

COURSE OUTLINE

Water Supplied Fire Protection Systems

Course Description: FS 145. Water Supplied Fire Protection Systems. 3 hours credit. Prerequisite: FS 100 or department consent. A study of the mechanical and procedural systems of fire protection including exposure to the fire hydrant operating design criteria which includes location concept, the basic configuration and design of standpipes, combustible vapor, automatic sprinkler systems, flame arrestors, flame failure controls for oil and gas fire equipment, explosion venting and pressure relief devices, automatic fire resistant door and shutter design, and operational concepts.

Course Relevance: The principles learned in this course will enable the student to understand the function and operation of fire detection and suppression systems such as: standpipes, automatic sprinklers, fire hydrants, flame arrestors, explosion venting and automatic fire door/shutter design.

Required Materials:

International Fire Science Training Association (1994). Private fire Protection and Detection. Stillwater, OK: Fire Protection Publications

International Fire Science Training Association (1988). Water Supplies for Fire Protection. Stillwater, OK: Fire Protection Publication

Learning Outcomes:

The intention is for the student to be able to:

1. Identify various water supply systems in urban and rural areas
2. Demonstrate a working knowledge of sprinkler and standpipe systems
3. Demonstrate a basic understanding of automatic fire resistant door and shutter design and operational concepts

Learning PACT

Through the student involvement in this course, the student will develop and document his/her achievement of the following PACT skills:

Primary skills (developed and documented):

1. Problem solving
 - Through analysis of information provided generate response to specific problems
2. Historical Interpretation
 - Relate information from prior emergency situations and fire protection system activation to current trends in the industry

3. Speaking
 - Provide effective communication in classroom setting regarding specific assignments relating to fire protection and detection systems
4. Field Related Technology
 - Through a variety of projects and assignments provide information relating to fire protection and detection systems.

Secondary skills (developed but not documented):

Internet Use,
Computer Literacy
Reading
Critical Thinking

Assessment Tasks:

These learning outcomes and primary Learning PACT skills will be demonstrated by:

1. Assignments on specific topics related to fire detection equipment
2. Demonstrate determination of acceptable responses to specific fire protection equipment
3. Verbalize proper action to be taken in various emergency situations in regards to fire detection and fire suppression equipment

Course Content:

- I. Themes –
 - A. Differences of various fire protection and suppression systems
- II. Issues –
 - A. Needs of fire service and industry
 - B. Use of technology to address those needs
- III. Concepts –
 - A. Application and types of fire systems
 - B. Level of protection needed or required
 - C. Variety of protection
- IV. Skills / Competencies –
 - A. Identify various systems and components
 - B. Explain protection needed

Learning Units:

- I. Automatic Sprinkler systems
- II. Standpipe Systems
- III. Fire Pumps
- IV. Portable Fire Extinguishers
- V. Special Extinguishing Systems

- VI. Fire Detection and Signaling Systems
- VII. Water Supply Management
- VIII. Water Systems fundamentals
- IX. Fire Hydrants
- X. Fire Flow Testing
- XI. Static Sources
- XII. Relay Operations
- XIII. Shuttle Operations.

Learning Activities:

Learning activities will be geared towards discussion and lecture within the classroom. Learning activities will also include outside assignments requiring written reports and verbal delivery to the class with explanation.

Grade Determination:

Grades will be based on assessment tasks and other activities such as exams, assignments and observed performance.