

National Technical and Vocational Qualification Framework

**Competency Based Learning Materials
(CBLMs)**

**Apply OSH Practices in a CBT&A
Environment**

**National Certificate in CBT&A Methodology
Trainers & Assessors, Level-4**



**Bangladesh Technical Education Board
Agargaon, Sher-E-Bangla Nagar
Dhaka-1207**

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This Competency Based Learning Materials on “Apply OSH Practices in a CBT&A Environment” under the CBT&A Methodology for Trainers & Assessors, Level-4 qualification is developed based on the national competency standard approved by Bangladesh Technical Education Board (BTEB).

This document is to be used as a key reference point by the competency-based learning materials developers, teachers/trainers/assessors as a base on which to build instructional activities.

This document is owned by Bangladesh Technical Education Board (BTEB), developed under the guidance of international expert (TVET and Skills Development Specialist) and National consultant), ILO Country Office for Bangladesh supported by Skills 21 – Empowering Citizens for Inclusive and Sustainable Growth Project, ILO, funded by European Union (EU).

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Bangladesh Technical Education Board
Agargaon, Sher-E-Bangla Nagar, Dhaka -1207, Bangladesh
Telephone: +88 02 9140645, Fax: +88 02 8113345
www.btebcbt.gov.bd

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Preface

Education and training for productive employment is vital for economic and social development in Bangladesh. Technical and Vocational Education and Training (TVET) is a tool for productivity enhancement and poverty reduction. TVET sector ensures quality, relevance and access of skills training which meets industry demand and fulfill the requirements of individual for opting gainful and productive employment.

Competency-based learning materials on “Apply OSH Practices in a CBT&A Environment” provides overall course guidelines in relation to teaching and learning and act as the key instrument in supporting delivery of standardised formal, non-formal and informal training. It is expected that competency-based learning materials (CBLMs) will serve the purpose of training delivery of different courses maintaining quality as specified in the approved national competency standard for CBT&A Methodology for Trainers & Assessors, Level-4. As It is agreed that any reform in TVET system in Bangladesh should be in line with international trends so as to make graduates from the qualification nationally and internationally competent.

It will be worth noting that the initiatives for development of National Certificate in CBT&A Mythology, Level-4 & Level-5 through review and updating of existing competency standards of trainers & assessors, development of new competency standard for National Certificate for CBT&A Managers and implementers, Level-6 and Competency Based Curriculum development for the above mentioned courses by the Skills 21 – Empowering Citizens for Inclusive and Sustainable Growth Project, ILO. This document is developed by the Standards and Curriculum Development Committee of BTEB under the guidance of International Expert (TVET and Skills Development Specialist) and the National consultant Skills 21 – Empowering Citizens for Inclusive and Sustainable Growth Project, ILO country Office for Bangladesh.

We appreciate Skills 21 – Empowering Citizens for Inclusive and Sustainable Growth Project, ILO, funded by European Union (EU) for developing competency-based learning materials on “Apply OSH Practices in a CBT&A Environment.” of CBT&A Methodology for Trainers & Assessors, Level-4 qualification under National Technical and Vocational Qualification Framework (NTVQF).

Chairman
Bangladesh Technical Education Board

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Acronyms

BMET	Bureau of Manpower Employment and Training
BTEB	Bangladesh Technical Education Board
CAD	Course Accreditation Document
CBC	Competency Based Curriculum
CBLMs	Competency Based Learning Materials
CBT	Competency Based Training
CBT&A	Competency Based Training and Assessment
CS	Competency Standard
DTE	Directorate of Technical Education
EU	European Union
ILO	International Labour Organization
LCD	Liquid Cristal Display
MOE	Ministry of Education
MOEWOE	Ministry of Expatriate Welfare and Overseas Employment
MOLE	Ministry of Labour and Employment
NEP	National Education Policy
NGOs	Non-Government Organisations
NSDA	National Skills Development Authority
NSDC	National Skills Development Council
NSDP	National Skills Development Policy
NTVQF	National Technical and Vocational Qualification Framework
OSH	Occupational Safety and Health
PCs	Personal Computers
QAMS	Quality Assurance Manuals
RPL	Recognition of Prior Learning
SCDC	Standards and Curriculum Development Committee
TSC	Technical School and College
TTC	Technical Training Centre
TTTC	Technical Teachers Training College
TVET	Technical Vocational Education and Training
VET	Vocational Training Institute
VTTI	Vocational Teachers Training Institute

Overview of the Module

Apply OSH Practices in a CBT&A Environment

This module comprises five elements (1 to 5), and five (5) learning outcomes derived from the unit of competency TVTENV403A1: Apply OSH Practices in a CBT&A Environment.

Upon completion of this module, the trainee must be able to:

1. Identify OSH issues relating to work environment
2. Control and report OSH issues
3. Conduct work safely
4. Follow emergency response procedures
5. Maintain and improve health and safety in the work place

After completion of the training, the trainees will be required to demonstrate their competency through the following performance criteria:

- 1.1 Identified personnel responsible for OSH standards in the workplace.
- 1.2 Identified OSH standards that apply to the workplace.
- 1.3 OSH issues are identified in the workplace.
- 2.1 **Workplace** is routinely checked for OSH hazards prior to commencing and during training.
- 2.2 Issues or problems with the area are remedied or reported to the appropriate person.
- 2.3 **Hazards** and unacceptable performance are identified and corrective actions are taken within the level of responsibility.
- 2.4 **Hazards** and incidents are reported to appropriate personnel according to procedures.
- 3.1 **OSH practices** are applied in the training environment.
- 3.2 Appropriate **personal protective equipment's (PPE)** are selected and worn.
- 3.3 **Safety Signs and symbols** are identified and followed.
- 4.1 Emergency situations are identified.
- 4.2 Emergency procedures are followed as appropriate to the nature of the emergency and according to workplace procedures.
- 4.3 Emergency situations are reported to concern person.
- 4.4 Workplace procedures are followed for dealing with accidents, fires and emergencies within the scope of responsibilities.

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- 5.1 Risks are identified and appropriate control measures are implemented in the work area.
- 5.2 Recommendations arising from risk assessments are implemented within level of responsibility.
- 5.3 Opportunities for improving OSH performance are identified and raised with relevant personnel.
- 5.4 **Green Practices** area are identified.
- 5.5 Green skills are applied/maintained.
- 5.6 Safety records are **documented** according to company policies.

CONTENTS

This learning package includes the following:

- 1. Identify OSH issues relating to work environment
- 2. Control and report OSH issues
- 3. Conduct work safely
- 4. Follow emergency response procedures
- 5. Maintain and improve health and safety in the work place

PRE-REQUISITE: N/A

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How to use this Competency Based Learning Materials (CBLMs)

The module, Apply OSH Practices in a CBT&A Environment. contains training materials and activities for you to complete. These activities may be completed as part of structured classroom activities or you may be required to work at your own pace. These activities will ask you to complete associated learning and practice activities in order to gain knowledge and skills you need to achieve the learning outcomes.

1. Review the **Learning Activity** page to understand the sequence of learning activities you will undergo. This page will serve as your road map towards the achievement of competence.
2. Read the **Information Sheets**. This will give you an understanding of the jobs or tasks you are going to learn how to do. Once you have finished reading the **Information Sheets** complete the questions in the **Self-Check**.
3. **Self-Checks** are found after each **Information Sheet**. **Self-Checks** are designed to help you know how you are progressing. If you are unable to answer the questions in the **Self-Check** you will need to re-read the relevant **Information Sheet**. Once you have completed all the questions check your answers by reading the relevant **Answer Keys** found at the end of this module.
4. Next move on to the **Job Sheets**. **Job Sheets** provide detailed information about *how to do the job* you are being trained in. Some **Job Sheets** will also have a series of **Task Sheets**. These sheets have been designed to introduce you to the job step by step. This is where you will apply the new knowledge you gained by reading the Information Sheets. This is your opportunity to practise the job. You may need to practise the job or activity several times before you become competent.
5. Specification **sheets**, specifying the details of the job to be performed will be provided where appropriate.
6. A review of competency is provided on the last page to help remind if all the required assessment criteria have been met. This record is for your own information and guidance and is not an official record of competency

When working through this Module always be aware of your safety and the safety of others in the training room. Should you require assistance or clarification please consult your trainer or facilitator.

When you have satisfactorily completed all the Jobs and/or Tasks outlined in this module, an assessment event will be scheduled to assess if you have achieved competency in the specified learning outcomes. You will then be ready to move onto the next Unit of Competency or Module

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MODULE CONTENT

UNIT OF COMPETENCY: Apply OSH Practices in a CBT&A Environment

MODULE TITLE: Applying OSH Practices in a CBT&A Environment

MODULE DESCRIPTOR: This module discusses the aspects that must be given attention when Applying OSH Practices in a CBT&A Environment. It shows the requirements for identifying OSH issues relating to work environment, controlling and reporting OSH issues, conducting work safety, following emergency response procedures and maintaining& improving health and safety in the work place.

NOMINAL DURATION: 15 Hours

LEARNING OUTCOMES:

Upon completion of this module, the trainee must be able to:

1. Identify OSH issues relating to work environment
2. Control and report OSH issues
3. Conduct work safely
4. Follow emergency response procedures
5. Maintain and improve health and safety in the work place

ASSESSMENT CRITERIA:

1. Identified personnel responsible for OSH standards in the workplace.
2. Identified OSH standards that apply to the workplace.
3. OSH issues are identified in the workplace.
4. Workplace is routinely checked for OSH hazards prior to commencing and during training.
5. Issues or problems with the area are remedied or reported to the appropriate person.
6. Hazards and unacceptable performance are identified and corrective actions are taken within the level of responsibility.
7. Hazards and incidents are reported to appropriate personnel according to procedures.
8. OSH practices are applied in the training environment.
9. Appropriate personal protective equipment's (PPE) are selected and worn.
10. Safety Signs and symbols are identified and followed.
11. Emergency situations are identified.
12. Emergency procedures are followed as appropriate to the nature of the emergency and according to workplace procedures.
13. Emergency situations are reported to concern person.
14. Workplace procedures are followed for dealing with accidents, fires and emergencies within the scope of responsibilities.

