

**FIRE 77 Course Outline as of Summer 2011****CATALOG INFORMATION**

Dept and Nbr: FIRE 77                      Title: HAZMAT FOR PUBLIC SAFETY  
 Full Title: Hazardous Materials for Public Safety  
 Last Reviewed: 9/25/2017

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.75	17.5	Lecture Scheduled	48.13
Minimum	3.00	Lab Scheduled	0.25	6	Lab Scheduled	4.38
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 96.25

Total Student Learning Hours: 148.75

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: FIRE399.61

**Catalog Description:**

A comprehensive study of hazardous materials, and emergency response to hazardous material incidents. Includes basic hazardous material chemistry, regulations, toxicology, the tactics and strategy of mitigation, decontamination, and scene management. Students will receive certificates in Hazardous Materials Incident Commander, First Responder Operations and First Responder Operations Decon from the California Specialized Training Institute (CSTI). This course is Police Officers Standards and Training (POST)certified.

**Prerequisites/Corequisites:****Recommended Preparation:**

Eligibility for ENGL 100 or ESL 100

**Limits on Enrollment:****Schedule of Classes Information:**

Description: A comprehensive study of hazardous materials, and emergency response to hazardous material incidents. Includes basic hazardous material chemistry, regulations, toxicology, the tactics and strategy of mitigation, decontamination, and scene management.

Students will receive certificates in Hazardous Materials Incident Commander, First Responder Operations and First Responder Operations Decon from the California Specialized Training Institute (CSTI). This course is POST certified. (Grade Only)

Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:

<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
---------------	----------------------	------------	-----------

<b>CSU Transfer:</b>	Transferable	Effective:	Fall 1998	Inactive:
----------------------	--------------	------------	-----------	-----------

<b>UC Transfer:</b>		Effective:		Inactive:
---------------------	--	------------	--	-----------

**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

**Outcomes and Objectives:**

1. Explain the Department of Transportation (DOT) hazard classifications and placard system.
2. Identify the physical and chemical properties of hazard classes and their health dangers.
3. Define the need for scene safety, isolation and notifications.
4. Describe the elements of scene management and the application of the Incident Command System (ICS) at hazardous materials incidents.
5. Identify the levels of training of hazardous material first responders and their limitations.
6. Describe the levels of personal protective equipment, their selection criteria and limitations.
7. Identify the health effects hazardous materials present to first responders.
8. Identify the disposal and documentation requirements associated with a hazardous materials incident.
9. Identify the need and method to communicate and coordinate with typical agencies from all levels of government authorized to deal with a hazardous materials incident.
10. List the factors used to determine evacuation or shelter in place.
11. Demonstrate principles of decontamination.
12. Describe the identification and hazard assessment techniques used during a hazardous materials incident.
13. Develop an incident action plan for a safe and competent response to a hazardous materials incident.
14. Identify Federal and California State laws and regulations related to hazardous materials.

**Topics and Scope:**

1. Introduction

- A. Hazmat as it pertains to an emergency response
- B. Agencies that are responsible for containment and cleanup
- C. Hazards and health effects of hazardous materials
- D. The role of responders in hazardous materials incidents
2. Hazardous Materials Recognition and Safety
  - A. Recognizing hazardous materials incidents
  - B. Hazardous materials warning signs
  - C. DOT hazard classes
  - D. Shipping papers
  - E. Safety considerations
  - F. Isolation of hazardous materials
  - G. Notifications in a hazardous materials incident
3. Command and Scene Management
  - A. ICS and scene management, organization, planning and communication
  - B. Implementing ICS at hazardous material events
4. Identification, Hazard Assessment and Action Plans
  - A. The five-step Identification and Hazard Assessment Process (IDHA)
  - B. Hazardous materials guidebooks and reference materials
  - C. Toxicology
  - D. Exposure and routes of entry
  - E. Predicted behavior and baseline questions
  - F. Action planning
5. Hazardous Materials Countermeasures
  - A. Non-intervention strategies
  - B. Defensive strategies
  - C. Offensive strategies
  - D. The incident commanders' role in countermeasure selection
6. Protective Actions
  - A. Authorities for protective action
  - B. Protective action considerations
  - C. Event planning
  - D. Special populations and protective actions
  - E. Protective action selection
7. Decontamination, Cleanup, Disposal and Funding
  - A. Decontamination
  - B. Minimizing exposure and contamination
  - C. Decon procedures
  - D. Emergency decon
  - E. Decon team roles and responsibilities
  - F. Clean-up considerations
  - G. Disposal requirements
  - H. Funding availability
8. Documentation, Reporting and Investigations
  - A. Required documentation
  - B. Hazardous materials reports
  - C. Exposure and training records
9. Agency Coordination and pPre-event Plans
  - A. Local, State and Federal hazardous materials agencies
  - B. Private sector hazardous materials resources
  - C. Types and levels of pre-event plans
10. Hazardous Materials Response Process
  - A. Response process basics

- B. Acronyms and checklists
  - C. Risk vs. gain process
  - D. ICS 202 process
  - E. Process selection and application
11. Managing Hazardous Materials Events
    - A. Managing the media
    - B. Use of Emergency Operations Centers (EOC) in hazardous material events
  12. Hazardous material exercises types and critiques
  13. Legal aspects
    - A. California State and Federal hazardous materials laws
    - B. Legal concepts
    - C. Liability issues

**Assignment:**

1. Analyze typical hazmat incidents through field exercises.
2. Explain in writing key aspects and physical properties of each hazard classifications.
3. Analyze, compare and apply laws and regulations applicable to emergency response.
4. Complete a technical report for the selected incident field exercise.
5. Describe in writing hazmat response policy and plan from an emergency response agency.
6. Term project - written report on a hazmat incident
7. Quizzes (6-10)

**Methods of Evaluation/Basis of Grade:**

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Technical report; hazmat response policy and and plan; and report on a hazmat incident

Writing  
10 - 30%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Related to hazmat laws, regulations and incident analyses

Problem solving  
20 - 40%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Field exercises

Skill Demonstrations  
5 - 20%

**Exams:** All forms of formal testing, other than skill performance exams.

Multiple choice, Quizzes

Exams  
25 - 45%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

**Representative Textbooks and Materials:**

Hazardous Materials Incident Commander, Published by California Safety Training Institute (most recent edition)

DOT - Emergency Response Guide; Dept. of Transportation, 2003 Ed.