Course Name:
Hydraulics Laboratory

Course Number:
20601

Credit:
1

Prerequisite:
Fluid Mechanics
Corequisite:
Hydraulics

Course Description (Objectives):

The purpose of this course is to augment students' understanding of fluid mechanics problems by providing an opportunity to observe various fluid phenomena, collect data, and verify the learned theories. The lab course is suitable for undergraduate students in civil engineering and exposes them to laboratory methods in fluid mechanics and hydraulics.

Course Content (outline):

- Buoyancy forces
- Metacentric height
- Pressure center
- Jet flow and impact
- Reynolds experiment
- Weirs
- Flow through Orifice
- Reservoir discharge
- Flow through sluice gate and hydraulic jump
- Flow over sill
- Time bowl
- Losses in pipes
- Bernoulli's theorem
- Water hammer
- Pumps
- Free and forced vortices
- Sediment transport

References:

- Open Channel Hydraulics, T. W. Sturm, 2nd edition, McGraw-Hill, 2010.
- Fundamentals of Fluid Mechanics, B. R. Munson, A. P. Rothmayer, T. H. Okiishi, and W. W. Huebsch, 7th Edition, John Wiley & Sons, 2013.