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15. Risks are identified and appropriate control measures are implemented in the work area.
16. Recommendations arising from risk assessments are implemented within level of responsibility.
17. Opportunities for improving OSH performance are identified and raised with relevant personnel.
18. Green Practices area are identified.
19. Green skills are applied/maintained.
20. Safety records are documented according to company policies.

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LEARNING OUTCOME 1: IDENTIFY, CONTROL AND REPORT OSH ISSUE RELATING TO IMMEDIATE WORK ENVIRONMENT

ASSESSMENT CRITERIA

- 1.1 Identified personnel responsible for OSH standards in the workplace.
- 1.2 Identified OSH standards that apply to the workplace.
- 1.3 OSH issues are identified in the workplace

CONTENTS:

1. Personnel responsible for OSH standards in the workplace is identified.
2. OSH standards that apply to the workplace are identified
3. OSH issues are identified in the workplace

CONDITIONS:

Trainees must be provided with the following:

- Handouts or reference materials/books on the above stated contents
- PCs/printers or laptops with internet access
- Bond paper
- Ball pens/pencils and other office supplies and materials
- Communication resources
- Workplace or simulated environment

METHODOLOGIES:

- Lecture/discussion
- Demonstration/application
- presentation

ASSESSMENT METHODS:

- Written test
- Demonstration
- Observation
- Oral questioning

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Learning Experience 3.1-1

Learning Outcome 1:

IDENTIFY, CONTROL AND REPORT OSH ISSUE RELATING TO IMMEDIATE WORK ENVIRONMENT

Learning Steps	Resources specific instructions
1 Student will ask the instructor about the materials to be used.	1. Instructor will provide the learning materials in 1 to 5 from the UoC: Apply OSH Practices in a CBT&A Environment
2 Read the Information sheet/s	Information sheet 3.1-1: Identify Observe OSH issues related to work place environment.
3. Complete the Self Checks & Check Answer key.	3. Self-Check 3.1-1, Answer Key 3.1-1
4. Read the Task and Specification Sheet	4. Job Task sheet and Specification sheet 1
5. Complete Activities (if applicable)	5. Task sheet 3.1-1
6. Perform the Job	6. Job and Specification.

Note: If you have multiple Information and Job repeat the above Learning Steps 2 to 6 for each job

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Information 3.1-1

Identify OSH issues relating to work environment

Learning Objective:

After reading this **Information Sheet**, you must be able to Identify OSH issues relating to work environment.

Understanding Identify OSH issues relating to work environment is necessary for ensuring OSH practice in the workplace. It will give ideas on how to Identify OSH issues relating to work environment.

OSHAcademy Course 703 Study Guide

Introduction to OSH Training



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Personnel responsible for *OSH standards*

This section discusses the work health and safety (WHS) roles and responsibilities for individuals in a range of positions. Roles and responsibilities can be legally-based – for example, for employers and other persons conducting an undertaking (PCBUs), other key decision makers at workplaces, designers and manufacturers of equipment and suppliers of chemicals, etc – or they can be practically or professionally-based – for example, for OHS

OHS laws

In an effort to make workplaces healthier and safer, government has written Occupational health and safety (OHS) laws which must be followed. Each of the States and Territories has made their own health and safety laws called an OHS Act, but much like road rules they are similar to each other, and have a lot in common. Under the OHS Act, almost everyone at the workplace has legal responsibilities for occupational health and safety. These responsibilities are known as a

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duty of care. Just like road rules, failing to meet a duty of care is against the law, and can result in prosecution. Fines from being prosecuted can be very substantial.

In your workplace it is likely that you will find people or groups of people with specific roles relating to workplace health and safety. Not all workplaces will have every type of person, but some of the most common safety groups you will find are:

- Health and safety representatives
- Supervisors
- Safety officers
- Health and safety committees

Safety representatives

Health and safety representatives are an important link between employees and Employers. They are elected by co-workers to act on their behalf, telling Employers about safety and health concerns and cooperating with employers to Implement and maintain workplace health and safety.

Supervisors

Supervisors need to make sure that the people they are looking after are given the safety instructions they need, and are able to perform their job safely.

Occupational health & Safety officers

These are trained people who are hired by the employer to help with the Management of health and safety at the workplace. Some of the tasks safety officers may do are:

- Organize OHS training
- Investigate accidents
- Provide first aid
- Undertake risk assessments at the workplace.

First aid officer

A **First Aid Officer** is responsible for monitoring and maintaining **first aid** facilities in their office, Institute, Industry and Assessment centre administering **first aid** and assisting the staff & **Officers** in monitoring and reporting risks and incidents.

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First aid for workplace





INTRODUCTION TO OSHS

OSH STANDARDS

OSH Standards:

- *PURPOSE
 - to protect every working man against the dangers of injury, sickness or death through safe and healthful working conditions.
- SCOPE
 - shall apply to all places of employment except land, sea and air transportation and safety in Mines.

Occupational Health and Safety standards

1. Identify the hazard
2. Clear the area close to the hazard
3. Partition the hazard off or clearly identify the area to protect other people from harm
4. If the hazard is easily and safely cleared, then do so

Self-Check: 3.1-1

1. Who are the most common safety groups?

Answer:

2. Define Occupational Health and Safety

Answer:

3. What are the duties of Occupational health & Safety officers?

Answer:

4. Describe OSH Laws .Why it is important for Trainer, trainee and industry people?

Answer:

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Answer Sheet-3.1-1

1. Who are the most common safety groups?

Answer:

- Health and safety representatives
- Supervisors
- Safety officers
- Health and safety committees

2. Define Occupational Health and Safety

Answer:

1. Identify the Hazard
2. Clear the area close to the Hazard
3. Partition the hazard off or clearly identify the area to protect other people from harm.
4. If the hazard is easily and safely cleared, then do so.

3. What are the duties of Occupational health & Safety officers?

Answer:

These are trained people who are hired by the employer to help with the Management of health and safety at the workplace. Some of the tasks safety officers may do are:

- Organize OHS training
- Investigate accidents
- Provide first aid
- Undertake risk assessments at the workplace.

4. Describe OSH Laws. why it is important for Trainer, trainee and industry people?

Answer:

In an effort to make workplaces healthier and safer, government has written Occupational health and safety (OHS) laws which must be followed. Each of the States and Territories has made their own health and safety laws called an OHS Act, but much like road rules they are similar to each other, and have a lot in common. Under the OHS Act, almost everyone at the workplace has legal responsibilities for occupational health and safety. These responsibilities are known as a duty of care. Just like road rules, failing to meet a duty of care is against the law, and can result in prosecution. Fines from being prosecuted can be very substantial.

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LEARNING OUTCOME 2: CONTROL AND REPORT OSH ISSUES

ASSESSMENT CRITERIA:

- 2.1 **Workplace** is routinely checked for OSH hazards prior to commencing and during training.
- 2.2 Issues or problems with the area are remedied or reported to the appropriate person.
- 2.3 **Hazards** and unacceptable performance are identified and corrective actions are taken within the level of responsibility.
- 2.4 **Hazards** and incidents are reported to appropriate personnel according to procedures.

CONTENTS:

- Appropriate Personnel responsible for OSH in the work place is identified.
- Work place is routinely checked for OSH hazards prior to commencing and during training.
- Issues or problems with the area are remedied or reported to the appropriate person.
- Hazards and unacceptable performance are identified and corrective actions are taken within the level of responsibility.
- Hazards and incidents are reported to appropriate personnel according to procedures.

CONDITIONS:

Trainees must be provided with the following:

- Handouts or reference materials/books on the above stated contents
- PCs/printers or laptops with internet access
- Bond paper
- Ball pens/pencils and other office supplies and materials
- Communication resources
- Workplace or simulated environment

METHODOLOGIES:

- Lecture/discussion
- Demonstration/application
- presentation

ASSESSMENT METHODS:

- Written test
- Demonstration
- Observation
- Oral questioning

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Learning Experience 3.2-1

Learning Outcome 2: CONTROL AND REPORT OSH ISSUES

Learning Experiences	Resource/Special Instructions
Identifying appropriate personnel responsible for OSH in the workplace	• Read Information Sheet 3.2-1 • Answer Self Check 3.2-1 • Compare your answer to the Answer Key 3.2-1
Identifying OSH Hazards Prior to commencing and during training	• Read Information Sheet 3.2-2 • Answer Self Check 3.2-2 • Compare your answer to the Answer Key 3.2-2
Remedied the issues and problems reported to the appropriate person.	• Read Information Sheet 3.2-2 • Answer Self Check 3.2-2 • Compare your answer to the Answer Key 3.2-2
Identified and corrective actions are for Hazards and unacceptable performance	• Read Information Sheet 3.2-2 • Answer Self Check 3.2-2 • Compare your answer to the Answer Key 3.2-2

Information sheet -3.2-1

Control and report OSH issues

Introduction

Occupational safety, health and Environment is a very growing concern for its importance and necessity in workplace or industries. The subject is composed of very basic needs of working people, while engaged at the work place. “Work place is dangerous. It always will be as long as human beings have to operate the processes of production. Again production will constitute hazards.”

