

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: FFP 1540

COURSE TITLE: Private Fire Protection Systems I

PREREQUISITE(S): None

COREQUISITE(S): None

CREDIT HOURS: 3

CONTACT HOURS/WEEK: 3

CONTACT HOUR BREAKDOWN:

 Lecture/Discussion: 3

 Laboratory:

 Other _____:

FACULTY WORKLOAD POINTS: 3

STANDARDIZED CLASS SIZE ALLOCATION: 25

CATALOG COURSE DESCRIPTION:

This course is the study of private fire and detection systems such as sprinkler and standpipe systems, chemical extinguishing systems, and detection/alarm systems and devices. This course also includes a review of the design, installation, maintenance and testing of said systems.

SUGGESTED TEXT(S): Private Fire Protection and Detection,
2nd edition, IFSTA

IMPLEMENTATION DATE: Fall Term, 1991 (921)

REVIEW OR MODIFICATION DATE: Fall Term, 2003 (20041)

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
I. Automatic Sprinkler Systems	6
A. Standards Related to Automatic Sprinkler Systems	
B. Components of Sprinkler Systems	
C. Sprinklers	
D. Piping	
E. Valves	
F. Water Supply	
G. Fire Department Connections	
H. Types of Systems	
I. Design	
J. Industrial Storage Occupancies	
K. Inspection and Testing	
L. Water Supply	
M. Changes in Building Occupancy	
N. Restoring Systems	
O. Fire Department Operations in Sprinklered Properties	
P. Residential Sprinkler Systems	
II. Standpipe Systems	6
A. Classification of Standpipe Systems	
B. Water Supply	
C. Types of Systems	
D. High Rise Buildings	
E. Operations with Standpipes	
F. Inspection and Testing	
III. Fire Pumps	6
A. Types	
B. Booster Pumps	
C. Fire Pump Drivers	
D. Controllers	
E. Testing, Inspection, and Maintenance of Fire Pump Installations	
F. Routine Operation and Maintenance	
IV. Portable Fire Extinguishers	7
A. Classification of Fires	
B. Extinguisher Symbols	
C. Ratings	
D. Extinguishing Agents	
E. Types of Extinguishers	

COURSE TOPICS (CONTINUED)

CONTACT HOURS
PER TOPIC

F. Auxiliary and Manual Extinguisher Equipment	
G. Obsolete Extinguishers	
H. Distribution of Extinguishers	
I. Installation and Placement	
J. Extinguishers on Fire Apparatus	
K. Inspecting, Maintaining, and Recharging Extinguishers	
L. Hydrostatic Testing	
M. Using Portable Extinguishers	
V. Special Extinguishing Systems	7
A. Dry Chemical Extinguishing Systems	
B. Wet Chemical Extinguishing Systems	
C. Halogenated Agent Systems	
D. Carbon Dioxide Systems	
E. Foam Systems	
F. Foam Proportioning Rates	
VI. Fire Detection and Signaling Systems	7
A. Basic System Components	
B. Types of Signaling Systems	
C. Manual Alarm-Initiating Devices	
D. Automatic Alarm-Initiating Devices	
E. Inspecting and Testing Fire Detection and Signaling Systems	
VII. Tables	6

PROGRAM TITLE: Fire Science Technology
 COURSE TITLE: Private Fire Protection Systems I
 CIP NUMBER: 0743.020100

LIST PERFORMANCE STANDARD ADDRESSED:

NUMBER(S): TITLES(S):

06.0 USE PORTABLE AND FIXED FIRE EXTINGUISHERS -- The student will be able to:

- 06.01 Identify the classification of types of fire as they relate to the use of portable extinguishers.
- 06.02 Given a group of differing extinguishers, identify the appropriate extinguishers for the various classes of fire.
- 06.03 Define the portable extinguisher rating system.
- 06.04 Identify the types of portable fire extinguishers.
- 06.05 Demonstrate the use of portable fire extinguishers for each class of fire.
- 06.06 Describe three safety checks to perform on portable extinguishers (to include charge, hose, and nozzle inspection).
- 06.07 Identify how to evaluate the operational readiness of portable fire extinguishers.
- 06.08 Identify the capability of extinguishing agents and the proper method of agent application.
- 06.09 Identify code requirements and regulations relative to the distribution and location of portable fire extinguishers.
- 06.10 Identify portable fire extinguisher maintenance requirements and procedures.
- 06.11 Identify fixed fire extinguishing systems.
- 06.12 Identify how to evaluate the operational readiness of fixed fire extinguishing systems.
- 06.13 Identify the capabilities of the extinguishing agent and the proper procedures for agent application in a fixed fire extinguishing system.

