

**Hydraulics Basics:** This **60-minute** course discusses basic properties of water including weight, density, pressure, and specific gravity. Conversion of pressure to feet of head in various units is demonstrated. Multiple examples of why pressure is so important in water and wastewater systems are presented including: determining pressures due to elevation changes in distribution systems, high groundwater and floating tanks, surcharging of sewers, and using pressure to do work with hydraulic jacks. The concepts of velocity and water hammer are introduced. The presentation closes with a description and demonstration of a ram pump whose operation is based on pressure, velocity, and water hammer.