

COCONINO COMMUNITY COLLEGE

COURSE OUTLINE

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Status: Permanent

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A. Identification:

1. Subject Area: Fire Science
2. Course Number: FSC 235
3. Course Title: FIRE PROTECTION SYSTEMS
4. Credit Hrs: 3
5. Catalog Description:

Required standard for water supply, protection systems, automatic sprinklers, and special extinguishing systems, including analysis of various automatic signaling and detection systems. Prerequisites: FSC 180 or consent of instructor. Three lecture.

B. Course Goals:

To provide the students with the basic information to understand the importance of fire protection equipment and how they operate.

C. Course Outcomes:

Students will:

1. Recognize all fire detection systems available.
2. Recognize all fire protection systems available.
3. Demonstrate a working knowledge of protection and detection systems.
4. Recognize the special hazards requiring detection and protection systems.

AND

1. Identify the fire department sprinkler connection and water motor alarm.
2. Connect hoseline(s) to a fire department connection of an automatic sprinkler system.
3. Demonstrate knowledge of how the automatic sprinkler head opens and releases water.
4. When given the necessary equipment, shall effect a temporary stop of the flow of water from a sprinkler head.
5. Identify the MAIN DRAIN valve on an automatic sprinkler system.
6. Open and close a MAIN DRAIN valve on an automatic sprinkler system.
7. Identify the MAIN CONTROL valve on an automatic sprinkler system.
8. Operate a MAIN CONTROL valve on an automatic sprinkler system from "open" to "closed" and then back to "open."
9. Demonstrate knowledge of the value of automatic sprinklers in providing safety to life of occupants in a structure.
10. Identify and explain the dangers of premature closure of a sprinkler MAIN CONTROL valve, and of using fire hydrants to supply fire hose streams when the same water system is supplying the automatic sprinkler system.
11. Identify the difference between an automatic sprinkler system that affords complete coverage and partial sprinkler system.
12. Identify at least three sources of water for supply to an automatic sprinkler system.
13. Identify the following: (a) Wet sprinkler system; (b) Dry sprinkler system; (c) Deluge sprinkler system.
14. Identify the classification of types of fire as they relate to the use of portable extinguishers.
15. Given a group of differing extinguishers, demonstrate the appropriate extinguishers for the various classes of fire.
16. Identify the portable extinguisher rating system.

17. Demonstrate that fire extinguishers in an inspected premises are of required types and ratings, conform to fire prevention code requirements where applicable, and have been inspected and serviced within the required period.
18. Demonstrate the inspection of standpipe systems for fire protection, including visual inspection of hose (where provided), nozzles, hose outlet threads and fire department connections.
19. Given an alarm valve of an automatic sprinkler system, shall demonstrate the operation of the valve.
20. Given twelve various sprinkler heads, shall identify all of them correctly as to: (a) temperature rating; (b) Pendant or upright; (c) Special types.
21. Identify the ALARM TEST valve on an automatic sprinkler system.
22. Given an automatic sprinkler system, shall operate the ALARM TEST valve in such a manner as to actually test the system.
23. Given a velocity drain valve or ball drip valve on the fire department connection of an automatic sprinkler system, shall demonstrate that the valve is operating and the pipe drained.
24. Given a check valve on the fire department connection of an automatic sprinkler system, shall demonstrate the direction of flow of water through the valve.
25. Read and record the indicated pressures on all gauges provided on a standard WET automatic sprinkler system and name each gauge.
26. Read and record the indicated pressures on all gauges provided on a standard DRY pipe automatic sprinkler system and name each gauge.
27. Identify and explain the reliability of automatic sprinkler systems, and identify eight reasons for unsatisfactory performance.
28. By inspection of an automatic sprinkler system in a building, identify and explain if obstructions to sprinkler heads are present and what is the required clearance for the sprinkler head from obstructions.

D. Course Content:

Will include:

1. Automatic Sprinkler Systems
 - a. Sprinkler heads
 - b. Wet-pipe systems
 - c. Dry-pipe-systems
 - d. Pre-action and deluge systems
 - e. Inspecting and testing
2. Special Extinguishing Systems
 - a. Carbon dioxide systems
 - b. Halogenated agent systems
 - c. Dry and wet chemical systems
 - d. Foam systems
3. Stand Pipe and Fire Extinguisher Systems
4. Fire Detection and Alarm Systems
 - a. Types of systems
 - b. Alarm - initiating systems
 - c. Inspection and testing of alarm and detection systems