

COCONINO COMMUNITY COLLEGE

COURSE OUTLINE

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A. Identification:

1. Subject Area: Fire Science
2. Course Number: FSC 236
3. Course Title: FIREFIGHTER OCCUPATIONAL SAFETY
4. Credit Hrs: 3
5. Catalog Description:
Informational base to reduce injuries to firefighting personnel. Awareness, training, and research of equipment to develop a safety program to meet the needs of the fire service. Three lecture.

B. Course Goals:

To provide the students with the understanding of the basic safety procedures and precautions used on the fire ground.

C. Course Outcomes:

Students will:

1. Identify the concepts of accident control relating to fire service.
 2. Identify the responsibilities of personnel operating on the fire ground relating to fire safety.
 3. Understand the criteria used in developing protective clothing standards for firefighting equipment.
 4. Recognize the main points for developing a safety program for the fire department.
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1. List the five factors in an accident sequence and describe their interrelatedness.
 2. Identify the classification of accidents acts and conditions, into (ANSI) categories.
 3. List three human factors which contribute to accidents.
 4. Explain the importance of physical environment and accident prevention.
 5. Identify and describe four alternatives available for firefighters to use in eliminating or reducing the consequences of the accident-injury/loss occurrence.
 6. Construct a job analyses in the department safety program.
 7. Construct a sample department safety policy.
 8. Identify program constraints which may inhibit a safety program.
 9. Describe the interrelationship of a safety program with the department.
 10. Design a sample accident/injury record form.
 11. Identify the components in accident investigation.
 12. List the purpose for accident investigation.
 13. Describe the importance of accident analysis and the possible impact on future accidents.
 14. Describe the importance of location, design and layout of the station in designing a safety program.
 15. Explain the possible impact of the following in designing a safety program.
 - a. walking - working surfaces
 - b. illumination
 - c. electrical considerations
 - d. maintenance and shop areas
 - e. basic housekeeping
 - f. sanitation
 - g. yard maintenance
 - h. visitors
 - i. office area
 16. Identify hazards in lifting.
 17. Demonstrate proper lifting techniques.
 18. Identify and describe the basic guidelines to follow when using hand tools an power tools.

19. Describe various safety techniques in vehicle and equipment maintenance.
20. List factors which can result in the misuse of protective equipment.
21. List three basic ways to safeguard against hazards.
22. Describe the essential qualities of full protective clothing.
23. Describe the special impervious garments which shall be worn during chemical emergencies.
24. Identify the reasons for wearing special garments during chemical emergencies.
25. Describe the most common types of breathing apparatus.
26. Demonstrate safety check on aerial ladders and on ropes.
27. Describe the instructor's role in safety training.
28. Design a training sequence used in an ideal training situation.
29. Identify the critical areas of vehicle maintenance which must be frequently inspected.
30. List the key factors in selecting respond routes.
31. Identify situations and factors which impact on selecting the response route.
32. Identify correct procedures and positions for firefighting crew when traveling to the scene.
33. Describe the limitations and characteristics of the fire vehicle (apparatus).
34. List and describe how weather and/or environmental conditions may impact on the operation of a fire vehicle.
35. Describe the officer's role at the emergency scene.
36. List the traditional steps in sizing up an emergency scene.
37. Describe the role of the command post and the emergency scene.
38. Explain the procedures for dealing with animals on the fire scene.
39. Describe the officer's responsibilities for recognizing and dealing with the fatigue and exhaustion of the firefighters.
40. Design a sample departmental policy used in handling electrical exposure.
41. Identify possible problems to be addressed during building collapse.
42. List the signs which may indicate the hazard of building collapse.
43. Demonstrate the safe use of various power tools.
44. Explain the departmental procedures for responding to situations of civil unrest.
45. Identify various area consulting technical associations that can be contacted in specific hazardous situations.
46. Describe the procedures for cleanup of chemical spills.
47. List various symptoms which can be identified as chemical after effects.
48. Identify the safety rules when dealing with reactive chemicals, with electrical systems.
49. List the factors affecting electrical shock.
50. Explain the possible hazards with the following around electrical systems: (a) nozzle streams; (b) ground ladders; (c) aerial apparatus; (d) poles; (e) downed wires; and, (f) underground lines.
51. List the guidelines for dealing with electrical emergencies.
52. Identify and describe the basic types of radiation and their biological effects.
53. Demonstrate the proper usage of various types of radiation detection equipment.
54. Identify the emergency operation procedures used when approaching the scene of a radioactive accident.
55. Demonstrate the selection of proper tools and equipment.
56. Perform an inspection of a structure using department guidelines.
57. Identify the procedures that must be taken when inspecting the following: (a) fire detection devices; (b) fire suppression devices; and (c) hydrants an fire equipment.
58. Identify the role and responsibilities of the inspector within the department.
59. Complete and analyze a safety checklist for firefighters.

D. Course Content:

Will include:

1. Accident Control Concepts
 - a. accident sequence
 - b. injury
 - c. physical environment
 - d. risk management concepts

2. Essentials of a Safety Program
 - a. goals and objectives
 - b. management interest and attitude
 - c. accident records
 - d. training
 - e. medical profile
3. Safe Use of Facilities
 - a. station design for safety
 - b. working areas
 - c. illumination
 - d. visitors
 - e. office safety
4. Station House Operating Procedures
 - a. hand and power tools
 - b. vehicle maintenance
 - c. handling hose
 - d. equipment maintenance
 - e. maintaining protective equipment
5. Personnel Protective Equipment
 - a. full protective clothing
 - b. head protection
 - c. hand protection
 - d. foot protection
 - e. eye protection
 - f. hearing protection
 - g. protective breathing apparatus
6. Safety in Training
 - a. physical conditioning
 - b. personal protection equipment
 - c. training ground safety
 - d. elevated high pressures
7. Enroute Hazards
 - a. seat belts
 - b. crew riding positions
 - c. safe driving
 - d. brakes
 - e. weather considerations
8. The Emergency Scene
 - a. size up
 - b. command post
 - c. fatigue and relief
 - d. cold weather firefighting
 - e. electrical exposures
9. Special Hazards
 - a. chemicals
 - b. proper extinguishing agents
 - c. electrical power shutoff
 - d. pre-planning
10. Inspection Safety
 - a. structural considerations
 - b. hydrants and fire equipment
11. Health Considerations
 - a. strains and sprains
 - b. heart disease
 - c. cigarette smoking

d. emotional trauma and stress