Fluid Mechanics

SWAYAM Prabha Course Code - C1

PROFESSOR'S NAME	Prof. Manasa Behera
DEPARTMENT	Civil Department
INSTITUTE	Indian Institute of Technology, Bombay
Course Outline	Fluid Properties Fluid Statics: Fluid pressure, Forces on solid surfaces, Buoyancy force Kinematics of Fluid Flow: fluid motion, streamlines, pathlines, potential and stream functions, flow net Fluid Dynamics: Continuity equation, Navier-Stokes (N-S) equation, Bernoulli's equation, Flow measuring devices. Solution of N-S equation: Exact solutions, Approximate solution, Boundary layer, Displacement thickness, Momentum thickness Flow Through Pipes: Laminar flows, Turbulent flows, Darcy-Weisbach equation Drag and Lift: Forces on bluff bodies, Boundary layer separation, Lift, Kutta-Joukowski Theorem Groundwater Hydraulics: Darcy flow, Equation for wells in confined and unconfined aquifers

COURSE DETAILS

S. No	Module ID/ Lecture ID	Lecture Title/Topic
1	L1	Properties_of_Fluid_Type_of_Flow
2	L2	Fluid_Statics_Pressures_Forces_Pressure_Measuring_Instruments
3	L3	Fluid_Statics_Hydrostatic_forces_on_submerged_surfaces
4	L4	Fluid_Statics_Buoyancy_Stability
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References if Any: