

Fluid Dynamics

Suggested Term Project Topics

1. Commercial Software

Analysis of flow characteristics of bridge piers using HEC-RAS

Modeling 2-D turbulent flows using TEACH-2E

Modeling 2-D incompressible viscous flows using ELOW

Modeling hydrodynamics of flow in a river Wando using RMA2/RAM2

Modeling pollutant transport in a meandering river using RMA4/RAM4

Modeling Sediment Transport in a River using SED-2D/RAM6

Numerical modeling of mass transport for 2-D trench using FLUENT (or FLOW-3D)

Analysis of flow characteristics of dam spillway using FLUENT (or FLOW-3D)

Analysis of flow characteristics of dam spillway using SSIIM

(www.bygg.ntnu.no/~nilsol/ssiimwin)

Modeling mixing characteristics of multiport diffuser using CORMIX (www.cormix.info)
or VISJET (www.aoe-water.hku.hk/visjet/visjet.htm)

2. Numerical modeling

Numerical modeling of Navier-Stokes equation using SIMPLE method (Semi-Implicit Method for Pressure-Linked Equations)

3. Analytical study

Analytical and numerical investigations of 2-D boundary layer equation

Comparative study of turbulence models for Reynolds equation

4. Experimental study

Experimental study of 2-D flow/pollutant transport using S-curve channel

Investigation of sediment transport using Sediment Channel

Experimental study of turbulent motion using Hydraulic Channel

Experimental study of secondary currents using Confluent Channel