

COCONINO COMMUNITY COLLEGE

COURSE OUTLINE

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Revised:
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A. Identification

1. Subject Area: Fire Science
2. Course Number: FSC 180
3. Course Title: FireFighter I & II
4. Credit Hrs: 8
5. Catalog Description :

For the new firefighter or student interested in firefighting. Fire behavior and basic firefighting skills, with hands-on use of firefighting equipment. Prerequisite: FSC 138 and EMS 131 or consent of Fire Science Coordinator. Six lecture. Four lab.

B. Course Goals

To provide the student with the basic hands-on skills used in fire service.

C. Course Outcomes:

Students will:

1. Explain the organization, services provided, and dispatch policies of the fire department.
2. Describe the theory of fire behavior, phases of fire, types of fires, and the methods of fire control.
3. Describe the importance of firefighter safety and explain what constitutes protective clothing.
4. Assemble, don, and use a self-contained breathing apparatus.
5. Use proper rope inspection procedure, and tie the standard knots and hitches used by the fire department.
6. Describe the components of a water supply system and use the proper method of operating a fire hydrant.
7. Explain the types, functions, and maintenance of fire apparatus.
8. Perform the standard hose rolls, carries, and evolutions used by the fire department.
9. Perform the standard ladder evolutions used by the fire department.
10. Operate the various power tools used by the fire department.
11. Describe the principles of building construction, types of construction, and how building construction relates to firefighting operations.
12. Perform forcible entry through various barriers using the proper tools and standard procedures.
13. Use search and rescue techniques in a structure to remove a victim.
14. Ventilate a structure successfully using both horizontal and vertical techniques and the proper equipment.
15. Use salvage cover throws for salvage overhaul.
16. Explain the importance of early salvage and proper overhaul techniques as applied to a structural fire.
17. Explain the overall tactical operations applied to a structural fire.
18. Extinguish a working interior fire in a structure following standard operating procedures.
19. Describe the hazards that electricity poses to firefighters and cite specific electrical emergencies.
20. Describe radiological hazards faced by firefighters and the methods for monitoring exposure levels.
21. Extinguish various fires involving special emergencies that are encountered by firefighters.

22. Describe the proper procedures to follow when performing special rescue operations and other hazardous emergencies encountered by firefighters.
23. Explain the importance of firefighters maintaining a high level of physical and mental fitness.
24. Describe the function of fire prevention and investigation programs in the fire department.
25. Research the correct responses to numerous fire code violation questions posed.

D. Course Content:

Will include :

1. Fire Behavior
 - a. Sources of Heat Energy
 - b. Heat Transfer
 - c. Principles of Fire Behavior
 - d. Thermal Layering of Gases
 - e. Products of Combustion
 - f. Fire Extinguishment Theory
 - g. Classification of Fires and Extinguishment Theory
2. Portable Extinguishers
 - a. Extinguisher Rating System
 - b. Selecting and Using Portable Fire Extinguishers
 - c. Types of Portable Fire Extinguishers
 - d. Damaged Extinguishers
 - e. Obsolete Extinguishers
 - f. Inspection of Fire Extinguishers
3. Firefighter Personal Protective Clothing
 - a. Personal Protective Clothing
 - b. Protective Breathing Apparatus
 - c. Personal Alert Safety System
4. Ropes and Knots
 - a. Rope Materials
 - b. Rope Construction
 - c. Life Safety and Utility Rope Knots
 - d. Rope Care and Maintenance
 - e. Storage of Ropes
 - f. Hoisting Tools and Equipment
5. Rescue and Extrication
 - a. Rescue and Extrication Tools and Equipment
 - b. Carries and Drags
 - c. Rope Rescue
 - d. Rescue from Burning Buildings
 - e. Vehicle Extrication
 - f. Special Rescue Situations
6. Forcible Entry
 - a. Forcible Entry Tools
 - b. Care and Maintenance of Forcible Entry Tools
 - c. Opening Doors
 - d. Fences
 - e. Opening Windows
 - f. Opening Floors
 - g. Opening Walls
7. Ventilation
 - a. Advantages of Ventilation
 - b. Considerations Affecting the Decision to Ventilate
 - c. Vertical Ventilation
 - d. Horizontal Ventilation
 - e. Forced Ventilation

