

Fire Safety and Fire Fighting

Objectives

Course: After completing this course, the student will grasp a basic understanding of term Fire and its chemical composition.

After completing this course, the student will understand the methods of Fire extinction and how to properly extinguish a fire utilizing a Fire Extinguisher.

Enabling

Objectives: After completing this course the student will be able to:

1. Demonstrate an understanding of the Chemistry of Combustion.
2. Identify products of combustion.
3. Identify the various classes of Fire.
4. Demonstrate an understanding of the methods of Extinction.
5. Demonstrate an understanding of the proper use of electricity as it relates to Fire Safety.
6. Define the term Fire Extinguisher and identify the most appropriate types for extinguishing particular classes of fires.
7. Demonstrate an understanding of how to use a Fire Extinguisher.
8. Understand House Keeping as it relates to Fire Safety.
9. Demonstrate an understanding of how to make the right decision in an emergency situation.
10. Understand how to report an emergency.
11. Undertake hazard assessments to determine mitigation interventions
12. Develop a culture of labelling, classification and storage of liquids.

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Lesson Outline

<u>Topic/ Activity</u>	<u>Est. Time</u>
Administration	3 Minutes
Presentation	90 Minutes/Session
Evaluation	10 Minutes
Total Time	<u>103 Minutes</u>

The training will comprise four (4) classroom sessions, and a certifying assessment [a written examination and a practical demonstration]. Each classroom session will include a short administrative section followed by the core presentation, and ending with an evaluation of whether the students did learn. The entire training will be held over three (3) days. **Day 1** will be classroom sessions; two sessions will be held on day 1. **Day 2** will also comprise two classroom sessions. **Day 3** will be the certifying assessments [written examination and practical demonstration] where each student will be required to safely extinguish a **Class B** fire utilising the skills and knowledge gained from day 1.

Day 1 classroom sessions may look like this:

Welcome/Introductions 9:00am to 9:15am

Class 1: 9:15am to 11:00am

Snack Break 11:00am to 11:15am

Class 2: 11:15am to 1:00pm

Day 2 classroom session may look like this:

Welcome 9:00am to 9:15am

Class 3: 9:15am to 11:00am

Snack Break 11:00am to 11:15am

Class 4: 11:15 am to 1:00pm

Day 3 Certifying Assessment may look like this:

Written Examination 9:00am to 10:30am

Practical Demonstration Time to be determined

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Planning

- Secure all handouts and printed material for circulation.
- Review the lesson plan and make sure that all the pages are there.
- Prepare your own notes and examples for lesson.
- Review the complete lesson content and ensure all information to be delivered is accurate.
- Prepare evaluation for lesson covered.
- Ensure all material needed for lesson has been obtained and accounted for.

Materials Needed

(To be provided by Workshop Organisers)

- Print out and copies of handouts.
- Two (2) Carbon Dioxide (CO₂) Fire Extinguishers.
- One cut section of 45 gallon drum.
- 1 gallon of gasoline.
- One (1) box matches.
- Safety Clothing (PPE)
- Bucket of fresh water.
- Bucket of sand
- Wet blanket (if available)
- Smoke detector (with battery)
- Rubber hammer
- Goggles and respirator

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Class Presentations

Topic	Instructor Notes
<i>1. <u>Administration/ Introduction</u></i> Brief Introduction of the Class Objectives.	<i>(3 minutes)</i>
<i>2. <u>Lesson</u></i>	<i>(90 minutes)</i>
<i>3. <u>Learning Impact Assessment</u></i>	<i>(10 Minutes)</i>

CLASS 1

Chemistry of Combustion

1. Students to describe their understanding of fire.
2. Defining the term “Fire” and the term “Fire Triangle”
3. Identify and define the components of the Fire Triangle and how they can be obtained.
4. What is Fire Tetrahedron?
5. Demonstrate an understanding of the Chemistry of Combustion.
6. Identify products of combustion.
7. Identify and give examples of the various classes of Fire.
8. How different materials burn.
9. Identify and define methods of heat transmission
10. Define the phases of burning and how they relate to heat transfer.

Evaluate lesson.

(10 minutes)

CLASS 2

Fire Extinguishers and Electrical Safety

1. Demonstrate an understanding of the methods of Extinction.
2. Define the term Fire Extinguisher and identify the most appropriate types for extinguishing particular classes of fires.
3. Demonstrate an understanding of how to use a Fire Extinguisher.
4. Identify methods of Fire Extinction and link appropriate methods to classes.
5. Identify electrical hazards
6. Identify and determine how to mitigate those hazards.
 - a. Distinguish between a Surge Protector and a Multi-Plug Strip
 - b. Outline and explain the proper use of Extension Cords Vs the Myth
 - c. Outline and explain the proper use of Electrical Circuits and the danger of Overloading.
 - d. Outline and explain the proper method to power appliances with Heating Elements
7. Demonstrate an understanding of the proper use of electricity as it relates to Fire Safety.
8. Outline the acronym PASS and its application

Evaluate lesson.

(10 minutes)

CLASS 3

Emergency Management System

1. Understand House Keeping as it relates to Fire Safety.
2. Define roles of a Fire Marshall/Safety Warden
3. Demonstrate an understanding of how to make the right decision in an emergency situation.
4. Understand how to report an emergency (Raising the Alarm).
5. Outline the various roles in the Emergency Response Team.
6. Where not to store combustible material.
7. Avoiding inhalation of smoke and toxic fumes
8. Record keeping and maintenance of Fire Extinguishers and Smoke Detectors.
9. Identifying and accessing the Assembly Area
10. Evacuation Procedures
11. The importance of PPE

Evaluate lesson.

(10 minutes)

CLASS 4

Risk Assessments and Hazards

1. Understand the concept of Hazards.
2. Undertaking a survey of hazards at the workplace.
3. Hazards in the neighbourhood.
4. Undertaking a Risk Assessment and mitigating those risks.
5. Mitigating occupational hazards.
6. Compulsory labelling regime.
7. Creating an Index of cabinet content.
8. Managing and cordoning hot-works and issuing permits for hot-works.
9. Compulsory vehicle inspection and checklist.
10. Understanding employment injury/occupational illnesses.
11. Understanding public liability.
12. Ventilating electrical appliances.
13. Cooperation among neighbours sharing risks.
14. White Phosphorus Matches Prohibition, Chap. 86:01
15. Accidents and Occupational Diseases (Notification) Act, First Schedule, Chap. 89:51
16. Noxious and Dangerous Substances (Control) Act, Chap. 40:09
17. Bush Fires Act, Chap. 42:61

Evaluate lesson.

(10 minutes)

CERTIFICATION ASSESSMENT

This is the final exam which will be administered on completion of the training. It will consist of two parts as follows:

1. Part 1 will consist of 25 multiple choice and five structured questions. Students **MUST** pass the structured questions in order to receive an overall pass grade in this part. The time allotted for this examination is one-and-a-half (1.5) hours. No extra time will be allotted to students who arrive late for the examination. Students should enter the examination room with pen or pencil **ONLY**.
2. Each student will be required to safely and effectively extinguish a **Class B** fire utilizing a Fire Extinguisher. Students should utilize the knowledge and skills gained during the classroom sessions. Fire Extinguishers will be provided for this assessment. Students **MUST** pass this practical assessment in order to be certified. Successful students will be certified as **Fire Marshalls** by the Occupational Safety and Health Institute of Dominica [**The OSH Institute of Dominica**] and issued with the designation *CertFM*. The OSH Institute of Dominica has applied to CIPO for registration of this intellectual property. Certification will be for a period of three (3) years.