

LECTURE SCHEDULE

Department: Dairy Engineering

Course No. - DTE- 123

Course Title: Boilers and Steam Generation Credit Hrs - 2 (1+1)

Course Teacher: Dr. Jahangir Badshah

Theory

S. No.	Topics to be covered	No. of Classes
1	To study different types of fire tube boilers with the help of Lab models: Cornish, Locomotive.	01
2	Study of Lancashire boiler and Cochran boiler.	01
3	To study different types of water tube boilers with the help of Lab models: Babcox Wilcox Boiler.	02
4	To study Boiler mountings: Water level Indicator, Pressure Gauge.	01
5	To study Stop valve, Blow – off Cock, Feed Check Valve.	01
6	To study Fusible Plug and safety Valve boiler mountings.	01
7	To study Boiler Accessories: Feed Pump, Super heater, Economiser, Air Preheater.	01
8	To study Boiler Accessories: Economiser and Air Pre heaters.	01
9	To study Steam-line layout and steam traps.	01
10	Industrial exposure visit to plant with steam utilization.	01
11	Study of Fire tube low pressure boiler installed in a dairy processing plant.	01
12	Study of water softening plant installed with boiler in a dairy processing plant.	01
13	Numerical on capacity and performance of boilers	01
14	Design of Chimney and numerical on boiler draught.	01
15	Visit to plant for Renewable energy sources.	01
16	Visit to Cattle Feed Plant for steam line layout and boiler.	01
	Total	17

Practical (DTE 123)

S. No.	Practical to be covered	No. of Classes
1	To study different types of fire tube boilers with the help of Lab models: Cornish, Locomotive.	01
2	Study of Lancashire boiler and Cochran boiler.	01
3	To study different types of water tube boilers with the help of Lab models: Babcox Wilcox Boiler.	01
4	To study Boiler Mountings: Water level Indicator, Pressure Gauge.	01
5	To study Stop valve, Blow – off Cock, Feed Check Valve.	01
6	To study Fusible Plug and safety Valve boiler mountings.	01
7	To study Boiler Accessories: Feed Pump and Super heater.	01
8	To study Boiler Accessories: Economiser and Air Pre heaters.	01
9	To study Steam-line layout and steam traps.	01
10	Industrial exposure visit to plant with steam utilization to PDP Patna	01
11	Study of Fire tube low pressure boiler installed in a dairy processing plant.	01
12	Study of water softening plant installed with boiler in a dairy processing plant.	01
13	Numerical on capacity and performance of boilers	01
14	Design of Chimney and numerical on boiler draught.	01
15	Visit to plant for Renewable energy sources.	02
16	Visit to Cattle Feed Plant for steam line layout and boiler.	02
17	Visit to Other Dairy Plants of COMFED.	02
	Total	20

Suggested Reading:

1. A Textbook of Thermal Engineering by R. S. Khurmi and J. K. Gupta (2004), S. Chand & Company Ltd., Ram Nagar, New Delhi -110 055.
2. Boiler Operation Engineering (Questions and Answers) Third Edn. By P. Chattopadhyay (2019), Mc GRAW HILL Pub.
3. Exposure to Boilers by G.S. Aglave (2019), New Age International Publishers.
4. Indian Boiler Regulations (18th Edn.), by Akalank Kumar Jain (2019), Akalank Publications.
5. Practical Boiler Operation Engineering and Power Plant by Amiya Ranjan Mallick (2019), PHI Pub.