12.0 USE SPRINKLER SYSTEMS - The student will be able to:

- 12.01 Identify the different types of sprinkler systems.
- 12.02 Identify the following: (a) wet sprinkler system; (b) dry sprinkler system; (c) deluge sprinkler system; (d) residential sprinkler system
- 12.03 Identify a fire department sprinkler connection and water motor alarm.
- 12.04 Connect hose line(s) to a fire department connection of a sprinkler or standpipe system.
- 12.05 Define how the automatic sprinkler heads open and release water.
- 12.06 Temporarily stop the flow of water from the sprinkler head.
- 12.07 Identify the "Main Drain" valve on an automatic sprinkler system.
- 12.08 Open and close a "Main Drain" valve on an automatic sprinkler system.
- 12.09 Identify the "Main Control" valve on an automatic sprinkler system.
- 12.10 Operate a "Main Control" valve on an automatic sprinkler system from "open" to "closed" and then back to "open".
- 12.11 Explain the value of automatic sprinklers in providing safety to the occupants in a structure.
- 12.12 Identify and explain the dangers of premature closure of sprinkler "Main Control" valve, and of using hydrants to supply hose streams when the same water system is supplying the automatic sprinkler system.

LIST PERFORMANCE STANDARD ADDRESSED: (continued)

NUMBER(S): TITLES(S):

- 12.13 Identify the difference between an automatic sprinkler system that affords complete coverage and partial sprinkler system.
- 12.14 Identify at least three sources of water for supply to an automatic sprinkler system.
- 12.15 Demonstrate removing one head from a sprinkler system and replacing it with a head of the same type.
- 12.16 When given an "Alarm Valve" of an automatic sprinkler system, identify the operation of the valve.
- 12.17 When given twelve various sprinkler heads, identify each of them correctly as to: (a) Temperature rating, (b) Pendant or upright, (c) special types.
- 12.18 Identify the "Alarm Test" valve on an automatic sprinkler system.
- 12.19 When given an automatic sprinkler system, operate the "Alarm Test" valve.
- 12.20 When given a velocity drain valve or ball drip valve on the fire department connection of an automatic sprinkler system, demonstrate that the valve is operating and the pipe drained.
- 12.21 When given a check valve on the fire department connection to an automatic sprinkler system, identify the direction of flow of water through the valve.
- 12.22 Read and record the indicated pressures on all gauges provided on a standard wet automatic sprinkler system and identify each gauge.
- 12.23 Read and record the indicated pressures on all gauges provided on a standard dry pipe automatic sprinkler system and identify each gauge.
- 12.24 Explain the reliability of automatic sprinkler systems and give eight reasons for unsatisfactory performance.
- 12.25 By inspection of an automatic sprinkler system in a building, identify obstructions to sprinkler heads and the required clearance.

18.0 IDENTIFY FIRE PROTECTION ORGANIZATIONS -- The student will be able to:

- 18.01 Identify the public and private national organizations that support the fire protection services, and describe the functions of each.
- 18.02 Identify the public and private state organizations that support the fire protection services, and describe the functions of each.
- 18.03 Identify the public and private local organizations that support the fire protection services

27.0 DEMONSTRATE KNOWLEDGE OF STANDPIPE AND HOSE SYSTEMS AND WATER SUPPLY SYSTEMS -
The student will be able to:

- 27.01 Identify the types of standpipe and hose systems. (See NFPA 14, Standard for Installation of Standpipe and Hose Systems.)
- 27.02 Identify standpipe and hose systems and their appurtenances.
- 27.03 Identify how to evaluate the operational readiness of a standpipe and hose system.
- 27.04 Identify standpipe and hose system equipment use and capabilities.
- 27.05 Identify the types of water distribution systems and other water sources in the local community.
- 27.06 Identify characteristics of private water supply systems.
- 27.07 Identify and explain the four fundamental components of a modern water system.
- 27.08 Identify the following parts of a water distribution system: (a) distributors, (b) primary feeders, (c) secondary feeders.
- 27.09 Identify a: (a) dry barrel hydrant, (b) wet barrel hydrant.

