

Course: Fire and EMS

Credit : 2 Units

Pre-Requisite: 11th and 12th Grades or an Active Member of a Volunteer Department

Description: Protective Services / Fire Service and Emergency Medical Service

This one semester program presents a comprehensive educational program to students interested in pursuing a career, volunteer service, or post-secondary education in Fire Service or Emergency Medical Services. In the Emergency Medical segment, the student will gain certification as First Responders through Upstate Medical Service, which lays the groundwork for future emergency medical technical classes. The Firefighting segment prepares students to take the S.C. Fire Academy classes either as a paid firefighter or a volunteer fire fighter.

Text: Essentials to Firefighting, 4th Edition, Published by IFSTA. Oklahoma State University, 1998

First Responder 8th Edition, by Bergeron and BizJak. Brady Publishing, 1996.

I. Fire Technology Education and the Firefighter Selection Process

Objectives: Upon completion of this chapter, you should be able to:

1. Explain the differences between a community college certificate, an associate degree, and a four-year degree in fire technology.
2. List the advantages of obtaining a certificate or degree.
3. Assess your career potential in the fire service.
4. Give examples of work ethics.
5. Explain the need for sensitivity to diversity inside and outside of the workplace.
6. Describe the different levels and availability of training programs.
7. Give examples of different types of personnel development programs.
8. List the steps in the selection process and important aspects of each.
9. List the ways you can prepare for the selection process.
10. Explain the purpose and importance of the probationary period.

A. Introduction

B. Fire Technology Programs

C. Career Potential Assessment

D. Work Ethics and Human Relations

E. Training Programs

F. Personnel Development Programs

G. Selection Process

H. Summary

I. Test

II. Fire Protection Career Opportunities

Objectives:

1. Upon completion of this chapter, you should be able to:
2. Identify fire protection jobs in the public and private fire service.
3. List duties and requirements of the position of firefighter trainee and firefighter.
4. List duties and requirements of fire heavy equipment operator.
5. List duties and requirements of firefighter forestry aid.
6. Give examples of fire service jobs other than firefighter.

A. Introduction

B. Public Fire Protection Careers

C. Private Fire Protection Careers

D. Summary

E. Test

III. Public Fire Protection

Objectives:

1. Identify the origins of modern fire protection
2. Describe the evolution of fire protection
3. List the causes of the demise of the volunteer fire companies in the major cities
4. Identify the U.S. fire problem as it currently stands.
5. List the general responsibilities of the modern fire service.
6. Describe the evolution of modern fire fighting equipment.
7. Describe the evolution of protective clothing and equipment.
8. Describe how major fire losses have often effected the modern fire service.
9. List the reasons for fire defense planning.

A. Introduction

B. Evolution of Fire Protection

C. Equipment

D. Fire Stations

E. Personal Protective Equipment

F. Fire Losses

G. The U.S. Fire Problem Today

H. Purpose and Scope of Fire Agencies

I. Fire Defense Planning

J. The Future of Fire Protection

K. Summary

L. Test

IV. Chemistry and Physics of Fire

Objectives:

1. Define the difference between the fire triangle and the fire tetrahedron
2. Describe what constitutes an oxidizer

3. Describe what constitutes a fuel
4. Illustrate the states of matter
5. Explain the process of pyrolysis
6. Describe the properties affecting solid fuels
7. Describe the properties affecting liquid fuels
8. Describe the properties affecting gas fuels
9. Differentiate heat and temperature
10. Illustrate the four methods of heat transfer
11. Illustrate the four classifications of fire
12. Describe the three phases of fire

A. Introduction

B. Fire Defined

C. Fire Triangle

D. Fire Tetrahedron

E. Chemistry of Fire

F. Physics of Fire

G. Heat and Temperature

H. Heat Transfer

I. Classification of Fires

J. Phases of Fire

K. Summary

L. Test

V. Public and Private Support Organizations

Objectives:

1. Identify types of support organizations.
2. Identify the purpose of specific organization.

3. List how these organization assist the fire service.
4. Identify the organization to contact when information regarding the specific subject is required.

A. Introduction

B. National and International Organizations

C. Federal Organizations

D. State Organizations

E. Local Organizations

F. Periodical Publications

G. Summary

H. Test

VI. Fire Department Resources

Objectives:

1. List fire Department facilities.
2. List advantages of a department having it's own facilities
3. Describe the purpose of each of the fire department facilities
4. Describe the types of apparatus and their functions.
5. List the types of tools carried on fire apparatus.

6. Describe the use of the various tools carried on fire apparatus.
7. Describe the different types of personal protective equipment used by firefighters.
8. Describe the types and uses of aircraft in fire fighting.

A. Introduction

B. Fire Department Facilities

C. Fire Apparatus

D. Fire Tools and Appliances

E. Heavy Equipment

F. Personal Protective Equipment (PPE)

G. Aircraft

H. Summary

I. Test

VII. Fire Department Administration

Objectives:

1. Describe the six principles of command
2. List and describe the six components of the management cycle
3. Identify the four methods of communication
4. Describe fire department chain of command
5. Fill out a typical fire department organizational chart
6. Identify different fire department types
7. Identify the different ranks and their general responsibilities

8. Explain the terms customer service, one department concept, team building, and incident effectiveness
 - A. Introduction
 - B. Principles of Command
 - C. The Management Cycle
 - D. Fire Department Types
 - E. Communications
 - F. Summary
 - G. Test

