Hazardous Materials First Responder – Operations Level

Course Duration:

The course includes 40 hours of instruction. It is taught in 4 hour and/or 8 hour sessions to meet local scheduling needs.

Course Objectives:

The course prepares the student to perform the duties of an Operations-Level first responder. After completing the course the student will have met the core, personal protective equipment, and product control competencies required for an Operation-Level first responder in the National Fire Protection Association (NFPA®) 472 Standard, 2013 edition. *Non-Fire Service students may elect to forego the Product Control session of the course.*

Students who successfully complete the certification process will be certified as an Operations-Level first responder.

Students will gain the knowledge and skills needed to:

- Recognize and identify the clues that determine the presence of hazardous materials
- Obtain additional information about the material and it's container
- Make decisions and execute first responder actions

Target Audience:

The course is developed for those fire, rescue, emergency medical service (EMS) personnel, law enforcement and other first responders who may respond to incidents involving chemical, biological, radiological, nuclear (CBRNE) or hazardous materials.

Text

The required text for the course is IFSTA's Hazardous Materials for First Responders, 4th edition. When and if funded through the sponsoring agency, a copy of this manual will be provided to each student for use during the course.

While not required, students may find the IFSTA's Hazardous Materials for First Responders Student Workbook and Hazardous Materials for First Responders Study Guide is a valuable tool to help prepare for each lesson in the course and for the certification exam. The manual, student workbook and study guide are available from IFSTA https://shop.ifsta.org/ or the Oklahoma Firefighters Museum.

Instructor Information:

The course is generally delivered by two experienced instructors, with a background in public or industrial hazardous materials response. Each instructor holds a minimum of Instructor I certification or equivalent.

Contact information for the instructors will be provided at the first class session. The goal of the instructors is to help you be successful during the course. You should immediately contact a course instructor if you have any questions during your training about the course or course work.

Course Evaluation Strategy

Evaluation of learning is accomplished by a combination of formal and informal methods. Formative evaluation is accomplished during each chapter through questions by the instructor and a written quiz at the conclusion of each chapter. Students are provided a written quiz/test for each chapter which will evaluate student's understanding of the chapter content and concepts. Successfully completing these assignments in addition to the knowledge gained during classroom presentations will prepare the student for the written certification exam.

There are also skill applications in the course. The skill applications are designed to apply the concepts and skills in chapters 8-10. The skill applications may be stations where an instructor provides coaching and demonstration and an individual skill is performed. Working as a member of a team, students are required to successfully complete these skills during scenario based activities.

IFSAC and/or ProBoard certification is achieved by successfully completing a written and skills exam administered during the last class session. Additional information about the certification process and retesting for certification can be found on OSU-FST's website.

Pre-Course Reading Assignment

Students are assigned Chapters 1-3 of the IFSTA text to read prior to the first class session. In addition, the students complete a quiz provided for each of these chapters and submit the quiz to their instructor during the first class session.

Quizzes will be graded and returned to the student as an additional study aid.

Homework Assignment

Students will be assigned additional reading assignments during the course, Chapters 4-10. Chapter quizzes will accompany each reading assignment and must be completed and returned to the instructor for grading.

Quizzes will be graded and returned to the student as an additional study aid.

Required Materials

Students are required to bring their student text and written note taking materials (pen and paper) with them to each class session.

Students are required to use Personal Protective Equipment (PPE) during the skills portion of this class. Structural fire fighter protective clothing (SFPC) and self-contained breathing apparatus (SCBA) are required for fire service students. Fire service students that can't bring these items to the skills and certification sessions of the class must make arrangements with OSU-FST to obtain these items when registering.

Students for other emergency response professions (emergency medical, law enforcement, etc.) should contact OSU-FST when registering for the class to arrange appropriate PPE.

Academic Dishonesty Policy

Academic misconduct includes cheating, plagiarism, falsification of records, unauthorized possession of examinations, intimidation, and any and all other actions that may improperly affect the evaluation of a student's academic performance or achievement; assisting others in any such act; or attempts to engage in such acts. Any incident of academic misconduct will result in the student being dropped from the course and the student's sponsoring agency being notified of the incident.

Course Participation

The course utilizes lecture, open discussions, and skills practice to achieve the learning objectives. Every student is expected to:

- come to course prepared to actively participate in discussions,
- read the text prior to the next class session,
- complete all homework assignments,
- respect the beliefs, opinions, and values of other students,
- and have an open mind about the issues being discussed.

