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## Course Outline for FST 52

### FIREFIGHTER SAFETY AND SURVIVAL

Effective: Fall 2018

#### I. CATALOG DESCRIPTION:

FST 52 — 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

	<b>MIN</b>
<b>Lecture Hours:</b>	54.00
<b>Expected Outside of Class Hours:</b>	108.00
<b>No Unit Value Lab</b>	18.00
<b>Total Hours:</b>	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:

##### A. **Methods**

- 1. Exams/Tests
- 2. Quizzes
- 3. Oral Presentation
- 4. Group Projects
- 5. Class Participation
- 6. Lab Activities
- 7. Class Performance
- 8. Other:
  - a. Manipulative performance exercises

##### B. **Frequency**

- 1. Quizzes will be provided on a bi-Weekly basis
- 2. Two TBA gscheduled lab sessions to affect manipulative skills to be performed and evaluated.
  - a. Application of Firefighter Safety and Survival ground school applications
- 3. Written final at the end of the course
- 4. Daily class participation
- 5. One group project
- 6. One assigned subject for oral presentation

#### IX. TYPICAL TEXTS:

- 1. IAFC and NFPA (2014). *Fundamentals of Firefighting Skills* (3rd ed.). Burlington , MA: Jones and Bartlett Learning.
- 2. IAFC and NFPA (2016). *Hazardous Materials: Awareness and Operations* (2nd ed.). Burlington , MA: Jones and Bartlett Learning.
- 3. Zimmerman, D. (2015). *Firefighter Safety and Survival* (2nd ed.). Burlington , MA: Jones and Bartlett Learning.
- 4. Ford, T.M. (2017). *Fire and Emergency Services Safety and Survival* (2nd ed.). New York, NY: Pearson.
- 5. Fire Engineering (2005). *Firefighters Handbook on Wildland Firefighting* (3rd ed.). Fair Lawn, NJ: PennWell.
- 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