Workplace is routinely checked for OSH hazards prior to commencing and during training.

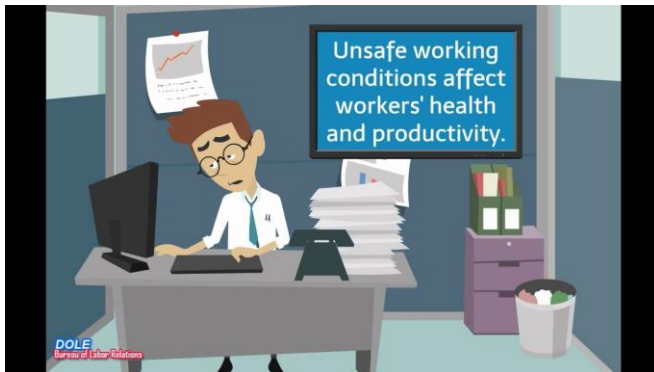
Issues or problems with the area are remedied or reported to the appropriate person.

Hazards and unacceptable performance are identified and corrective actions are taken within the level of responsibility.

Hazards and incidents are reported to appropriate personnel according to procedures

These steps may include:

- reporting the issue verbally to your **supervisor or manager**
- reporting the issue through the workplace's hazard reporting procedures
- raising the issue with the **health and safety representative**
- raising the issue with management through your **Safety Officers**



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Hazard

Hazard is a very Familiar word, commonly used to mean risk, accident, fear etc. In industrial situation, hazard is any undesirable situation or system that exists, can cause inconvenience, which may end-up with fire, explosion, toxic release etc. Hazard in severe play can cause death, property damage, environmental impact or inconvenience in production operation. Hazards may be biological, Chemical, Physical, Ergonomic and Psychological.

Biological Hazards:



Hazards are caused by living organisms which include insects, molds, fungi, viruses, and bacterial contamination; from defects in sanitation and housekeeping procedures, such as in the provision of potable water, removal of industrial waste and sewage, food handling and personal cleanliness

1. Bacteria –simple, one-celled organisms that may or may not be harmful.
2. Viruses –organisms that depend on a host cell for development or reproduction.
3. Fungi –may be small or large parasitic organisms growing in a living or dead plant animal matter.
4. Rickettsia –rod-shaped microorganisms that are smaller than bacteria and depend on a host for development or reproduction. Microorganisms transmitted by fleas, ticks, and lice

Common Health Problems from Biological Hazards

- A Tuberculosis (TB)
- B Tetanus,
- C Viral Hepatitis
- D HIV/AIDS

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Diseases caused by virus

- A Upper Respiratory Tract Infection
- B Hepatitis Infection
- C Acquired Immunodeficiency Syndrome (AIDS)
- D Rabies

Biological Hazards Commonly Found in the Workplace

- Sharing equipment, clothing, supplies
- Hand contact from contaminated surfaces
- Blood and body fluids
- Food and waste handling
- Human handling
- Bug bites
- Plant and food allergies/poison
- Animal handling and/or bites



Chemical Hazards:

Hazards arise from inhaling chemical agents in the form of vapors, gases, dusts, fumes, mists, or by skin contact with these materials.

- Mists.: Fine particles of a liquid float in air
- Gases.: Substances in gaseous state but are always airborne at room temperature.
- Vapors.: Results when substances that are liquids at room temperature evaporate
- Dusts.: Solid harmful substances are ground, cut or crushed by mechanical actions.
- Fumes. Gas is condensed in air, chemically changed and becomes fine solid particles which float in air.

Four Possible Routes of Entry of Chemical Hazards

1. Inhalation. Breathing in toxics is the most common and dangerous route.
2. Ingestion. Toxics enter through the gastrointestinal tract.
3. Absorption. Toxics pass through skin into the bloodstream.
4. Injection. Toxics may be injected into the body (needles, etc.)-the least common, yet most direct route of entry

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Figure 2. Chemical agents



Chemical Hazard

Physical hazards:

- Physical hazards include Fire, glass, plastic, metal, wood, stone, bone, dust and insect parts.
- Physical hazards can be introduced anywhere along the food processing line from equipment or employees or can be inherent in the raw materials.



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Electrical Hazard



Fire Hazard

Electricity

Electric shock occurs when a person becomes part of an electrical circuit and the current flows through their body. A fatal shock is called an electrocution. Electrical accidents are usually caused by a combination of factors, which include:

- hazardous work environment
- lack of training
- lack of supervision
- poorly maintained equipment.

A common cause of electrocution is contact with overhead electrical wires when operating equipment with height extension such as cranes. Performing maintenance on live electrical circuits, or equipment becoming 'live' due to electrical faults are also frequent causes of electric shock. When working with electricity you should observe the following precautions.

- Appliances and leads should be in safe working order, and regularly inspected.
- Broken or damaged electrical equipment should be removed from service and repaired/replaced.
- Appliances should always be switched off at the power point before pulling out the plug.
- Read the instruction booklet and follow all instructions when using electrical equipment.
- Keep electrical equipment away from wet areas, only cordless tools should be used in damp or wet conditions.
- The location of cables (overhead, underground, under floor and in walls) should be known before digging or drilling.
- Metal ladders should not be used for electrical work.
- Only licensed electrical workers should perform electrical work.
- A Residual Current Device (RCD) should be used with portable electrical equipment.
-

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- Circuits and fuses should not be overloaded by using too many appliances from the one power point, power boards with individual switches should be used instead of double adaptors.



Electricity

Complete the electricity mini-quiz by ticking the correct answers to the statements below.

1. A fatal shock is called an electrocution.

- True
- False

2. It is alright to work on electrical equipment if you are not a licensed electrician.

- True
- False

3. You can use metal ladders when doing electrical work.

- True
- False

4. Electrical equipment should be kept away from wet areas.

- True
- False

5. You should turn off a power point before pulling out the plug.

- True
- False

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Control measures for Electrical hazard

Physical hazard

is an agent, factor or circumstance that can cause harm with or without contact. They can be classified as type of occupational **hazard** or environmental **hazard**. **Physical hazards** include ergonomic **hazards**, radiation, heat and cold stress, vibration **hazards**, and noise **hazards**.

Ergonomic Hazards:

Ergonomic Hazards are caused by poorly designed workplaces or processes. Examples are poor lighting, workstations that are too high or low for you or a job that requires you to repeat the same movement over and over.

Hazards are commonly seen in the workplaces which are improperly designed tools or work areas, improper lifting or reaching, poor visual conditions or repeated motions in an awkward position that may be responsible for fatigue, stress and strain and may lead to accidents in the occupational environment.

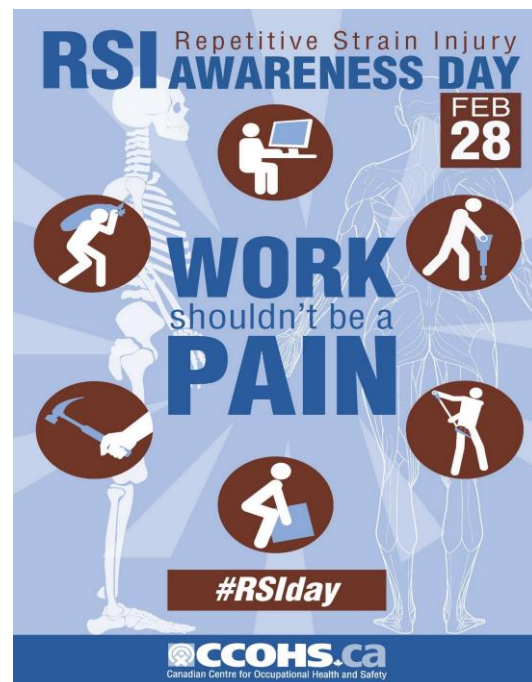
Effects of Ergonomic Hazards

- low productivity
- high rate of errors
- material wastage and equipment

Health Problems caused by Ergonomics

- musculoskeletal problems
- vascular problems
- visual problems
- hearing problems
- skin problem
- psychological problems

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Psychosocial Hazards

Psychosocial hazards are those resulting from working relationship or situational factors that create psychological/ mental pressure in the employee. *Examples are:* hazard out of mental stress, Monotony of work, Fatigue, Brain fog and Irritation.

Human factor failure Hazards.

Human factors failure hazards are those outcome from human faults & lagging. *Example are:* Unsafe work practice, Ergonomic factors (forceful movement, position of person in relation to the work, lifting & carrying of excessive weight, improper use of hands, legs and feet), lack of communication and co-ordination, poor training, improper manning, accident proneness, negligence of management etc.

How to determine and apply control measures for reduce food safety hazards:

- **For biological hazards**, control measures may include an appropriate time/temperature, cooking step and other post processing treatment to destroy microbiological organisms.
- **For chemical hazards**, such as allergies, control measures may involve implementing an allergen prevention plan.
- **For physical hazards**, control measures may include suitable detection or screening devices.
- **Electrical hazards is also a physical hazard**

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Hazard management

One of the most important safety duties required by OHS law is to keep the workplace as safe as possible. A good way to do this is to use the four-step Hazard Management process. The process is represented by the following diagram:

S A F E

pot the hazard
ssess the hazard
ix the hazard
valuate the results

Hazard identification and control

Hazard may be identified into four- severity rating considering their adverse consequences:

- **Catastrophic hazards** which results death, widespread or severe occupational illness or loss of an entire production operation/process.
- **Critical hazards** which may result in death but additionally, include situations that may produce serious injuries such as the loss of an eye or a limb, illness requiring medical treatment or extensive property damage.
- **Marginal hazards** may cause minor injury such as cuts and contusions, illness such as headache, nausea or mild eye, skin or respiratory tract irritation or slight damage to equipment or property.
- **Negligible hazards** are those which will not result in serious injury or illness and will cause little or no damage to property or equipment.

