

Las Positas College
3000 Campus Hill Drive
Livermore, CA 94551-7650
(925) 424-1000
(925) 443-0742 (Fax)

Course Outline for FST 65

FIRST RESPOND HAZ MAT/INCIDENT

Effective: Fall 2018

I. CATALOG DESCRIPTION:

FST 65 — FIRST RESPOND HAZ MAT/INCIDENT — 3.00 units

Hazard recognition and identification; incident response safety procedures and decontamination. Response to hazardous materials emergencies. Emphasis on skills and knowledge necessary to protect lives, property, and the environment. Meets the California Specialized Training Institute's requirements for Hazardous Materials First Responder Operational Awareness and Hazmat First Responder "Decon" Certifications under California Government Code Section 1503. Principles of Incident Command System, basic ICS structure and common responsibilities. Meets the State Fire Marshall's Office I-200 Basic ICS (2006) Certification Requirement.

3.00 Units Lecture

Strongly Recommended

FST 53 - Fire Behavior and Combustion
with a minimum grade of C

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:

Before entering this course, it is strongly recommended that the student should be able to:

A. FST53

1. Identify the fundamental theories of fire behavior and combustion
2. Differentiate the various types of extinguishing agents, methods and techniques to the theory of fire extinguishment base on development of the flame plume
3. Identify Physical properties of the three states of matter
4. Categorize the components of fire
5. Explain the physical and chemical properties of fire
6. Describe and apply the process of burning
7. Define and use basic terms and concepts associated with the chemistry and dynamics of fire
8. Discuss various materials and their relationship to fires as a fuel
9. Explain basic terminology, definitions and terms associated with basic fire chemistry
10. Identify how physical forces caused by fire can affect the changes in the physical states of matter
11. Identify the Department of Transportation warning placard and labeling system
12. Describe the Department of Transportation Hazard Class System
13. Compare and contrast flashover and backdraft in a compartmentalized fire

IV. MEASURABLE OBJECTIVES:

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

- A. Define and categorize each of the eight basic hazard classes;
- B. Describe the various physical and chemical properties;
- C. Utilize the various methods of identifying hazardous materials;
- D. Describe the duties and responsibilities of the various response agencies;
- E. Describe the procedures for responding safely to Hazardous Materials Incidents

- F. Establish and utilize the Incident Command System for ICS 200;
- G. Initiate incident scene isolation and zoning;
- H. Describe evacuation procedures;
 - I. List and describe the various methods of containing hazardous materials;
- J. Select the appropriate emergency actions at potential Boiling Liquid Expanding Vapor Explosion (BLEVE) incidents;
- K. Describe the forms of toxic exposure and how to complete exposure records;
- L. Select the appropriate level of protective clothing;
- M. Establish decontamination procedures;
- N. Describe different methods and levels of Decontamination Procedures

V. CONTENT:

- A. Hazardous Material definitions, classes and properties
 - 1. Classifications
 - 2. Definitions and properties
- B. DOT placarding and labeling system
 - 1. Component parts of DOT warning system
 - a. Table I and Table II materials
 - b. Interpreting hazards
 - c. DOT shipping papers
 - 2. Types of shipping papers
 - a. Location for mode of transportation
 - b. CHEMTREC
- C. The DOT Emergency Response Guidebook
 - 1. Purpose and limitations
 - 2. Contents
 - 3. Organization
 - 4. Use
- D. The NFPA 704 Warning System
 - 1. Intentions of the 704 Warning System
 - 2. Where it is used
 - 3. Components utilized in the system
 - 4. Criteria for numerical classification of hazards
 - 5. Interpreting information
- E. The EPA Pesticide Labeling System
 - 1. pesticides defined
 - 2. classifications of pesticides
 - 3. mandatory information required on labels
 - 4. signal words
 - 5. analysis of information on pesticide labels
- F. Reference Books and Material Safety Data Sheets (MSDS)
 - 1. Categories of information sources
 - 2. Use of references
 - 3. Material safety data sheets
- G. Container recognition in Highway Transportation
 - 1. Types of containers
 - 2. Products carried
 - 3. Safety considerations
- H. Container recognition in Railroad Transportation
 - 1. Types of containers
 - 2. Products carried
 - 3. Safety considerations
 - 4. Tank car markings
 - 5. Lettering and specifications
 - 6. Fumigation labels, dome placards, and way bills
- I. Incident response safety procedures and size-up
 - 1. Responding safely
 - 2. Elements of size-up
 - 3. Components of condition report
 - 4. Levels of incidents
- J. Overview of the Incident Command System
 - 1. Components of ICS
 - 2. Responsibilities of positions with ICS
 - 3. Attributes of an IC
 - a. Incident Mitigation Operations
 - 4. Incident scene isolation and zoning
 - 5. Evacuation procedures
 - 6. Decontamination procedures-overview
 - 7. Containment of hazardous materials
 - a. Incident Action Plan
 - 8. How the organization initially develops at an incident
 - 9. How the organization expands and / or contracts
 - 10. Transfer of command / unified command
 - 11. Organization development exercise
 - a. Decision making at potential "BLEVE" Incidents
 - 12. "BLEVE" defined
 - 13. Causes and effects of "BLEVE" Incidents
 - 14. Conditions necessary for "BLEVE" to occur
 - 15. Offensive / defensive decisions
 - a. Pre-emergency planning
 - 16. Value of pre-emergency planning
 - 17. Elements to be identified
 - 18. Components of pre-planning
 - a. Introduction to toxicology
 - 19. Poison's, toxicology, and toxicity defined
 - 20. Dose-response relationship
 - 21. Toxicology terms
 - 22. Factors influencing toxicity and routes of exposures
 - 23. Exposure reports
 - a. Protective Clothing for Hazardous materials Emergencies

