



National Institute of Technology Meghalaya
An Institute of National Importance

CURRICULUM

Programme	Bachelor of Technology in Mechanical Engineering	Year of Regulation	2018
Department	Mechanical Engineering	Semester	IV

Course Code	Course Name	Credit Structure				Marks Distribution	
		L	T	P	C	Continuous Evaluation	Total
ME 256	Fluid Machine Lab.	0	1	2	2	100	100

Course Objectives	To understand the cavitation and water hammer	Course Outcomes	CO1	Explain various turbines and pumps, demonstrate cavitation and water hammer phenomenon with the safety features (Understanding)
			CO2	Experiments with pumps to obtain various performance parameters. (Applying)
	CO3		Experiment with Pelton turbine, Francis turbine to obtain various performance parameters. (Applying)	
	To understand the basic working principles of various turbines and pumps			

No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CO1	2	2	2	0	0	0	0	0	2	0	0	0	2	1	0
2	CO2	2	2	2	0	0	0	0	0	2	0	0	0	2	1	0
3	CO3	2	2	2	0	0	0	0	0	2	0	0	0	2	1	0
4	CO4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	CO5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	CO6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SYLLABUS

No.	Content	Hours	COs
1	Functioning of a venture tube and Cavitation, Cavitation processes for various flow rates	04	CO1
2	Study of the water hammer and Surge operation, determination of sound velocity in water and natural frequency in surge chamber.	04	CO1
3	Series and parallel operation of the pump, determination of head, recording of pump characteristics, hydraulic power.	04	CO2
4	Performance analysis & the finding the characteristic curve of the Pelton Turbine, Influence of nozzle cross section on characteristics	04	CO3
5	Performance analysis & finding the characteristic curve of the Francis Turbine, influence of guide vane position on characteristics	04	CO3
Total Hours		20	

Essential Readings

1. Som, Biswas and Chakraborty, "Introduction to Fluid Mechanics and Fluid Machines", TMH

Supplementary Readings

1. Jagdish Lal, "Hydraulic Machines including Fluidics", Metropolitan Book