# Hazardous Materials for the First Responder Course No. 44070 Credit: 0.5

|  |  |  |  |
| --- | --- | --- | --- |
| **Student name:** |  | **Graduation Date:** |  |

Pathways and CIP Codes:Corrections, Security, Law, & Law Enforcement Services (43.0199) – Law Enforcement Strand; Emergency & Fire Management Services (43.0299)

Course Description: A **technical level** course that provides students with the necessary information for awareness, recognition, and proper protocols for hazardous materials or chemical emergencies that could be encountered in Law, Public Safety, Corrections, and Security occupations. Students will gain knowledge of compliance with regulations to protect human health and the environment, as well as to minimize an organization's risk. Competencies correlate to NFPA 1001 and 1072 and prepare students Hazardous Materials Awareness Exam for Firefighter I National Certification through the Kansas Fire and Rescue Training Institute. [Course requires specialized teacher certification and/or offers professional certification.]

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

## Benchmark 1: Analyze and Discuss Hazardous Materials Incidents

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Distinguish between hazardous materials incidents and other emergencies. |  |
| 1.2 | Discuss the roles of awareness-level personnel and operations-level responders. |  |
| 1.3 | Describe the various types of hazardous materials dangers. |  |
| 1.4 | Explain each of the routes of entry for hazardous chemicals. |  |
| 1.5 | Describe the U.S., Canadian, and Mexican hazardous materials regulations and definitions. |  |
| 1.6 | Discuss hazardous materials incident statistics. |  |

## Benchmark 2: Explain and Discuss Hazardous Materials Identification

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.1 | Identify the seven clues to the presence of hazardous materials. |  |
| 2.2 | Discuss the occupancy types, locations and pre-incident surveys that may indicate hazardous materials. |  |
| 2.3 | Describe the container shapes that may contain hazardous materials. |  |
| 2.4 | Identify placards, labels and markings that designate the presence of hazardous materials. |  |
| 2.5 | Explain the written resources available to indicate the presence of hazardous materials. |  |
| 2.6 | Discuss monitoring and detection devices. |  |

## Benchmark 3: Describe and Discuss Awareness-Level Actions at Hazardous Materials Incidents

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 3.1 | Discuss predetermined procedures and emergency response plans. |  |
| 3.2 | Describe notification requirements. |  |
| 3.3 | Discuss the use of the Emergency Response Guidebook (ERG) to obtain information about a hazardous material. |  |
| 3.4 | Demonstrate isolate and deny entry to a scene techniques. |  |
| 3.5 | Discuss terrorist incidents. |  |

## Benchmark 4: Analyze and Discuss Chemical Properties and Hazardous Materials Behavior

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 4.1 | Discuss three states of matter. |  |
| 4.2 | Discuss flammability of various hazardous materials. |  |
| 4.3 | Explain concepts of vapor pressure, boiling point, specific gravity, solubility, and miscibility. |  |
| 4.4 | Explain the reactivity triangle. |  |
| 4.5 | Describe the General Hazardous Materials Behavior Model. |  |

## Benchmark 5: Identify and Discuss Various Aspects of Incident Management

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 5.1 | Describe incident priorities. |  |
| 5.2 | Discuss various incident management systems. |  |
| 5.3 | Identify communication procedures and guidelines for use at hazardous materials incidents. |  |

## Benchmark 6: Analyze and Discuss Strategic Goals and Tactical Objectives

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 6.1 | Describe each of the steps of the basic problem-solving formula. |  |
| 6.2 | Discuss isolation and scene control. |  |
| 6.3 | Explain the notification process. |  |
| 6.4 | Discuss protection of responders, the public, the environment and property. |  |
| 6.5 | Describe recovery and termination of an incident. |  |

