

**Course wise Teaching Plan for Session : Summer 2019****Course : DESIGN OF PUMPS, BLOWERS AND COMPRESSORS** Faculty: Mahadev.valekar@raisoni.net - MAHADEV BABURAO VALEKAR

Unit	Topic Code	Topic Covered	Date	Course	Section
1	1	Introduction to pumps, Introduction to blowers and compressors	03/12/2018	BMEL307A	C
1	2	Basic equations of energy transfer between fluid and rotor	04/12/2018	BMEL307A	C
1	3	Performance characteristics	06/12/2018	BMEL307A	C
1	4	Dimensionless parameters	10/12/2018	BMEL307A	C
1	5	Specific speed	11/12/2018	BMEL307A	C
1	6	stage velocity triangles	13/12/2018	BMEL307A	C
1	7	work and efficiency	17/12/2018	BMEL307A	C
2	8	Introduction: Types, Component and Working of Reciprocating pump	18/12/2018	BMEL307A	C
2	9	Discharge, Work done and power required to drive for single acting and double acting,	20/12/2018	BMEL307A	C
2	10	Coefficient of discharge,	24/12/2018	BMEL307A	C
2	11	slip, Effect of acceleration of piston on velocity and pressure	31/12/2018	BMEL307A	C
2	12	indicator diagram	01/01/2019	BMEL307A	C
2	13	Air Vessel,	03/01/2019	BMEL307A	C
2	14	Operating characteristics	07/01/2019	BMEL307A	C
3	15	Design procedure and design optimization of Pumps(1)	08/01/2019	BMEL307A	C
3	16	Design procedure and design optimization of Pumps(2)	14/01/2019	BMEL307A	C
3	17	selection of pumps	15/01/2019	BMEL307A	C
3	18	Thermal design- Selection of materials for high temperature and corrosive fluids(1)	17/01/2019	BMEL307A	C
3	19	Thermal design- Selection of materials for high temperature and corrosive fluids(2)	21/01/2019	BMEL307A	C
3	20	Hydraulic design- Selection of impeller and casing dimension using industrial manuals(1).	22/01/2019	BMEL307A	C

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Unit	Topic Code	Topic Covered	Date	Course	Section
3	21	Hydraulic design- Selection of impeller and casing dimension using industrial manuals.(2)	24/01/2019	BMEL307A	C
4	22	Classification of blowers, Basics of stationary and moving air,	28/01/2019	BMEL307A	C
4	23	Eulers characteristics, velocity triangles and operating pressure conditions,	29/01/2019	BMEL307A	C
4	24	Equations for blowers, Losses and hydraulic efficiency	31/01/2019	BMEL307A	C
4	25	flow through impeller casing,	04/02/2019	BMEL307A	C
4	26	inlet nozzle, Volute, diffusers, leakage,	05/02/2019	BMEL307A	C
4	27	mechanical losses, surge and stall	07/02/2019	BMEL307A	C
4	28	Applications of blowers and fans.	11/02/2019	BMEL307A	C
5	29	Rotor design airfoil theory,	12/02/2019	BMEL307A	C
5	30	vortex theory, cascade effects	14/02/2019	BMEL307A	C
5	31	degree of reaction,	25/02/2019	BMEL307A	C
5	32	Design procedure for selection and optimization of Blowers.	26/02/2019	BMEL307A	C
5	33	Stage pressure rise,	28/02/2019	BMEL307A	C
5	34	stage parameters and design parameters.	04/03/2019	BMEL307A	C
5	35	Design of impeller and casing dimension in aerodynamic design	05/03/2019	BMEL307A	C
6	36	Basic theory, classification and application,	07/03/2019	BMEL307A	C
6	37	Working with enthalpy-entropy diagram	18/03/2019	BMEL307A	C
6	38	construction and approximate calculation of centrifugal compressors,	19/03/2019	BMEL307A	C
6	39	impeller flow losses, slip factor, diffuser analysis,	21/03/2019	BMEL307A	C
6	40	performance curves of centrifugal compressors,	22/03/2019	BMEL307A	C
6	41	Basic design features of axial flow compressors;velocity triangles,	23/03/2019	BMEL307A	C



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Unit	Topic Code	Topic Covered	Date	Course	Section
6	42	enthalpy-entropy diagrams, stage losses and efficiency, work done factor, simple stage of axial flow compressors.	23/03/2019	BMEL307A	C