LIST PERFORMANCE STANDARD ADDRESSED: (continued)

NUMBER(S): TITLES(S):

- 27.10 Define the following terms: (a) normal operation pressure of a water distribution system, (b) residual pressure of a water distribution system, (c) flow pressure.
- 27.11 Identify the following types of water main valves: (a) indicating, (b) non indicating, (c) post indicator, (d) outside screw and yoke.
- 27.12 Identify hydrant usability by: (a) obstructions to use of hydrant, (b) direction of hydrant outlets to suitability of use, (c) mechanical aboveground damage, (d) condition of paint for rust or corrosion, (e) the flow by fully opening the hydrant, (f) ability to drain.
- 27.13 Identify how to evaluate the operational readiness of a water supply system.
- 27.14 Given pitot tube and gauge, use, read, and record several flow pressures.
- 27.15 Given a chart, sizes of openings, and flow pressures, determine the quantity of water flowing from the openings.
- 27.16 Given a chart, identify the approximate discharge capacities of various water pipe sizes.
- 27.17 Identify the pipe sizes used in water distributions systems for residential, business, and industrial districts.
- 27.18 Identify two causes of increased resistance or friction loss in water mains.

28.0 DEMONSTRATE KNOWLEDGE OF HEAT, SMOKE, AND FLAME DETECTION SYSTEMS - The student will be able to:

See NFPA 72E, Standard on Automatic Fire Detectors and NFPA 74, Standard for the Installation, Maintain, and the Use of Household Fire Warning Equipment.

- 28.01 Identify local fire alarm systems and devices.
- 28.02 Identify how to evaluate the operational readiness of heat, smoke and flame detection system and devices.
- 28.03 Identify the proper installation locations of heat, smoke, and flame detection devices.

29.0 DEMONSTRATE KNOWLEDGE OF FIRE ALARM SYSTEMS AND DEVICES - The student will be able to:

- 29.01 Identify local fire alarm systems and devices.
- 29.02 Identify how to evaluate the operational readiness of local fire alarm systems and devices.
- 29.03 Identify the warning capability of local fire alarm systems and devices.
- 29.04 Identify the operation of municipal fire alarm systems.
- 29.05 Identify the interconnection between local and municipal fire alarm systems.
- 29.06 Differentiate between residential, local, proprietary, central station, and municipal fire alarm systems.
- 29.07 Identify the proper installation locations of fire alarm system components of devices.



NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

Section 1	SEMESTER CREDIT HOURS (CC): <u>3</u>
COURSE PREFIX AND NUMBER: <u>FFP 1540</u>	CONTACT HOURS (NCC): _____
COURSE TITLE: <u>Private Fire Protection Systems I</u>	

Section 2
TYPE OF COURSE: (Click on the box to check all that apply)

<input type="checkbox"/> AA Elective	<input checked="" type="checkbox"/> AS Required Professional Course	<input type="checkbox"/> College Prep
<input type="checkbox"/> AS Professional Elective	<input type="checkbox"/> AAS Required Professional Course	<input type="checkbox"/> Technical Certificate
<input type="checkbox"/> Other _____	<input type="checkbox"/> PSAV	<input type="checkbox"/> Apprenticeship
<input type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7)		

Section 3 (If applicable)
INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:

<input type="checkbox"/> Communications	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	

Section 4
INTELLECTUAL COMPETENCIES:

<input checked="" type="checkbox"/> Reading	<input checked="" type="checkbox"/> Speaking	<input type="checkbox"/> Critical Analysis	<input checked="" type="checkbox"/> Quantitative Skills	<input type="checkbox"/> Scientific Method of Inquiry
<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input type="checkbox"/> Information Literacy	<input type="checkbox"/> Ethical Judgment	<input checked="" type="checkbox"/> Working Collaboratively

Section 5	
LEARNING OUTCOMES	METHOD OF ASSESSMENT
• Identify classes of fire as they relate to portable fire extinguishers	Exam
• Identify fire protection organizations	Exam
• Identify types of sprinkler systems	Exam
• Define how sprinkler heads operate	Exam
• Explain the value of automatic sprinklers in providing safety to occupants in a structure	Exam
• Demonstrate knowledge of standpipe and hose systems and water supply systems	Exams
• Demonstrate knowledge of heat, smoke, & flame detection systems	Exam
• Demonstrate knowledge of fire alarm systems & devices	Exam
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Section 6
Name of Person Completing This Form: Dr. Deborah Mertz/Kenneth Ellison Date: 10/9/2007