8. Ladders
 - a. Basic Parts of a Ladder
 - b. Ladder Types
 - c. Aerial Apparatus
 - d. Construction and Maintenance
 - e. Service Testing Ground Ladders
 - f. Handling Ladders
 - g. General Procedures for Raising and Climbing Ladders
 - h. Ladder Raises
 - i. Climbing Ladders
 - j. Assisting a Victim Down a Ladder
 - k. Ladder Safety
9. Water Supply
 - a. Principles of Municipal Water Supply Systems
 - b. Kinds of Pressure
 - c. Fire Hydrants
 - d. Alternative Water Supplies
 - e. Rural Water Supply Operations
10. Fire Streams
 - a. Extinguishing Properties of Water
 - b. Friction Loss
 - c. Water Hammer
 - d. Fire Streams
 - e. Fire Hose Nozzles
 - f. Foams
11. Hose
 - a. Construction of Hose
 - b. Hose Size and Uses
 - c. Causes and Prevention of Hose Damage
 - d. General Care and Maintenance of Hose
 - e. Hose Couplings
 - f. Hose Appliances and Tools
 - g. Hose Rolls
 - h. Direction of Hose Lays
 - i. Basic Hose Loads
 - j. Hose Loading Guidelines
 - k. Coupling and Uncoupling Hose
 - l. Preconnected Hose Loads for Attack Lines
 - m. Hose Lay Procedures
 - n. Handling Hoselines
 - o. Advancing Hoselines
 - p. Operating Hoselines
 - q. Deploying Master Stream Devices
 - r. Service Testing Fire Hose
12. Fire Control
 - a. Suppressing Class A (Structural) Fires
 - b. Suppressing Class B Fires
 - c. Suppressing Class C Fires
 - d. Suppressing Class D Fires
 - e. Fire Company Tactics
13. Automatic Sprinkler Systems
 - a. Sprinkler System Effects on Life Safety
 - b. Sprinkler System Fundamentals
 - c. Water Supply
 - d. Types of Sprinkler Systems

- e. Factors to Consider During Fires at Protected Properties
- 14. Salvage and Overhaul
 - a. Planning For Salvage Operations
 - b. Salvage Covers and Equipment
 - c. Methods of Folding and Spreading Salvage Covers
 - d. Improvising with Salvage Covers
 - e. Covering Openings
 - f. Overhaul
- 15. Building Construction
 - a. Types of Building Construction and the Basic Hazards
 - b. The Effects of Fire on Common Building Materials
 - c. Firefighter Hazards Related to Building Construction
- 16. Firefighters' Responsibility in Fire Case Determination
 - a. The Firefighters' Role
 - b. Conduct and Statements at the Scene
 - c. Securing the Fire Scene
 - d. Legal Considerations
- 17. Fire Alarms and Communication
 - a. The Communications Center
 - b. Reporting a Fire
 - c. Methods of Receiving Alarms from the Public
 - d. Radio Procedures
- 18. Fire Prevention and Public Fire Education
 - a. Personal Requirements for Firefighters who Perform Inspections
 - b. Inspection Equipment
 - c. Fire Company Inspection Procedures
 - d. Fire Hazards
 - e. Inspecting Fire Detection Systems
 - f. Dwelling Inspections
 - g. Home Fire Safety
 - h. Stop, Drop, and Roll
 - i. Smoke Detectors
 - j. Fire Exit Drills for Schools
 - k. Fire Station Tours
- 19. Firefighter Safety
 - a. Safety Standards
 - b. Goals and Objectives
 - c. Employee Interest
 - d. Physical Fitness and Health Consideration
 - e. Fireground Safety
 - f. Tool and Equipment Safety
 - g. Emergency Power and Lighting Equipment
 - h. Safety in Training
 - i. Infections Disease Control