Probability of Hazard Occurrence:

The Probability or likelihood that a hazard will result in an adverse consequence may be classified as:

- Frequent - likely to occur virtually every time
- Probable - likely to occur most of the time
- Occasional - likely to occur sometimes
- Remote - very unlikely chance of occurring
- Improbable – no chance of occurrence

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Spot the hazard

Identify the hazard in each picture, and identify what harm the hazard might Cause, if it is not fixed.



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Hazard control

Hazard control is a continuous process in industries. This starts with the design phase, continues during the operation and ends with the dismantling/ close down of the industry. Here, we will discuss a very basic and primary concept of hazard control. Now a days, different specialized concepts are developed and are used according to the merit of requirement. But following procedures as described below are the basis of all concepts.

Steps for Hazard control are

- Hazard identification
- Hazard inventory
- Hazard ranking
- Assessing probability of occurrence
- Hazard rank assessment
- Hazard elimination/reduction/control.

Hazard control measures

Here are some examples of hazard control measures in a workplace (examples could be for noise, chemicals, electricity, machinery or odors).

Level 3:

PPE

Rehana prints a lot of newsletters, which involves setting up the photocopier and leaving it run. Rehana notices that when the machine has been working for a while she gets a headache from the solvents. She arranges to move the photocopier to a separate room so she is away from it.

Level 2:

Substitution

Kamal works in a kitchen. He notices that new people who use the meat slicer are hurting themselves. Kamal makes a sign which states that only trained people can use the meat slicer.

Level 1:

Elimination

Selina a volunteer gardener thinks her brush cutter is a bit too loud. Selina talks to her supervisor, and is given hearing protection to wear as a temporary measure until the problem can be assessed properly.

Level 3:

Administrative controls

Nadim trips over an electric cord to an old wall-mounted fan. An assessment reveals the fan is broken, and has not been used since the air conditioning was put in two years ago. Nadim removes the fan and its cord.

Level 2:

Engineering controls

Masud, a volunteer at a community library notices that the glue he is using is labelled “very toxic”, and has a health warning on it. Masud arranges to use glue that is not as dangerous.

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Self-Check 2.1-1

Q.1.What is Hazard?

Q.2. How many kinds of Hazard?

Q.3: How many Steps are in Hazard control?

Multiple Choices: Read and analyze the statement carefully. Choose the best answer and write the letter only in your answer sheet

Q4. Hazards due to transfer of energy between an object and a worker

- a. Chemical Hazards
- b. Physical Hazards
- c. Biological Hazards
- d. Ergonomics Hazards

Q5. What classification of hazards when a welder's hand deadened because of unadvisable position during welding?

- a. Chemical Hazards
- b. Physical Hazards
- c. Biological Hazards
- d. Ergonomics Hazards

Q6. Impact resulting from being struck by and struck against objects may cause serious accidents.

- a. Chemical Hazards
- b. Physical Hazards
- c. Biological Hazards
- d. Ergonomics Hazards

Q7. Toxics pass through gastrointestinal organ

- a. Ingestion
- b. Inhalation
- c. Absorption
- d. injection

Q8. People who work with animals, animal products or animal wastes have a greater risk of infection

- a. Chemical Hazards
- b. Physical Hazards
- c. Biological Hazards
- d. Ergonomics Hazards

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Answer Key 2.1-1

Q.1.What is Hazard?

Ans. A hazard is anything that may cause injury or illness if not controlled, reduced or prevented.

Q.2. How many kinds of Hazard?

Ans. Food hazards may be biological, chemical or physical.

Q.3 How many Steps are in Hazard control?

Ans: Steps for Hazard control are

- Hazard identification
- Hazard inventory
- Hazard ranking
- Assessing probability of occurrence
- Hazard rank assessment
- Hazard elimination/reduction/control.

Q4. b

Q5. d

Q6. b

Q7. a

Q8. c

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Task Sheet 2.1-1

Task Title: Identify Hazards in the Workplace

Purpose: To practice identifying Occupational Health and Safety.

Supplies/Material: Pen, Paper,

Procedure:

1. Ask your trainer for an assigned room in the training center.
2. Visit the room assigned to you and identify all the hazards in the workplace.
3. List down all your observations on a piece of paper and write down the corrective actions to be taken.
4. Submit your work to your trainer.

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LEARNING OUTCOME 3: CONDUCT WORK SAFELY

ASSESSMENT CRITERIA:

- 3.1 OSH Practices are applied in the workplace.
- 3.2 Appropriate personal protective equipment (PPE) is selected and worn.
- 3.3 Safety signs and Symbols are identified and followed.

CONTENTS:

1. OSH practices are applied in the training environment.
2. Appropriate personal protective equipment's (PPE) are selected and worn.
3. Safety signs and Symbols are identified and followed.

CONDITIONS:

Trainees must be provided with the following:

- Handouts or reference materials/books on the above stated contents
- PCs/printers or laptops with internet access
- Bond paper
- Ball pens/pencils and other office supplies and materials
- Communication resources
- Workplace or simulated environment

METHODOLOGIES:

- Lecture/discussion
- Demonstration/application
- presentation

ASSESSMENT METHODS:

- Written test
- Demonstration
- Observation
- Oral questioning

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Learning Experience 3.3-1

Learning Outcome 3: CONDUCT WORK SAFELY

Learning Experience	Resource/Special Instructions
Identifying Safety Standards in the Workplace	1. Read Information Sheet 3.3-1 2. Answer Self Check 3.3-1 3. Compare your answer to the Answer Key 3.2-1
Familiarizing on Personal Protective Equipment	4. Read Information Sheet 3.3-2 - Answer Self Check 3.3-2 - Compare your answer to the Answer Key 3.3-2
Familiarizing on safety signs and symbols in the work place	5. Read Information Sheet 3.3-3 - Answer Self Check 3.3-3 6. Compare your answer to the Answer Key 3.3-3

Information Sheet – 3.3-1

Conduct work safely

Learning Objectives:

After reading this Information Sheet, you will be able to identify and practice safety standards in the workplace.

Occupational Safety and Health Standards

Occupational Safety and Health Standards (OSHS) are mandatory rules and standards set and enforced to eliminate or reduce occupational safety and health hazards in the workplace.

OSH Standards aim to provide at least the minimum acceptable degree of protection that must be granted to every worker in relation to dangers of injury, sickness or death that may arise by reason of his or occupation. The provision of OSHS by the government is an exercise of police powers, with the intention of promoting the welfare and well-being of workers.

Coverage and Scope of OSHS

All establishments, workplaces and other undertakings are covered, including agricultural enterprises whether operating for profit or not, except:

1. Residential places exclusively devoted to dwelling purposes.
2. Those directly engaged in land, sea and air transportation (however, their dry Dockers, garages, hangers and repair shops and offices are covered).
3. The activities of a lessee regarding the safety of a mining claim or lease, including mines safety, mineral conservation and pollution in establishments or work places falling under the mining industry.

Minimum Standards on Safety and Health in the Workplace

The OSHS require every company to keep and maintain its workplace free from work hazards that are likely to cause physical harm to the workers or damage to property.

The following must be provided by the employer

- Appropriate seats, lighting and ventilation.
- Adequate passageways, exits and firefighting equipment
- Separate toilet facilities and lockers for men and women.
- Appropriate safety clothing like protective gear, masks, helmets, safety boots, coats or goggles
- Medicines, medical supplies or first-aid kits.
- Free medical and dental services and facilities.

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Safety Measures to be Observed within the Premises of Establishments

- Building premises shall have adequate fire, emergency or danger signs and safety instructions of standard colors and sizes visible at all times.
- Other visible signs that may be needed to direct the drivers of motorized vehicle such as STOP, YIELD, and DO NOT ENTER, properly positioned within the compound of the establishment to increase safety especially during the night
- Handicapped employees shall be restricted only to designated workplaces. As far as practicable and feasible, they shall be provided with facilities for safe and convenient movement within the establishment
- Good housekeeping shall be maintained at all times through cleanliness of buildings, yards, machines, equipments, regular waste disposal, and the orderly arrangement of process operations, storage and filing materials.
- Adequate dressing rooms, lockers rooms, comfort rooms and lavatories separate for male and female workers shall be provided

Responsibilities of Employers and Employees under OSHS

Duties of Employers

- Adopt administrative policies on safety in accordance with the provisions of the standards.
- Report to the Regional Director or his/her duly authorized representative the policies adopted and the safety organization established
- Submit a report to the Regional Director or his/her duly authorized representative once every three months on the safety performance, safety committee meetings and its recommendations and measures taken to implement the recommendation.
- Act on recommended safety measures and provide access to appropriate authorities.

Duties of Employees

- Follow safety policies
- Report unsafe conditions and practices to the supervisor
- Serve as member of the Health and Safety Committee, when called upon to do so.
- Cooperate with the Health and Safety Committee
- Assist government agencies in the conduct of safety and health inspection

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Information Sheet 3.3-2

Personal Protective Equipment

Learning Objectives:

After reading this INFORMATION SHEET, you will be able to define Personal Protective Equipment (PPE).

