Course Description

Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and to solve water supply problems. Lecture 3 hours per week.

General Course Purpose

The purpose of this course is to present an overview of the science of hydraulics as it applies to the fire service.

Prerequisites/Corequisites

Prerequisite: MTH 154

Course Objectives

Upon completion of this course, a successful student will be able to:

➢ Apply the application of mathematics and physics to the movement of water in fire suppression activities.
➢ Identify the design principles of fire service pumping apparatus.
➢ Analyze community fire flow demand criteria.
➢ Demonstrate, through problem solving, a thorough understanding of the principles of forces that affect water, both at rest and in motion.
➢ List and describe the various types of water distribution systems.
➢ Discuss the various types of fire pumps

Major Topics to be Included

• Review of basic mathematics operations
• Introduction to the science of hydraulics
• Types and functions of fire service pumps
• Types and characteristics of pressure control devices
• Types and characteristics of priming devices
• Water supply when using a hydrant
• Water supply when drafting
• Friction loss in pipe and hose
• Application of the theory of hydraulics to fire ground operations