



## FIR 261: Fire Hydraulics

Hydraulic theory and principles in a classroom setting using formula calculations with reference to fireground rule of thumb application. Topics covered include: principles of water at rest; the theory of water in motion and under pressure; water distribution systems; pump testing and pump capacity; formulas to determine friction loss; and back pressure and forward pressure of water with relevance. Prerequisite: MTH 111. Three lecture hours per week.

### Course Student Learning Outcomes

1. Apply water hydraulics principles.
2. Demonstrate knowledge of water hydraulics as it relates to fire protection.
3. Apply the application of mathematics and physics to the movement of water in fire suppression activities.
4. Identify the design principles of fire service pumping apparatus.
5. Analyze community fire flow demand criteria.
6. Demonstrate, through problem solving, a thorough understanding of the principles of forces that affect water, both at rest and in motion.
7. List and describe the various types of water distribution systems.
8. Discuss the various types of fire pumps.

**Credits:** 3

**Program:** Fire Science