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Course Outline for FST 3

FIREFIGHTER SAFETY AND SURVIVAL

Effective: Fall 2019

I. CATALOG DESCRIPTION:

FST 3 — FIREFIGHTER SAFETY AND SURVIVAL — 3.00 units

This course introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services; assessing fire dangers and handling common fire situations; risk abatement and personal preparation for unforeseen fire emergencies; roles and responsibilities in educating the public on fire safety; development of a survival attitude using problem-solving techniques for increased situational awareness and self-reliance in an emergency.

3.00 Units Lecture

Grading Methods:

Letter Grade

Discipline:

- Fire Technology

	MIN
Lecture Hours:	54.00
Expected Outside of Class Hours:	108.00
No Unit Value Lab	18.00
Total Hours:	180.00

II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

III. PREREQUISITE AND/OR ADVISORY SKILLS:

IV. MEASURABLE OBJECTIVES:

Upon completion of this course, the student should be able to:

- Define and describe the need for cultural and behavioral change within the emergency services relating to safety, incorporating leadership, supervision, accountability and personal responsibility
- Explain the need for enhancement of personal and organizational accountability for health and safety, and the logistical role of personal accountability systems and Rapid Intervention Crews
- Define how the concepts of risk management affect strategic and tactical decision-making;
- Describe and evaluate circumstances that might constitute an unsafe act
- Explain the concept of empowering all emergency services personnel to stop unsafe acts
- Validate the need for national training standards as they correlate to professional development inclusive of qualifications, certifications, and re-certifications
- Defend the need for annual medical evaluations and the establishment of physical fitness criteria for emergency services personnel throughout their careers
- Explain the vital role of local departments in national research and data collection systems
 - Illustrate how technical advancements can produce higher levels of emergency services safety and survival
- Explain the importance of investigating all near misses, injuries, and fatalities
- Discuss how incorporating the lessons learned from investigations can support cultural change throughout the emergency services, especially when firefighter and civilian injuries and deaths are factors
- Describe how obtaining grants can support safety and survival initiatives
- Formulate an awareness of how adopting standardized policies for responding to emergency scenes can minimize near-misses, injuries, and deaths
- Explain how the increase in violent incidents impacts safety of emergency services personnel when responding to emergency scenes
- Recognize the need for counseling and psychological support for emergency services personnel, their families, as well as identify access to local resources and services
- Describe the importance of public education as a critical component of life safety programs
- Describe the importance of fire sprinklers and code enforcement
- Explain the importance of safety in the design of apparatus and equipment
- Explain the general safety precautions to implement for all emergencies
- Describe the procedures for responding on emergency vehicles
- Describe the safety considerations when handling energized electrical equipment incidents
- Describe the components of structural personal protective equipment and personal alert safety systems
- Describe safety considerations for incidents involving structure fires and structural collapse

- X. Explain safety considerations when performing fire ground operations involving ventilation, fire extinguishment, and hose line advancement
- Y. Explain safety considerations and procedures for vehicle fires and traffic control devices;
- A@. Perform basic firefighter survival skills when lost in a structure
- AA. Perform methods for escaping an entrapment emergency
- AB. Demonstrate confidence and composure while navigating a blind course wearing respiratory protection
- AC. Identify and explain the 16 safety initiatives
- AD. Explain concepts of risk management and mitigation as it pertains to emergency services

V. CONTENT:

A. Lecture

1. Introduction
 - a. History of fire service culture
 - b. Organizational culture
 - c. Individual role in culture/behavior
 - d. History of line of duty deaths and injuries statistics
 - e. Defining the nature of the problem
2. The national context, health and safety
 - a. National Fire Protection Association (NFPA)
 - b. Occupational Safety and Health Administration (OSHA)
 - c. Medical and fitness standards
 - d. Data collections (National Fire Incident Report System)
 - e. Research/Investigation
 1. National Institute of Standards and Technology (NIST)
 2. National Institute of Occupational Safety and Health (NIOSH)
3. Training, Equipment, Response
 - a. Certification and credentialing
 - b. Fundamental rescue considerations
 1. Recognition of personal limitations
 2. Tools of the trade
 3. Safety considerations during search and rescue
 4. Basic rescue
 - a. Emergency procedures
 - b. Rescue techniques
4. Fire fighting apparatus and equipment
 - a. Apparatus
 1. Design standards for new apparatus
 2. Licensing and certifications for vehicle operations
 3. Safety considerations when operating vehicles
 - b. Equipment
 - c. Fire fighting devices
 1. Fire extinguishers
 2. Hose lines
 3. Devices improvised in response to specific situations
 - d. Fire fighters personal protective equipment (PPE)
 1. Reasons for wearing
 2. Reasons for failure of clothing
 3. Self-contained breathing apparatus (SCBA)
 - a. Air consumption
 - b. SCBA Emergencies
 4. Personal alarm safety system (PASS)
5. Safe and competent response
 - a. Role of fire department organization
 1. Policies and procedures
 2. Enforcement of training standards
 - b. Responding to emergency scenes
 - c. Handling emergency situations
 1. Preplanning for emergencies
 2. Fire and health danger assessment
 3. Evacuating premises
 4. Emergency information report
 - d. Fire protection in open area
 1. Wildland
 2. Transportation
 3. Storage
 - e. Safety precautions
 1. Structure fires
 2. Vehicle fires
 3. Wildland fires
 4. Violent incidents
 5. All other emergency situations
6. Firefighter survival training
 - a. Developing a survival attitude
 1. Potential for serious injury and death
 2. Situational awareness
 - b. Mayday
 1. Preventing a Mayday
 - a. Importance of thorough scene size-up
 - b. Preincident planning procedures
 2. Situations that create or may create a Mayday
 3. Mayday procedures
 - c. SCBA emergencies
 1. NFPA 1404
 - a. Standards for fire service respiratory protection training
 - b. Individual air management program
 2. Air consumption for survival
 - a. Consumption rate testing
 - b. Reducing consumption
 3. Checking SCBA