Personal Protective Equipment PPE or Personal Protective Equipment is any clothing, equipment or substance designed to protect a person from risks of injury or illness. PPE may include:

- Ear muffs and ear plugs
- Respirators
- Eye and face protection such as goggles
- Safety helmets and sun hats
- Gloves and safety boots
- Clothing, such as aprons, uniforms, vests, life jackets

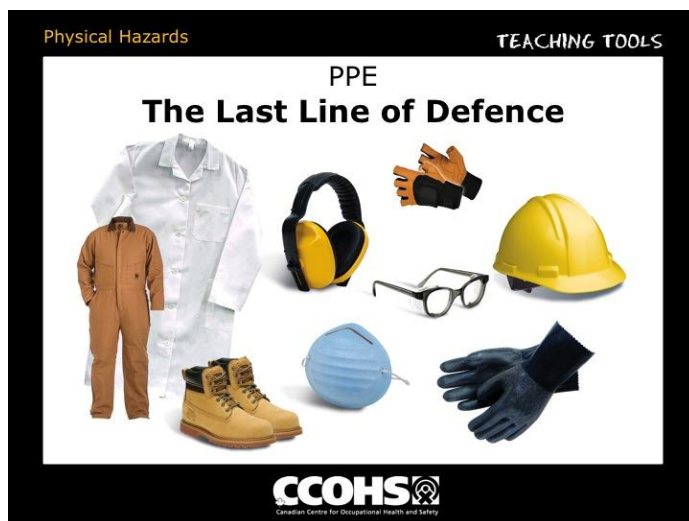


Figure 16. Personal Protective Equipment

Ear Protection

- Ear muffs are used to protect the ears from too much noise in the workplace. The designed is to fully cover the ears.
- Earplugs are used to protect the ears from too much noise in the workplace. The designed is to fully cover the ears.

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- Face shield is best for general protection of the face. Commonly worn under a welding helmet.
- Safety Goggles are used to protect the eyes from dust and particles.

Figure 18. Earplugs Eye and Face Protection



Figure 19. Face Shield, safety Glasses & Goggles

- Respirators filter dust and other particles from the air.



Figure 20. Respirators

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Proper Use of Personal Protective Equipment:

The primary approach in any safety effort is to maintain or change the physical environment so that accidents cannot occur. However, it is necessary for economic reasons or in temporary or changing conditions to safeguard personnel by equipping them individually with specialized personal protective equipment (PPE).

Although the use of PPE is an important consideration in the development of a safety and health program, it should not be used permanently instead of engineering out or otherwise maintaining a safe and healthy work environment. In general, government regulations list the use of PPE as a case of last resort. Analyze accident situations to determine whether PPE can prevent a recurrence. When work conditions cannot be made safer, clearly PPE is necessary.

Proper Training to obtain the worker's complete compliance with the requirements to wear the PPE, the following factors must be considered:

1. The extent to which the personnel who must wear the equipment understand its necessity
2. The ease and comfort with which it can be worn with a minimum of interference with normal procedures
3. The available economic, social, and disciplinary sanctions which can be used to influence the attitudes of the workers

Head Protection Safety hats should be inspected prior to each use.

Inspect suspension systems that show evidence of materials cracking, tearing, fraying or other signs of deterioration.

1. Check any signs of cracks or perforations of brim or shell, deformation of shell, or evidence or exposure to excessive heat, chemicals or radiation.



Fig: Head Protection

2. Remove any accumulation of conductive material on or inside the shell that cannot be removed prior to use.

Objects should not be placed inside the safety hat between the shell and the suspension device. This space is designed so an impact will not transmit to the head of the worker.

Safety hats should be kept free of abrasions, scrapes and nicks and should not be deliberately dropped, thrown or otherwise abused because they will lose their protective qualities.

Ventilation should not be drilled in safety hats.

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Eye and Face Protection

Eye protectors must meet the minimum requirements:

1. Provide adequate protection against the particular hazards for which they are designed
2. Be reasonably comfortable when worn under the designated conditions
3. Fit snugly without interfering with the movements or vision of the wearer
4. Be durable
5. Be capable of being disinfected
6. Be easily cleanable
7. Be kept clean and in good repair
8. The fitting of goggles and safety spectacles should be performed by someone skilled in the procedure. Prescription safety spectacles should be fitted only by a qualified optical person. Safety spectacles require special frames. Combinations of normal street wear frames with safety lenses are not in compliance.

Ear Protection

The prevention of excessive noise exposure is the only way to avoid hearing damage. Engineering and administrative control must be used if the sound levels are exceeded. If such controls fail to reduce the sound levels within the level specified, personal hearing protection must be used. Molded earplugs should be individually fitted by a professional.

Some earplugs are disposable, to be used one time and then thrown away. The non-disposable type should be cleaned after each use for proper protection

Earmuffs must make a perfect seal around the ear to be effective. Glasses, long sideburns, long hair and facial movements, such as chewing can be reducing protection. Special equipment is available for use with glasses or beards.

Foot and Leg:

Protection of feet and legs from falling or rolling objects, sharp objects, molten metal, hot surfaces, and wet slippery surfaces, workers should use appropriate foot guards, safety shoes, boots and leggings.

Never wear open-toed while working with hot metal or welding apparatus.



Safety shoes and Leggin

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Safety signs

Safety signs: As you go about your work on a construction site you will see a variety of signs and notices. Some of these will be familiar to you –a 'no smoking' sign for example; others you may not have seen before. It is up to you to learn what they mean-and to take notice of them. They warn of the possible danger, and must not be ignored.

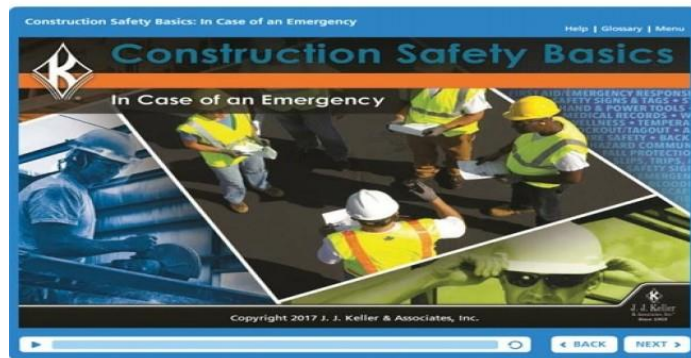
Safety signs fall into four separate categories. These can be recognized by their shape and color. Sometimes they may be just a symbol; other signs may include letters or figures and provide extra information such as the clearance height of an obstacle or the safe working load of a crane.

Prohibition signs

Shape and colour : Circular. Red border and cross bar. Black symbol on white background.

Meaning : It must not be done.

Example: No smoking.



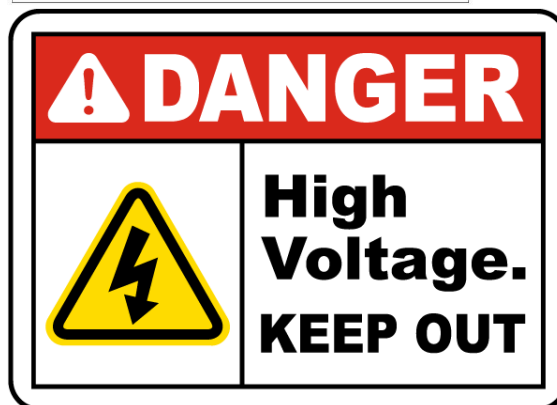
More Prohibition signs



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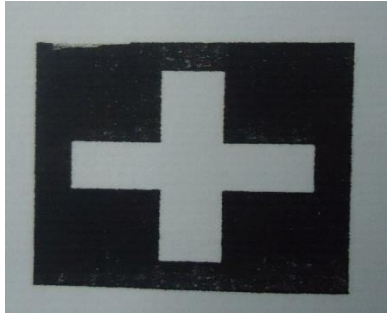
Warning signs



Shape and colour: Triangular. Yellow background with black border and symbol. Meaning: Warns of hazard or danger. Example: Caution, risk of electric shock.

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First aid Kit:



Shape and colour: Square or oblong. with symbols on green background.

Meaning: Indicates or gives information of safety provision.

Example: First aid point



Information signs



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Self-Check -3.3-1

1. Enumerate five (5) minimum standards of Health and Safety in the workplace.
2. Enumerate five (5) Safety Measures to be observed within the premises of establishments.
3. Enumerate three (3) Duties of Employers under OSHS
4. Enumerate three (3) Duties of Employees under OSHS
5. Multiple Choice: Read and analyze the statement carefully. Choose the best answer and write the letter only in your answer sheet.

1. Pictures used to inform workers on safety practices.

- a. Cautions
- b. Warnings
- c. Prohibitions
- d. Safety signs

2. Usually the first element that you notice when looking at a safety level

- a. Words
- b. Color
- c. Background
- d. Signal words

3. Use to indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

- a. Danger
- b. Caution
- c. Warning
- d. Emergency

4. Prohibition signs used a symbolic shape.

- a. red circle
- b. text with symbol
- c. indicate that an action is not allowed
- d. red circle with slash over a black symbol

5. Signs indicate that an instruction must be carried out.

- a. regulatory signs
- b. mandatory signs
- c. prohibition signs
- d. warning signs

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Answer Key -3.3-1

1. Enumerate five (5) minimum standards of Health and Safety in the workplace

- a. Appropriate seats, lighting and ventilation
- b. Adequate passageways, exits and firefighting equipment
- c. Separate toilet facilities and lockers for men and women
- d. Appropriate safety clothing like protective gear, masks, helmets, safety boots, coats or goggles
- e. Medicines, medical supplies or first-aid kits
- f. Free medical and dental services and facilities

2. Enumerate five (5) Safety Measures to be observed within the premises of establishments.

- a. Building premises shall have adequate fire, emergency or danger signs and safety instructions of standard colors and sizes visible at all times.
- b. Other visible signs that may be needed to direct the drivers of motorized vehicle such as STOP, YIELD, and DO NOT ENTER, properly positioned within the compound of the establishment
- c. Handicapped employees shall be restricted only to designated workplaces.
- d. Good housekeeping shall be maintained at all times
- e. Adequate dressing rooms, lockers rooms, comfort rooms and lavatories separate for male and female workers shall be provided

3. Enumerate three (3) Duties of Employers under OSHS.

- a. Adopt administrative policies on safety in accordance with the provisions of the standards.
- b. Report to the Regional Director or his/her duly authorized representative the policies adopted and the safety organization established.
- c. Submit a report to the Regional Director or his/her duly authorized representative once every three months on the safety performance, safety committee meetings and its recommendations and measures taken to implement the recommendation.
- d. Act on recommended safety measures and provide access to appropriate authorities.

