Fluid Flow Equations:

* Newton’s Law of Viscosity:
  + Viscosity is constant for Newtonian fluids
* Power law model (for shear thinning fluids at high shear rates)
  + ,

Fluid Statics equations

* Hydrostatic pressure equations. Valid for different positions in the same fluid
* Archimedes Principle. Valid for floating objects
  + For the same object floating in different Fluids:
* Surface Tension

Conservation of Mass

* For incompressible fluid, simplifies to:
* For Steady state, simplifies to:
* For Steady state and incompressible flow, simplifies to:
* Average velocity term for a non-flat velocity profile:

Conservation of Energy

* Torricelli’s Theorem:

Conservation of Momentum