- a. Daily check
 - b. Emergency procedures check
 - 4. Common SCBA emergencies
 - 5. Alternative means of obtaining additional air
- 7. Organizational Health and Safety Profile
 - a. Personal and organizational accountability
 - b. Present condition/culture
 - c. Investigations - internal
 - d. Analyzing your profile
 - e. Utilizing grants to meet needs
- 8. Risk management
 - a. Risk management concepts and practices
 - b. Unsafe acts
 - c. Empowerment definition
- 9. Prevention
 - a. Common fire and health hazards
 - 1. Housekeeping
 - 2. Electrical
 - 3. Flammable gasses and liquids
 - 4. Common hazardous substances
 - b. Fire detection devices for the home and/or workplace
 - 1. Selection
 - 2. Operation
 - 3. Maintenance
 - c. Home fire sprinklers
 - d. Code enforcement
 - e. Public education / fire and life safety
 - 1. Roles and responsibilities
 - 2. Principles of fire behavior
 - 3. Human behavior in fire
 - f. Counseling and psychological support
- B. Laboratory
 - 1. Personal protective equipment
 - a. Don structure fire PPE
 - b. Don SCBA
 - 2. Firefighter survival skills
 - a. Demonstrate how to read couplings using hands to follow hose toward exit
 - b. Demonstrate how to escape entanglement using the swim or sweep method
 - c. Demonstrate how to escape entanglement using the SCBA removal method
 - d. Demonstrate how to call a Mayday
 - e. Demonstrate how to perform personal procedures to assist in successful recovery
 - f. Demonstrate how to navigate the SCBA confidence course using survival skills when needed

VI. METHODS OF INSTRUCTION:

- A. Audiovisual aids
- B. **Lecture** -
- C. Group discussion
- D. **Field Trips** -
- E. Online research assignments
- F. Practical field applications
- G. Performance Examinations
- H. Simulated problem solving

VII. TYPICAL ASSIGNMENTS:

- A. As a member of a research group, prepare and deliver a fire service safety resource contact presentation
- B. Prepare a written analysis based on research of the 16 Firefighter Life Safety Initiatives
- C. Demonstrate methods of escaping entanglement while wearing firefighter PPE

VIII. EVALUATION:

Methods/Frequency

- A. Exams/Tests
 - one written final exam
- B. Quizzes
 - bi-weekly
- C. Oral Presentation
 - one
- D. Group Projects
 - one
- E. Class Participation
 - daily
- F. Other
 - 1. Manipulative performance exercises - two
 - a. Application of Firefighter Safety and Survival ground school applications

IX. TYPICAL TEXTS:

- 1. IAFC and NFPA. *Fundamentals of Firefighting Skills*. 3rd ed., Jones and Bartlett Learning, 2014.
- 2. IAFC and NFPA. *Hazardous Materials: Awareness and Operations*. 2nd ed., Jones and Bartlett Learning, 2016.
- 3. Zimmerman, Don. *Firefighter Safety and Survival*. 2nd ed., Jones and Bartlett Learning, 2015.
- 4. Ford, Travis. *Fire and Emergency Services Safety and Survival*. 2nd ed., Pearson, 2017.
- 5. Teie, William. *Firefighters Handbook on Wildland Firefighting*. 3rd ed., PennWell, 2005.
- 6. Fire Fighter Survival, California State Fire Training, Instructor and Student Guide 2010

X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. LPC Fire Service Technology Uniform