4. Enumerate three (3) Duties of Employees under OSHS

- a. Follow safety policies
- b. Report unsafe conditions and practices to the supervisor
- c. Serve as member of the Health and Safety Committee, when called upon to do so.
- d. Cooperate with the Health and Safety Committee. Assist government agencies in the conduct of safety and health inspection.

1. d , 2.d, 3.b , 4.d ,5.b

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LEARNING OUTCOME 4: FOLLOW EMERGENCY RESPONSE PROCEDURES

ASSESSMENT CRITERIA:

- 4.1 Emergency situations are identified and reported according to workplace reporting requirements.
- 4.2 Emergency procedures are followed as appropriate to the nature of the emergency and according to workplace procedures.
- 4.3 Emergency situations are reported to concern person.
- 4.4 Workplace procedures for dealing with accidents, fires, and emergencies are followed whenever necessary within scope of responsibilities.

CONTENTS:

- Emergency situations
- Nature of the emergency
- Emergency situations are reported to concern person.
- Workplace procedures for dealing with accidents, fires, and emergencies

CONDITIONS:

Trainees must be provided with the following:

- Handouts or reference materials/books on the above stated contents
- PCs/printers or laptops with internet access
- Bond paper
- Ball pens/pencils and other office supplies and materials
- Communication resources, Personal Protective equipment
- Workplace or simulated environment

METHODOLOGIES:

- Lecture/discussion
- Demonstration/application
- presentation

ASSESSMENT METHODS:

- Written test
- Demonstration
- Observation
- Oral questioning

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Learning Experience 3.4-1

Learning Outcome 4:

FOLLOW EMERGENCY RESPONSE PROCEDURES

Learning Experience	Resource/Special instructions
Familiarizing on Work-Related Injuries and First Aid Treatment Procedures	Read Information Sheet 3.4-1 Answer Self Check 3.4-1 Compare your answer to the Answer Key 3.4-1 Perform Task Sheet 3.4-1 Check your work using Performance Criteria Checklist 3.4-1
Practicing Proper Use of Fire Extinguisher	Read Information Sheet 3.4-2 Answer Self Check 3.4-2 Compare your answer to the Answer Key 3.4-2

Information Sheet - 3.4-1

Related Injuries and First Aid Treatment

Learning Objectives:

After reading this Information Sheet, you will be able to identify different work-related injuries and procedures for first aid treatment.

Types of Work-Related Injuries

Accident prevention is the concern of every individual. People with pride in their work consider not only their own safety but the safety of others. If knowledge and foresight were the first requirements of skilled work, most serious accidents would be avoided. It is a good idea to remember, before starting any project that, “accidents don’t just happen”. They are caused by ignorance and carelessness.

Hazard causes injuries and illnesses right away. Other hazards may not cause an injury or illness until much later in life. Workers experienced injuries are cautious to do the same practices causing them to be injured. It has been observed that workers feel not comfortable with their works once afflicted with injuries.

The following are welding related injuries that cause the good performance of the workers.

1. Burns. The most common and painful injuries that occur in the workshop.

Types of Burn Injuries

1. Thermal Burns. Not all thermal burns are caused by flames. Contact with hot objects, flammable vapor that ignites and causes a flash or an explosion, and steam or hot liquid are other common causes of burns.
1. Chemical Burns. Chemical will continue to cause tissue destruction until the chemical agent is removed.
2. Electrical Burns. The injury severity from exposure to electrical current depends on the type of current (direct or alternating), the voltage, the area of the body exposed, and the duration of contact.

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Classification of Burns:

Burns are classified depending on the severity of burns:

1. First-degree Burn. Burns occurred when the surface of the skin is reddish in color, tender, and painful and does not involve any broken skin.
2. Second-degree Burn. Burns occurred when the surface of the skin is severely damaged, resulting in the formation of blisters and possible breaks in the skin.
3. Third-degree Burn. Burns occurred when the surface of the skin and possibly the tissue below the skin appear white or charred. Initially, little pain is present because nerve endings have been destroyed.

Wounds.

Break in the continuity of a tissue of the body either internal or external.

Two Classifications of Wounds

A Closed Wound Causes:

- Blunt object result in contusion or bruises
- Application of external forces

B Open Wound

Classification of Open Wound

- Puncture –penetrating pointed instruments such as nails, ice picks, daggers, etc.
- Abrasion –scrapping or rubbing against rough surfaces •Laceration –blunt instruments such as shrapnel, rocks, broken glasses, etc
- Avulsion –explosion, animal bites, mishandling of tools, etc.
- Incision –sharp bladed instruments such as blades, razors, etc.

First Aid Treatment Procedures

First aid is an immediate care given to a person who has been injured or suddenly taken ill. It includes self-help and home care if medical assistance is not available or delayed.

Objectives of First Aid

1. To alleviate suffering
2. To prevent added/further injury or danger
3. To prolong life

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Hindrances in Giving First Aid

1. Unfavorable surroundings
2. The presence of crowds
3. Pressure from victim or relatives

First Aid Equipment and Supplies

1. Basic Equipment

- Spine board
- Short board
- Sets of splints
- Poles
- Blankets

2. Suggested Basic First Aid Kit Contents

- Rubbing alcohol
- Povidone iodine
- Cotton
- Gauge pads
- Tongue depressor
- Penlight
- Band aid
- Gloves
- Scissors
- Forceps
- Bandages (Triangular)
- Elastic roller bandages
- Occlusive dressings
- Plaster

3. Cloth Material commonly used in First Aid

- Dressing –any sterile cloth material used to cover the wound
- Bandages –any clean cloth material sterile or not use to hold the dressing in place.

Guidelines in Giving First Aid Treatment

Getting Started

1. Planning of action
2. Gathering needed materials

3. Remember the initial response as follows:

A –ask for help

I –intervene

D –do not further harm

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4. Instruction to helpers

Emergency Action Principle

1. Survey and Scene

- Is the scene safe?
- What happened
- How many people are injured?
- Are there bystanders who can help?
- Identify yourself as a trained first aider.
- Get consent to give care?
- Checking for responsiveness

2. Activate EMS

Depending on the situation:

Phone first or phone fast.

A bystander should make the telephone call for help (If available).-

A bystander will be requested to call for a physician.-

Somebody will be asked to arrange for transfer facility.

Information to be remembered in activating medical assistance:

-What happened?

-Location

-Number of persons injured?

-Extent of injury and first aid given?

-The telephone number from where you are calling?

-Person who activated medical assistance must identify him/herself and drop the phone last.

3. Primary Survey

•Check for airway

Ways in opening the airway

1. Head Tilt-Chin Lift Maneuver

2. Jaw-Thrust Maneuver

•Check for breathing

•Check for circulation

4. Secondary Survey

•Interview the victim.

-Ask the victim's name.

-Ask what happened.

-Assess the sample history

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- Check the vital signs
- Determine radial or carotid pulse (pulse rate)

Adult	60 –90/min
Child	80 –100/min
Infant	100 –120/min

Determine breathing (respiration rate)

Adult	12 –20/min
Child	18 –25/min
infant	25 –35/min

Do Head-to-toe examination looking for DCAP-BTLS (Deformity, Contusion, Abrasion, Puncture, Burn, Tenderness, Laceration, Swelling)

Golden Rules in Giving Emergency Care

1. What to Do:

- Do obtain consent when possible.
- Do think the worst. It's best to administer first aid for the gravest possibility.
- Do remember to identify yourself to the victim.
- Do provide comfort and emotional support.
- Do respect the victim's modesty and physical privacy.
- Do be as calm and as direct as possible.
- Do care for the most serious injuries first.
- Do assist the victim with his or her prescription medication.
- Do keep onlookers away from the injured person.
- Do handle the victim to a minimum.
- Do loosen tight clothing.

2. What Not to Do:

- Do not let the victim see his/her injury.
- Do not leave the victim alone except to get help.
- Do not assume that the victim's obvious injuries are the only ones.
- Do not make any unrealistic promises.
- Do not trust the judgment of a confused victim and require them to make decision

Proper Handling of Injured Victim

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Extrication is a rapid movement of patient from unsafe place to a place of safety.
Indications for Emergency Rescue

1. Danger of fire or explosion.
2. Danger of toxic gases or asphyxia due to lack of oxygen.
3. Serious traffic hazards.
4. Risk of drowning.
5. Danger of electrocution.
6. Danger of collapsing walls.

Methods of Rescue:

1. For immediate rescue without any assistance, drag or pull the victim.
2. Most of the one-man drags/carries and other transfer methods can be used as methods of rescue.

Transfer is moving a patient from one place to another after giving first aid.