Course Funding

This training is generally provided through funding provided by the Oklahoma Office of Homeland Security (OKOHS), Oklahoma Emergency Management (OEM), or local Technology Centers through the Oklahoma Volunteer Firefighters Training Initiative. The course is provided throughout Oklahoma to public emergency response agency upon request. To request training, please call or email requests to:

Steve George, Technical Programs Manager
Oklahoma State University – Fire Service Training
1723 W Tyler
Stillwater, OK 74078-8041
Tel: 405-744-5727 or 800-304-5727
Email: sgeorge@osufst.org

Course Description

This course is intended to provide emergency responders with the knowledge, skills and personal health strategies they need to safely and effectively:

- Respond to hazardous materials incidents that occur at fixed sites and during transport
- Mitigate hazardous situations that develop within routine calls (e.g., exposure to household chemicals that may have been involved/spilled during a residential fire)

Course Objectives

After completing this course, students will be able to describe and practice basic strategies to safeguard their health and safety when their work involves potential exposure to hazardous materials. Students will gain the knowledge and skills needed to:

- Detect the presence of hazardous substances
- Consult references for information
- Implement defensive control measures that minimize risks to health and safety

Schedule

The course is the first ten chapters of the student text. The content of chapters 1-3 build upon the knowledge gained during Hazardous Materials First Responder – Awareness Level training. The information from these first three chapters is essential to achieve the objectives of the remaining chapters. Students will obtain the majority of the information from Chapters 1-3 during the pre-course reading assignment and activity.

Content of Chapters 4-10 will be addressed during the 40 hour training. Objectives for each chapter include:

Chapter 1

1. Describe the various types of hazardous materials hazards.

Chapter 2

1. Identify the seven clues to the presence of hazardous materials.
2. Describe the container shapes that may contain hazardous materials.
3. Identify placards, labels, and markings that designate the presence of hazardous materials.
4. Describe the other markings and colors that may indicate the presence of hazardous materials.
5. Explain the written resources available to indicate the presence of hazardous materials.
6. Discuss the limitations of using the senses to determine the presence or absence of hazardous materials.
7. Discuss monitoring and detection devices.
8. Analyze scenarios to detect the presence of hazardous materials. *[Learning Activity 2-1]*
9. Explain how to identify terrorist attacks and illicit laboratories.

Chapter 3

1. Discuss the use of the *Emergency Response Guidebook* (*ERG*).

Chapter 4

1. Discuss the three states of matter.
2. Discuss the flammability of various hazardous materials.
3. Describe vapor pressure.
4. Explain boiling point.
5. Define melting point, freezing point, and sublimation.
6. Describe vapor density.
7. Define solubility and miscibility.
8. Discuss specific gravity.
9. Define persistence.
10. Define reactivity and describe the reactivity triangle.
11. Describe the General Hazardous Materials Behavior Model.

Chapter 5

1. Describe incident priorities.
2. Discuss various incident management systems.
3. Identify communication procedures and guidelines for use at hazardous materials incidents

Chapter 6

1. Describe each of the steps of the basic problem-solving formula.
2. Discuss isolation and scene control.
3. Explain the notification process.
4. Discuss protection of responders, the public, the environment, and property.
5. Describe recovery and termination.

Chapter 7

1. Define terrorism.
2. Distinguish between a terrorist attack and a routine emergency.
3. Discuss terrorist tactics and types of attacks.
4. Discuss explosive attacks.
5. Discuss chemical attacks.
6. Discuss biological attacks.
7. Discuss radiological and nuclear attacks.
8. Identify hazards of illegal haz mat dumps.
9. Describe proper evidence preservation.
10. Discuss hazardous materials during and after disasters.

Chapter 8

1. Discuss respiratory protection.
2. Discuss protective clothing and ensembles.
3. Don and doff different types of personal protective equipment (PPE). [Skill Sheet 8-1]
4. Discuss inspection, storage, testing, and maintenance of PPE.
5. Given hazardous materials scenarios, determine proper PPE for each incident and report and document the decision. [Learning Activity 8-1]

Chapter 9

1. Define decontamination.
2. Identify various decontamination methods.
3. Discuss general guidelines for decon operations.

4. Describe the different types of victims that may receive decontamination.
5. Describe emergency decontamination.
6. Perform emergency decontamination. [Skill Sheet 9-1]

Chapter 10

1. Describe each of the various spill control tactics.
2. Perform absorption/adsorption. [Skill Sheet 10-1]
3. Perform damming operations. [Skill Sheet 10-2]
4. Perform diking operations. [Skill Sheet 10-3]
5. Perform diversion operations. [Skill Sheet 10-4]
6. Perform retention operations. [Skill Sheet 10-5]
7. Perform vapor suppression. [Skill Sheet 10-6]
8. Perform vapor dispersion. [Skill Sheet 10-7]
9. Perform dilution operations. [Skill Sheet 10-8]
10. Discuss leak control.
11. Perform remote valve shutoff. [Skill Sheet 10-9]
12. Explain fire control.