- 24. EPA levels of protection
 - a. Level A
 - b. Level B
 - c. Level C
 - d. Level D
 - 1. Selection criteria
 - 2. Types of chemical resistant clothing
 - 3. Advantages and disadvantages of suits
- K. Decontamination
 - 1. Types of Decontamination
 - a. Emergency Decontamination
 - 1. Gross Decontamination
 - b. Technical Decontamination
 - 1. Entry Teams Decontamination
 - c. Mass Decontamination
 - 1. MCI-Terrorist Event
- L. Methods of Decontamination
 - 1. Absorption
 - a. Adsorption
 - b. Covering
 - c. Dilution
 - d. Disinfection
 - e. Disposal
 - f. Emulsification
 - g. Neutralization
 - h. Overpacking
 - i. Removal
 - j. Solidification
 - k. Vacuuming
 - l. Vapor Dispersion
- M. Decontamination Process
- N. Decontamination Plan – Incident Command

VI. METHODS OF INSTRUCTION:

- A. Group activities
- B. Lecture, discussion and example
- C. Audio-visual presentations
- D. Video
- E. Manipulative performance standards
- F. Problem-solving exercises
- G. Reading assignments
- H. Diagnostic
- I. Quizzes
- J. Overheads

VII. TYPICAL ASSIGNMENTS:

- A. Weekly reading Assignments
 - 1. Read Chapter in Chapter 2 in Text, "Hazardous Materials Incidents"
 - a. Read ICS Module 1, I-100 "ICS Orientation"
- B. Group Activities
 - 1. ICS-Role Playing, Developing the ICS Structure using ICS identifiers to a dynamic simulated scenario.
 - a. Manipulative performance utilizing appropriate procedures, tools and PPE's, with different decontamination scenarios.

VIII. EVALUATION:

- A. **Methods**
 - 1. Exams/Tests
 - 2. Quizzes
 - 3. Simulation
 - 4. Class Participation
 - 5. Class Performance
- B. **Frequency**
 - 1. One Individual Field Exercise - FRO Simulated Response to a Spill
 - 2. Participation in Mass Casualty -Emergency Decon and Technical Decon Simulation Exercise
 - 3. Bi-Weekly Quizzes
 - 4. One Final Exam

IX. TYPICAL TEXTS:

- 1. , -. *California Specialized Training Institute Workbook on Hazardous Materials*. Latest ed., First Responder Certification Program, 2017.
- 2. , -. *Incident Command System, National Training Curriculum Module 1-6*. Latest ed., National Wildfire Coordinating Group, 2017.
- 3. IAFC . *Hazardous Materials: Awareness and Operations*. 2nd ed., Jones and Bartlett Learning, 2014.
- 4. IFSTA. *Hazardous Materials For First Responders*. 5th ed., IFSTA, 2017.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. Level B Protective PPE with Boots and Gloves SCBA *Provided by LPC Fire Service Technology Program
- B. Notebook