Factors to be considered in the selection of choosing the transfer method:

1. Nature and severity of the injury.
2. Size of the victim.
3. Physical capabilities of the first aider.
4. Number of personnel and equipment available.
5. Nature of evacuation route.
6. Distance to be covered.
7. Gender of the victims (last consideration)

Pointers to be observed during transfer.

1. Victim's airway must be maintained open.
2. Hemorrhage is controlled.
3. Victim is safely maintained in the proper position.
4. Regular check of the victim's condition is made.
5. Supporting bandages and dressings remain effectively applied.
6. The method of transfer is safe, comfortable and as speedy as circumstances permit.
7. The patient's body is moved as one unit.
8. The taller first aiders stay at the head side of the victim
9. First Aider's/bearer must observe ergonomics in lifting and moving of patient

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Methods of Transfer

1. One-man assist/carries/drag

- Assist to walk
- Carry in arms (cradle)
- Pack strap carry
- Piggy back carry
- Fireman's carry
- Fireman's drag
- Blanket drag
- Armpit/shoulder drag
- Cloth drag
- Feet drag
- Inclined drag (head first –passing a stairway)

2. Two-man assist/carries

- Assist to walk
- Four-hand seat
- Hands as a litter
- Carry by extremities
- Fireman's carry with assistance

3. Three-man assist/carries

- Bearers alongside (for narrow alleys)
- Hammock carry

4. Four/six/eight-man carry

5. Blanket (demonstrate the insertion, testing and lifting of blanket)

6. Improvised stretcher using two poles with

- Blanket
- Empty sacks
- Shirts of coat
- Triangular bandages

7. Commercial stretcher

8. Ambulance or rescue van

9. Other vehicles

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Self-Check No: 3.4-1

Multiple Choice:

Direction: Read and analyses the statement carefully. Choose the best answer and write the letter only in your answer sheet.

1. When you accidentally cut your finger with a knife, it is called a:
A Avulsion
B Incision
C Puncture
D Abrasion
2. An immediate care given to a person who has been injured or suddenly taken ill.
A care
B nurse
C first aid
D care and nurse
3. These are important rules in giving emergency care to a victim except,
A provide comfort and emotional support.
B rust the judgment of a confused victim
C remember to identify yourself to the victim
D administer first aid for the gravest possibility
4. These are indications of emergency rescue in the workplace except
A presence of fire
B danger of explosion
C serious traffic hazards
D danger of electrocution
5. When transferring the victim from one place to another, the first thing to observed always
A hemorrhage is controlled
B safely maintained in the proper position
C regularly check the condition of the victim
D victim's airway must be maintained open

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Answer Key 3.4-1

1.B

2.C

3.B

4.C

5.D

Task Sheet – 3.4-1

Activity Title:	Emergency Situation Role Playing
Purpose :	To role-play an emergency situation and respond appropriately
Supplies/Materials:	Work station, first aid kit, and emergency response kit.
Procedures :	1. Make a group consisting of 5 trainees in your class 2. Select on the emergencies discussed in this module 3. Make a script for a role-play 4. Ask your trainer if your group is ready to perform 5. Perform the role play with consideration on proper emergency responses
Assessment Method:	Performance Criteria Checklist

Information Sheet - 3.4-2

Proper Use of Fire Extinguisher

Learning Objectives:

After reading this Information Sheet, you will be able to demonstrate proper use of fire extinguisher.

Proper Use of Fire Extinguisher A fire extinguisher works by breaking the fire triangle of heat, fuel, and oxygen. Most extinguishers both cool the fire and remove the oxygen. They use a variety of materials to extinguish the fire. The majority of fire extinguishers found in welding shops use foam, carbon dioxide, a soda-acid gas cartridge, pump tank, or dry chemicals

When using foam extinguisher: Don't spray the stream directly into the burning liquid. Allow the foam to fall lightly on the fire.

When using a carbon dioxide extinguisher: Direct the discharge as close to the fire as possible, first at the edge of the flames and gradually to the center.

When using a soda-acid gas cartridge extinguisher: Place your foot on the footrest and direct the stream at the base of the flames.

When using a dry chemical extinguisher: Direct the extinguisher at the base of the flames. In the case of Class A fires, follow up by directing the dry chemicals at the remaining materials still burning. Therefore, the extinguisher must be directed at the base of the fire where the fuel is located.

Steps in Extinguishing Fire using Portable Fire Extinguisher

1. Approach the fire no closer than 1.8 m from the fire.

another way of proper operation of fire extinguisher is applying the word

“PASS”.

P –ull the pin of the fire extinguisher

A –im the nozzle at the bottom of fire

S –queeze the handle of the fire extinguisher

S –weep or side-to-side motion.

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Figure31. Extinguishing Fires



Actions to be taken if a fire starts

1. 1. Stop the fire immediately on discovery with the first air fire fighting equipment available.
2. Warn everyone in the area.
3. Contact your supervisor so that a warning is issued and fire equipment is rushed to the area.

Stop fighting the fire and leave the area if,

1. The fire is beyond control
2. Escape route is threatened by fire
3. Smoke obscures or threatens to obscure the escape route

Steps:

1. Stop the **fire** before it starts.
2. Turn off power to the electrical system.
3. Use a Class C-rated **extinguisher** if you cannot cut the power to the source.
4. Use a Class A or dry chemical **extinguisher** if you have cut the power.
5. Use a **fire** blanket to smother the **fire**.
6. Use water to **extinguish** the **fire**.
7. Call 911.

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Self-Check - 3.4-2

Multiple Choices:

Direction: Read and analyze the statement carefully. Choose the best answer and write the letter only in your answer sheet.

1.What is the approximate distance of the fire fighter away from the fire using fire extinguisher?

- a.1.2 meter b.1.5 meter c.1.8 meter d.2.0 meter

2.This type of fire extinguisher is not allowed to spray directly into the burning liquid?

- a. foam extinguisher
- b. soda-acid fire extinguisher
- c. dry chemical fire extinguisher
- d. carbon dioxide fire extinguisher

3.To extinguish a fire, it is best practice aiming the nozzle of fire extinguishers at the

- a. material burning
- b. near the flame
- c. base of the flames
- d. edge of the flames

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Answer Key- 3.4-2

1.c

2.a

3.c

LEARNING OUTCOME -5: MAINTAIN AND IMPROVE HEALTH AND SAFETY IN THE WORKPLACE

ASSESSMENT CRITERIA:

- 5.1 Risks are identified and appropriate control measures are implemented in the work area.
- 5.2 Recommendations arising from risk assessments are implemented within level of responsibility
- 5.3 Opportunities for improving OSH performance are identified and raised with relevant personnel.
- 5.4 Green Practices area is identified.
- 5.5 Green skills are applied / maintained.
- 5.6 Safety records are documented according to company policies.

CONTENTS:

- Risks identification control
- Risk assessments
- Improvement of OSH performance
- Green Practices.
- Green skills.
- Safety records documentation

CONDITIONS:

Trainees must be provided with the following:

- Handouts or reference materials/books on the above stated contents
- PCs/printers or laptops with internet access
- Bond paper
- Ball pens/pencils and other office supplies and materials
- Communication resources, Personal protective equipment
- Workplace or simulated environment

METHODOLOGIES:

- Lecture/discussion
- Demonstration/application
- presentation

ASSESSMENT METHODS:

- Written test
- Demonstration
- Observation
- Oral questioning

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Information Sheet – 3.5 - 1

Maintain and Improve Health and Safety in the workplace

Managing Risks

Overview

Risk management has become part of lots of management systems. The information security management system for example uses risk management to assess the risks associated with the audit findings of the information security management system. The same way the occupational health and safety management system makes use of risk management to assess the risk associated with hazards.

This gives the frame for the process in occupational health and safety:

- Identifying hazards
- Assessing associated risks
- Taking action to mitigate risks
- Monitoring the effectiveness

Identifying hazards A hazard is anything that is a threat to health and safety in an organization. Therefore it is linked to the people of the organization and it immediately becomes clear that everybody has to contribute to finding hazards at his or her workplace. It is a legal requirement in some countries that employers have to consult their employees.

A hazard is not just linked to technical equipment or a material used at a workplace but has to include processes and procedures that determine the work at the workplace.

Sources for hazard identification can be:

- Past incidents and accidents
- Input by employees
- Examining workplaces or work areas
- Review of safety instruction for equipment and materials
- Any kind of creative thinking such as brainstorming
- Advice from legislation, standards, checklists or external consultants.

Assessing associated risks

Prior to assessing risks these risks associated to the identified hazards have to be determined. Mind the gap and clearly understand that hazards and risks resulting from hazards are something different!

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Risk assessment itself is very much the same as with risk assessment in other management systems. Typically, a risk is assessed by its likelihood and its consequence. Risk assessment will provide you with an insight in your risks and allow prioritizing risks for taking mitigating actions.

A risk matrix serves well to define and classify likelihood and consequences of a risk. A risk matrix makes use of descriptors to define levels of both likelihood (from almost certain to rare) and consequence (from insignificant to catastrophic).

The following aspects may be helpful to determine the likelihood of a risk:

- Other risks that add to the increase of likelihood
- Frequency of occurrence
- Duration of risk occurrence
- Number of people being exposed
- Likely dose of exposure
- Required exposure levels

Accordingly, the consequences have to be determined. With regard to property and environmental damage these consequences can be expressed in terms of money.

Whenever people are harmed the consequences can be expressed in terms of seriousness of the illness or injury. This has further to be put in relation to who is harmed, especially people at a particular risk such as expectant mothers or young people.

Risk assessment will be completed with prioritization of risks and assigned risk factors to understand the scope of mitigating actions required.

