

Course Competency

FFP 1301 Fire Service Hydraulics

Course Description

This course covers the relationship between flow, pressure, and mathematical hydraulic formulas. The course includes pump theory, pump rating, and pressure and vacuum gauges. (3 hr. lecture)

Course Competency	Learning Outcomes
Competency 1: The student will explore the theories and fundamentals of how and why fires start, spread, and how they are controlled by:	1. Critical thinking
a. Summarizing the characteristics of water as a fire supervision agent.	
Competency 2: The student will understand the principles of the use of water in fire protection and how to apply hydraulic principles to analyze and to solve water supply problems by:	1. Critical thinking
a. Applying mathematics and physics to the movement of water for fire suppression activities. b. Explaining the design principles of fire service pumping apparatus. c. Describing the basic elements of a public water supply system including sources, distribution networks, piping, hydrants and the community fire flow demand criteria. d. Describing the principles of forces that affect water at rest and in motion.	
Competency 3: The student will describe the features of design and operation of fire alarm systems, water-based fire suppression systems, special hazard fire suppression systems, and water supply for fire protection and portable fire extinguishers by:	1. Critical thinking
a. Analyzing the elements of a public water	

<p>supply system.</p> <p>b. Explaining why water is a widely used extinguishing agent and how water extinguishes fires.</p> <p>c. Identifying the different types and components of sprinkler, standpipe and foam systems.</p>	
<p>Competency 4:The student will discuss fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection/service; fire loss analysis; organization, management, and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; and introduction to fire strategy and tactics by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Social Responsibility 3. Ethical Issues
<p>a. Describing the common types of fire and emergency services facilities, equipment, and apparatus.</p>	
<p>Competency 5:The student will discuss the federal, state, and local laws that regulate emergency services, national standards influencing emergency services, standard of care, tort, liability, and a review of court cases by:</p>	<ol style="list-style-type: none"> 1. Social Responsibility 2. Ethical Issues
<p>a. Describing federal, state, and local laws, which regulate or influence emergency services.</p>	
<p>Competency 6:The student will identify the fundamentals and technical knowledge needed for proper fire scene interpretations, including recognizing and conducting origin and cause, preservation of evidence and documentation, scene security, motives of the fire setter, and types of fire causes by:</p>	<ol style="list-style-type: none"> 1. Communication 2. Critical thinking 3. Information Literacy
<p>a. Identifying the responsibilities of a firefighter when responding to the scene of a fire.</p>	

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