

Course Code
CE254

Course Name
FLUID MECHANICS LAB

L-T-P - Credits
(0-0-2: 1)

Prerequisite:

Corequisite:

Course Objective:

1. To provide practical knowledge in verification of principle of fluid flow and measuring pressure, discharge, velocity and understanding frictional loss in pipe flow domain.

Course Outcomes:

1. Students will be able to understand the concepts of various properties of fluids
2. Students will be able to understand the concepts of conservation of mass, momentum and energy in regards to fluid flow
3. Students will be able to understand the applications of various flow measuring devices to measure the flow

Syllabus (List of Experiments)

- 1 To determine the metacentric height of a ship model.
- 2 Verification of Bernoulli's theorem.
- 3 To calibrate a venturimeter and to determine its coefficient of discharge.
- 4 To calibrate an orifice meter and study the variation of coefficient of discharge with the Reynolds number.
- 5 To study the flow over V-notch (weir) and Rectangular notch and to find their coefficient of discharge.
- 6 To determine the coefficient of discharge of a mouth piece.
- 7 To verify the momentum equation experimentally.
- 8 To determine the coefficient of friction of pipes of different diameters.
- 9 To determine the form losses in a pipe line.
- 10 To obtain the surface profile on the total heads distribution of a forced vortex.

Supplementary Reading.

1. Streeter, V.L. and Wylie E.B., "Fluid Mechanics", McGraw Hill.9th Edition 2017.
2. Modi P.N. and Seth S.M., "Hydraulics and Fluid Mechanics", Standard Book House.21st Edition.2017.
3. Kumar K.L., "Fluid Mechanics", S. Chand & Co.22nd Edition 2016.
4. Jain A.K., "Fluid Mechanics", Khanna Publisher.23rd Edition 2010.
5. White B.F., "Fluid Mechanics", McGraw Hill.7th Edition 2010.
6. Frabzini J., "Fluid Mechanics with Engineering Applications", McGraw Hill.10th Edition 2001.