## Benchmark 7: Identify and Discuss Various Facets of Terrorist Attacks, Criminal Activity, and Disasters

### Competencies

| **#** | **Description** | **RATING** |
| --- | --- | --- |
| 7.1 | Define terrorism. |  |
| 7.2 | Distinguish between a terrorist attack and routine emergency. |  |
| 7.3 | Discuss explosive, chemical, biological, radiological and nuclear attacks. |  |
| 7.4 | Identify dangers of illegal hazardous materials dump. |  |
| 7.5 | Demonstrate proper evidence preservation. |  |

## Benchmark 8: Discuss and Demonstrate the use of Personal Protective Equipment (PPE)

### Competencies

| **#** | **Description** | **RATING** |
| --- | --- | --- |
| 8.1 | Demonstrate proper use of respiratory protection. |  |
| 8.2 | Discuss protective clothing and ensembles. |  |
| 8.3 | Don and doff different types of PPE. |  |
| 8.4 | Discuss inspection, storage, testing and maintenance of PPE. |  |

## Benchmark 9: Describe and Demonstrate Various Procedures and Methods for Decontamination

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 9.1 | Explore various decontamination methods. |  |
| 9.2 | Describe the types of victims that may receive decontamination. |  |
| 9.3 | Perform emergency decontamination. |  |
| 9.4 | Demonstrate set-up and implementation of technical decontamination. |  |
| 9.5 | Perform mass decontamination. |  |

## Benchmark 10: Describe and Demonstrate Product Control Tactics

### Competencies

| **#** | **Description** | **rating** |
| --- | --- | --- |
| 10.1 | Describe each of the various spill control tactics. |  |
| 10.2 | Perform spill absorption/adsorption, damming, diking, diversion, and retention. |  |
| 10.3 | Demonstrate leak control and perform remote valve shutoff. |  |
| 10.4 | Explain fire control. |  |
| 10.5 | Demonstrate Foam line set-up and applications. |  |

## Benchmark 11: Discuss and Demonstrate Various Aspects of Air Monitoring and Sampling Equipment

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 11.1 | Discuss air monitoring and sampling. |  |
| 11.2 | Discuss concentrations and exposure limits. |  |
| 11.3 | Explain the components of air monitoring. |  |
| 11.4 | Describe the selection and maintenance of detection and monitoring devices. |  |
| 11.5 | Perform a pH test on an unknown liquid. |  |
| 11.6 | Perform air monitoring with a multi-gas meter. |  |

## Benchmark 12: Discuss and Demonstrate Victim Rescue and Recovery Techniques

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 12.1 | Discuss rescue operations. |  |
| 12.2 | Conduct a triage. |  |
| 12.3 | Identify rescue tools and equipment. |  |
| 12.4 | Demonstrate various rescue drag methods. |  |

## Benchmark 13: Evidence Preservation and Sampling Procedures

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 13.1 | Discuss various hazards at crimes involving hazardous materials or weapons of mass destruction. |  |
| 13.2 | Discuss the first responder’s role in an investigation. |  |
| 13.3 | Describe the different response phases at criminal hazardous materials/weapons of mass destruction incidents. |  |

## Benchmark 14: Describe and Discuss Illiicit Laboratories

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 14.1 | Describe the common indicators and types of illicit laboratories. |  |
| 14.2 | Discuss general hazards at illicit laboratories. |  |
| 14.3 | Identify and avoid booby traps at illicit laboratories. |  |
| 14.4 | Describe illicit drug, chemical agent, explosive and biological labs. |  |
| 14.5 | Discuss remediation operations for illicit labs. |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

CTE Pathways Help Desk

(785) 296-4908

[pathwayshelpdesk@ksde.org](mailto:pathwayshelpdesk@ksde.org)



900 S.W. Jackson Street, Suite 102

Topeka, Kansas 66612-1212

[https://www.ksde.org](https://www.ksde.org/)

The Kansas State Department of Education does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities and provides equal access to any group officially affiliated with the Boy Scouts of America and other designated youth groups. The following person has been designated to handle inquiries regarding the nondiscrimination policies: KSDE General Counsel, Office of General Counsel, KSDE, Landon State Office Building, 900 S.W. Jackson, Suite 102, Topeka, KS 66612, (785) 296-3201.