٥٠٦٠٤٣٠٤ Hydraulic – II

Real fluid flow, viscosity, laminar flow, Reynolds experimental and their significance, critical Reynolds number, turbulent flow, characteristic of the turbulent flow, shear stresses due to turbulence, Prandtl approach for limiting length, Jon- Karman approach, fluid flow in boundaries, description of the boundary layer, boundary layer thickness, momentum equation in the boundary layer, laminar boundary layer, velocity distribution and shear stress for laminar boundary layer, local dray coefficient, turbulent boundary layer, properties of the turbulent boundary layer, velocity distribution in turbulent boundary layer, separation ideal fluid, real fluid, separation for curved boundaries, velocity distribution and its significance, energy correction factor, momentum correction factor, resistance force and energy dissipation, flow in closed pipes, establishment of flow in pipes, length of flow establishment, steady uniform flow in circular pipe, laminar flow in circular pipe, laminar flow in pipe, analytical approach, turbulent flow in pipes, Prandts-Kerman analysis, limiting length in the pipe flow turbulent condition, relation between friction factor and Reynolds number for pipe, smooth boundary, rough boundary, application on pipes, form loss coefficient, concept of equivalent length , parallel pipe and branching, pipe network, open channel flows, uniform flow, circular conducts flowing partially full, varied flow, specific energy, critical depth, gradually varied flow, characteristics of surface profile, hydraulic jump.