier law of heat conduction and thermal conductivity (k). 6.3 Newton's laws of cooling. 6.4 Radiation heat transfer (Stefan, Boltzmann & Kirchhoff's law) only statement, no derivation & no numerical problem. 6.5 Black body Radiation, Definition of Emissivity, absorptivity, & transmissibility.	**15.04.2024** **19.04.2024** **20.04.2024** **22.04.2024** **24.04.2024** **26.04.2024** **27.04.2024**	

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