DRONACHARYA
College of Engineering

KHENTAWAS, FARRUKHNAGAR, GURGAON, HR

Department: Mechanical Engineering

Academic Session: 2017-18 (Jan-June 2018)

Lesson Plan for the Semester started w.e.f 08.01.2018

Subject with code: Steam & Power Generation (210-F)

Name of Faculty with designation : Poshan Sahu (Asst. Prof.)

Month	Date & Day	Sem-Class	Unit	Topic/Chapter covered	Academic activity	Test / assignment
January	**10.01.2018 Wednesday**	**IV-ME-I**	1-A	Basic Introduction, need of the particular Energy Conversion subject,Components of Steam Power System, Carnot Cycle, Rankine Cycle,	……	**Assignment of 02 Ques. given**
January	**12.01.2018 Friday**		1-A	Principles of thermal energy conversion to work: Carnot Cycle, Rankine Cycle, P-v, T-s Curves, Working, Cycle efficiency, and Line Diagrams	……	**Assignment of 02 Ques. given**
January	**17.01.2018 Wednesday**		1-A	Reheat Cycle: P-v, T-s Curves, Working, Cycle efficiency, and Line Diagrams. , Mollier's diagram, use of steam table, Problem Steps based on above cycles.	……	**Assignment of 02 Ques. given**
January	**19.01.2018 Friday**		1-A	Regenerative Cycle: P-v, T-s Curves, Working, Cycle, efficiency, and Line Diagrams. Problem Steps based on above cycles.	……	**Assignment of 02 Ques. given**
January	**31.01.2018 Wednesday**		1-B	Steam generators (Boilers): Definition, classification, Low Pressure and High Pressure Boilers.Boiler mountings and accessories, Feed Water Treatments.	……	**Assignment of 02 Ques. given**
February	**02.02.2018 Friday**		1-B	Boiler Loadings and manner of operations, Boiler Energy Balance, Performance, Calculations, and Boiler Draught.	……	**Assignment of 02 Ques. given**

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February	**07.02.2018 Wednesday**		1-B	Different types of Furnaces for burning of coal and oils, Numerical based on boiler performances.Binary Vapour Power Cycle: P-v, T-s Curves, Working, Cycle efficiency, and Line Diagrams. Problem Steps based on above cycles.	……	**Assignment of 02 Ques. given**
February	**09.02.2018 Friday**		2-A	Steam Nozzles: Definition, classification, Steady Flow Energy Equation, Exit Velocity. Mass of discharge flow through nozzles	……	**Assignment of 02 Ques. given**
February	**21.02.2018 Wednesday**		2-A	Nozzle efficiency.Critical pressure ratio, idea of total stagnation pressure.Pressure for maximum discharge flow through nozzles.	……	**Assignment of 02 Ques. given**
February	**23.02.2018 Friday**		2-A	Air Nozzles, condition for air nozzles, exit and inlet temperature from the air nozzles, Numerical based on air nozzles.Derive the expression for max. Discharge from the nozzles, exit velocity with friction losses.	……	**Assignment of 02 Ques. given**
February	**28.02.2018 Wednesday**		2-B	Steam Engine: Introduction, Working of steam engine, single acting and double acting steam engine, compounding of steam engine,	……	**Assignment of 02 Ques. given**
March	**07.03.2018 Friday**		2-B	ideal and actual indicator diagram, mean effective pressure, diagram factor, mechanical efficiency, thermal efficiency of steam engine:Problem Steps based on above cycles	……	**Assignment of 02 Ques. given**
March	**14.03.2018 Wednesday**		3-A	Steam Turbines: Definition, classification of steam turbines, and applications. Impulse and reaction turbines, compounding.Work done by the impulse turbines, axial force, Tangential force, blade efficiency	……	**Assignment of 02 Ques. given**
March	**16.03.2018 Friday**		3-A	Reaction Turbine: work done by the Reaction turbines, axial force, Tangential force, blade efficiency. Optimum velocity ratio, reheat factor, condition line, losses in steam turbines, governing of steam turbines.	……	**Assignment of 02 Ques. given**

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March	**28.03.2018 Wednesday**		3-A	Steam Condensers: Definition, classification of Steam Condensers, jet and surface Steam Condensers.	……	**Assignment of 02 Ques. given**
April	**04.04.2018 Friday**		3-B	Central flow type, ejector type, working, line diagrams, surface Steam Condensers, down flow type Steam Condensers, inverted flow type, efficiency of Steam Condensers.	……	**Assignment of 02 Ques. given**
April	**06.04.2018 Wednesday**		3-B	Steam Condensers pressure, steam pressure, partial pressure, air pressure, vacuum efficiency.	……	**Assignment of 02 Ques. given**
April	**11.04.2018 Friday**		4-A	Reciprocating air compressors: Definition, classification of Reciprocating air compressors, Single stage Reciprocating air compressor, work done, P-v, T-s Curves, Working.	……	**Assignment of 02 Ques. given**
April	**13.04.2018 Wednesday**		4-A	Work done on the Reciprocating air compressor to follow; Iso- thermal, Adiabatic, Isentropic processes. Effect of clearance volume in single stage Reciprocating air compressors.	……	**Assignment of 02 Ques. given**
April	**25.04.2018 Friday**		4-B	Real indicator diagram, Work done on the Reciprocating air compressor in multi-stage. Optimum inter stage pressure, energy exchange in multi-stage air compressors. Introduction to principle thermal energy release, structure of Hydrocarbons, fuel analysis.	……	**Assignment of 02 Ques. given**
April	**27.04.2018 Wednesday**		4-B	Combustion, mass balance, energy balance, adiabatic flame temperature, Air fuel ratio, stoichiometric Air fuel ratio, fuel systems.Gibb's Function, flue gas analysis, Orsat apparatus	……	**Assignment of 02 Ques. given**