VIII. Support Functions

Objectives

1. Identify the support functions required by the fire department
2. Describe the duties and responsibilities of the support function
3. Explain the need for the support functions
4. Explain the difference between a managerial support function and a technical support function
 - A. Introduction
 - B. Dispatch

- C. Transmission of Alarms
- D. Graphic Arts/Maps
- E. Hazardous Materials Control Unit
- F. Arson Unit
- G. Personnel
- H. Information Systems
- I. Business Manager
- J. Fire Business Management
- K. Technical Support
- L. Warehouse/Central Stores
- M. Repair Garage
- N. Radio Shop
- O. Adjutant/Aide
- P. Summary
- Q. Test

IX. Training

Objectives:

1. Identify the personnel and positions that make up a training bureau
2. Describe the need for training in the fire service
3. Explain the difference between technical and manipulative training
4. Describe how performance standards are determined
5. Explain how skills are developed
6. Explain the importance of skills maintenance Describe how adequate level of training is determined
7. Explain how training level applies to incident effectiveness
8. List areas in which firefighters require training

A. Introduction

- B. Training Bureau
- C. Purpose and Importance of Training
- D. Technical Training
- E. Manipulative Training
- F. Determining Adequate Levels of Training
- G. Performance Standards
- H. Skills Development
- I. Skills Maintenance
- J. Skills Assessment
- K. Standard Operating Procedures
- L. Training Records
- M. Relationship to Training Incident Effectiveness
- N. Required Training
- O. Summary
- P. Test

VIII. X. Fire Prevention

Objectives:

1. Describe the importance of fire prevention
2. Describe the activities performed by a fire prevention bureau.
3. List methods of public education as it relates to fire prevention.
4. Explain how the authority to enforce fire prevention regulations is derived.
5. Describe a typical fire prevention bureau organization.
6. Describe the importance of fire information reporting.
7. List the uses of fire-related statistics.

A. Introduction

B. Fire Prevention Bureau

C. Professional Standards

D. Purpose of Fire Prevention Activities

E. Fire Prevention Activities

F. Fire Prevention Terms

G. Methods of Fire Prevention

H. Hazard Evaluation and Control

I. Public Education

J. Organization

K. Legal Authority

L. Fire Prevention Inspection

M. Determination of Fire Cause

N. Fire Information Reporting

O. Summary

P. Test

XI. Codes and Ordinances

Objectives:

1. Explain the relationship between federal, state, and local regulation
2. Explain who is responsible for enforcing codes and ordinances at the different levels
3. Explain why codes and ordinances are created
4. Describe how codes and ordinances are adopted
5. Describe how codes and ordinances are affected by court decision
6. Explain the relationship of codes and standards
7. Give the definition of legal terms as they apply to codes and ordinances

A. Introduction

B. Definition of Laws

C. Lawsuits

- D. Personnel Complaints
- E. The Court System
- F. Relationship of Federal, State, and Local Regulations
- G. Fire Prevention
- H. Model Fire Codes
- I. Code Development
- J. Relationship of Codes to Standards
- K. Operation of Emergency Vehicles
- L. Infectious Disease
- M. Good Samaritan Laws
- N. Personnel Safety
- O. Scene Management
- P. Summary
- Q. Test

XII. Emergency Incident Management

Objectives:

1. Describe the components of water supply system
2. Explain the importance of a dependable water supply system
3. Describe the components and importance of a fire department water supply program
4. Describe fire detection types of extinguishing systems and their components
5. Describe the different types of extinguishing agents
6. Explain how the various types of extinguishment agents work to extinguish

A. Introduction

B. Public Water Companies

C. Private Water Companies

D. Water Supply Systems

E. Fire Hydrants

- F. Water Systems Program
- G. Auxiliary Sources of Water Supply
- H. Private Fire Protection Systems
- I. Extinguishing Agents
- J. Extinguishing Systems
- K. Summary
- L. Test

XIII. Emergency Incident Management

Objectives

1. Upon completion of this chapter, you should be able to
2. Explain the need for a plan at every incident
3. Differentiate between offensive, defensive and combination modes of attack
4. Explain the need for organized thought processes in incident assessment
5. Describe the strategic priorities at an incident
6. Explain the terms strategic, tactics, and tasks
7. Explain the need for size up of an incident
8. Explain how a size up is performed and what information it is necessary to communicate
9. Describe the NIIMS Incident Command System
10. Explain the need for unified command on a multijurisdictional incident

- A. Introduction
- B. Management Responsibility
- C. Incident Planning

D. Incident Command System

E. Summary

F. Test

IX.

X. XIV. Emergency Operations

Objectives:

1. Identify the role of the fire department at various types of emergencies
2. List limitations of the fire department in certain emergency types
3. List important safety considerations when operating at different types of emergencies

A. Introduction

B. Personnel

C. Structure Fire Fighting

D. Electrical Installations

E. Wildland Fire Firefighting

F. Wildland Urban Interface/Intermix Fire Fighting

G. Oil Fire Fighting

- H. Hazardous Material Incidents (Hazmat)
- I. Emergency Medical Operations
- J. Vehicle Accidents
- K. Vehicle Fires
- L. Aircraft Fire Fighting
- M. EMS and Fire Fighting with Aircraft
- N. Summary
- O. Test

Unit 15 First Responders DOT Certification Course

This course is a 40 hour certification course taught by Upstte Emergency Medical Services instructors. The student will become certified by the American Heart Association in adult and infant CPR and certified as a DOT First Responder.

Unit 16 Co-OP Work Experience

In this segment of the Protective Services course, the student will be assigned to an emergency service agency and will with that fire or EMS unit during the entire Co-Op training aspect.