

**Year / Sem:** II Year II Sem.  
**Lab code / Name:** CE406ES / FLUID MECHANICS LAB  
**Lab Incharge (Faculty / Lab staff):** Mrs V SIREESHA / Mr RAJ SHEKAR

**Course Objectives:** To give the student an exposure to various hydraulic devices and Pipe Flow.



**Course Outcomes:** At the end of the course, the student will be able to:

- Determine coefficient of discharge for orifice and mouthpiece.
- Calibrate notches venturimeter orifice meters
- Determine minor losses in pipes.

**List of Experiments:**

1. Determination of Coefficient of discharge for a small orifice.
2. Determination of Coefficient of discharge for a mouthpiece by constant head method.
3. Calibration of contracted Rectangular Notch / Triangular Notch/Trapezoidal Notch.
4. Determination of friction factor of a pipe
5. Calibration of Venturimeter
6. Calibration of Orifice meter
7. Determination of Coefficient for minor losses - Sudden Expansion
8. Determination of Coefficient for minor losses- Sudden Contraction
9. Verification of Bernoulli's equation.
10. Study of Water Hammer due to sudden Closure of valve.

**List of Equipments:**

S.no	Equipment	Specifications	Use	Photos
1.	Coefficient of discharge for a small orifice.	Mercury, Stop Watch, Measuring scale.	Experiments 1,6	
2.	Coefficient of discharge for a mouthpiece	Mercury, Stop Watch, Measuring scale.	Experiments 2	
3.	contracted Rectangular Notch / Triangular Notch/Trapezoidal Notch.	Notch plates, Stop Watch, Measuring Scale.	Experiments 3	

4.	friction factor of a pipe	Mercury, Stop Watch, Measuring scale.	Experiments 4	 <p>A photograph of a laboratory setup for a rectangular notch experiment. It features a blue metal frame supporting a stainless steel tank. A blue label at the top reads "RECTANGULAR NOTCH".</p>
5.	Venturimeter	Mercury, Stop Watch, Measuring scale.	Experiments 1,5,6	 <p>A photograph of a laboratory setup for a pipe friction apparatus experiment. It includes a red and white metal frame with a large stainless steel tank. Blue pipes and yellow hoses are connected to the setup. A blue label reads "PIPE FRICTION APPARATUS".</p>
6.	Orifice meter	Mercury, Stop Watch, Measuring scale.	Experiments 1,5,6	 <p>A photograph of a laboratory setup for a water sump with orifice experiment. It features a red and white metal frame with a large stainless steel tank. Blue pipes and yellow hoses are connected. A blue label reads "WATER SUMP WITH ORIFICE".</p>
7.	Coefficient for minor losses - Sudden Expansion	Mercury, Stop Watch, Measuring scale.	Experiments 4,7	 <p>A photograph of a laboratory setup for a water sump with orifice experiment, identical to the one in the previous row. It features a red and white metal frame with a large stainless steel tank, blue pipes, yellow hoses, and a blue label that reads "WATER SUMP WITH ORIFICE".</p>

8.	Coefficient for minor losses- Sudden Contraction	Mercury, Stop Watch, Measuring scale.	Experiments 4,7,8	 
9.	Bernoulli's equation.	Stop Watch, Scale.	Experiments 9	
10.	Water Hammer	Stop Watch, Scale.	Experiments 10	