Monitoring the effectiveness

The outcome of each risk mitigating action has to be reviewed on two levels:

- i. To ensure that the actions taken are effective and continue to be effective.
- ii. To ensure that no new hazard/risk was introduced by the actions taken.

Any control measures have to be maintained in order to ensure that they are kept in working order. As well procedures have to be audited to ensure they are being followed as intended.

After completing one entire cycle of risk management the next has to be scheduled to ensure that always the best actions are taken and new hazards are included into risk management.

Keeping Record

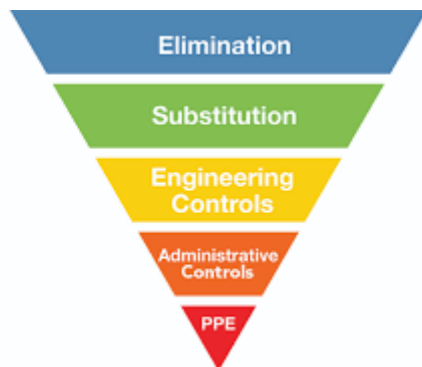
All analysis and assessments made as well as all actions taken need to be recorded. A Risk Register or Risk Log will serve to do so. To allow record keeping being an efficient task most organizations will look for a software solution providing such risk register.

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Control risks

The nature or the learning environment and the hazards and characteristics of the workgroup such as language, literacy and numeracy will influence the selection of the most appropriate controls. However there is a general principle that guides the selection of controls. This principle is referred to as the hierarchy of controls or the safety decision hierarchy. It is the golden rule for reliably and cost-effectively controlling the hazards. It describes the preferred options for controlling risk as follows

Hierarchy of control



In most situations, the actual method for controlling the risk is a combination of the options in the hierarchy. As we go down this list of options, the controls become less reliable and require more work to ensure they are maintained and that they work. Personal protective equipment is always considered a control of the last resort

Eliminate	Remove the risk	Eliminate the risk altogether eg cease using/doing a specific the task, process, substance, or equipment
Substitute	Substitute the hazard	Use a device, substance, method, process, place, or person, that is less harmful or hazardous
Isolation	Separate the risk	Isolating the hazard from the person environment or business
Engineering Controls	Design Adopt a safer process Enclose or isolate Ventilation	Design out or Modify Can it be done another way Use guards, close off, move away Provide adequate ventilation
Administrative Controls	Safe work procedures Information Job rotation Training/ Induction	Correct work procedures Provide appropriate information about risks Relieve stress/boredom; reduce exposure of individuals Know the dangers. How to do work correctly
Personal Protective Equipment	Provide and/or use Personal Protective	Using appropriately designed, maintained, and properly fitting equipment when all of the above control processes are not practicable.

	Clothing and Equipment PPE	Must also provide instruction on correct fitting, use, and maintenance
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Self-Check- 3.5 - 1

Maintain and Improve Health and Safety in the Workplace

01. What is workplace hazard?
02. Occupational health and safety already is a legal requirement in Bangladesh.
True or False
03. to define and classify likelihood and consequences of a risk, what tool we use?
04. Write down the steps of hierarchy of Control from bottom to top?
05. Write down 03 responsibility of a employer in terms of Safety
06. What should be your role as individual to work safely?
07. Who is the responsible person for reporting in a institute?

Answer Key - 3.5-1

01. What is workplace hazard?

Answer: A workplace is a place where people practice their occupation (or crafts, professions, trades)

02. Occupational health and safety already is a legal requirement in Bangladesh. True or False

Answer: True

03. To define and classify likelihood and consequences of a risk, what tool we use?

Answer: Risk Matrix

04. Write down the steps of hierarchy of Control from bottom to top

Ans:

- PPE
- Admin
- Engineering
- Isolation
- Substitutions
- Elimination

05. Write down 03 responsibility of a employer in terms of Safety

- Establish a health and safety policy and program
- Provide required training
- Provide the information, instruction and supervision you need to do your job safely

06. What should be your role as individual to work safely

- Obey the law
- Use machines and equipment safely
- Wear required personal protective equipment (PPE)
- Report hazards to your boss
- Work safely and don't fool around

07. Who is the responsible person for reporting in a institute?

Ans: Head of the department.

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Job: 1- Workplace Hazards

Identify risk in your job area. Use the risk analysis sheet available in Specification no:01.

Specification: 1 - Risk Analysis

Risk analysis sheet for training workshop

Score as follows, for Likelihood and Impact: High = 3, Medium = 2, Low = 1

Risk Analysis

Nature of Risk or Uncertainty	Likelihood High/ Medium/ Low	Impact High/ Medium/ Low	Likelihood x Impact [Score]	Actions required and who will take responsibility to manage the risk

Tools and Equipment

- Stationery

Green Practices

Green Practices means practices that can applied more environmentally, friendly and ecologically, which can help to protect the environment and sustain its natural resources for current and future generations.

Green practices area

1. Green and clean campus
2. Solar energy
3. Reduce the use of consumable materials
4. Use organic materials
5. Recycling materials
6. Manage waste materials

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- OSH and environmental issues integrated in an overall logic of workplace improvement that triggers concrete positive changes
- Highlighting of win-win solutions that deliver benefits in terms of environmental performance and workers' health and safety
- Incorporating health and safety concerns in green good practices
- Use of OSH concepts and tools for making workplaces safer in the face of climate-related disasters



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Use Solar Energy



Reduce the use of consumable materials

9 WAYS TO REDUCE PLASTIC IN YOUR WORKPLACE

-  **1**
Inspire your colleagues, hold an ocean plastic talk
-  **2**
Organise a park, river or beach clean with your team
-  **3**
Provide unlimited filtered tap water
-  **4**
Have reusables in kitchens & canteens
-  **5**
Reduce plastic in office tea & coffee
-  **6**
Encourage eco habits, gift reusables to your team
-  **7**
Ask your team for ideas to cut plastic in their roles
-  **8**
Request that suppliers use less plastic packaging
-  **9**
Share your successes, inspire others to act too

#PlasticGameChanger

LESS PLASTIC.

WWW.LESSPLASTIC.CO.UK

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Use organic materials

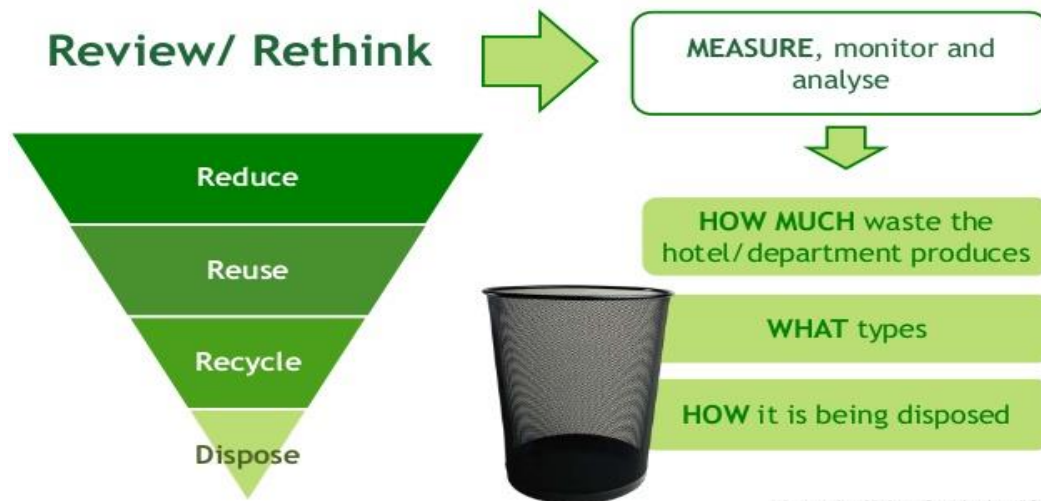


Recycling materials



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Getting Started Waste Review



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Review of Competency

Below is your performance criteria checklist for the module comprises elements 1 to 5 from the UoC : -TVTENV403A1 Apply OSH practices in a CBT&A environment

Assessment performance Criteria	Yes	No
1.1 Personnel responsible for OSH standards in the workplace is identified.	☐	☐
1.2 OSH standards that apply to the workplace are identified	☐	☐
1.3 OSH issues are identified in the workplace.	☐	☐
2.1 Appropriate Personnel responsible for OSH in the workplace is identified	☐	☐
2.2 Workplace is routinely checked for OSH hazards prior to commencing and during training.	☐	☐
2.3 Issues or problems with the area are remedied or reported to the appropriate person.	☐	☐
2.4 Hazards and unacceptable performance are identified and corrective actions are taken within the level of responsibility.	☐	☐
2.5 Hazards and incidents are reported to appropriate personnel according to procedures	☐	☐
3.1 OSH practices are applied in the training environment	☐	☐
3.2 Appropriate personal protective equipment's (PPE) are selected and worn.	☐	☐
3.3 Safety Signs and symbols are identified and followed	☐	☐
4.1 Emergency situations are identified	☐	☐
4.2 Emergency procedures are followed as appropriate to the nature of the emergency and according to workplace procedures.	☐	☐
4.3 Emergency situations are reported to concern person.	☐	☐

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4.4 Workplace procedures are followed for dealing with accidents, fires and emergencies within the scope of responsibilities.	☐	☐
5.1 Risks are identified and appropriate control measures are implemented in the work area.	☐	☐
5.2 Recommendations arising from risk assessments are implemented within level of responsibility	☐	☐
5.3 Opportunities for improving OSH performance are identified and raised with relevant personnel	☐	☐
5.4 Green Practices area are identified.	☐	☐
5.5 Green skills are applied/maintained.	☐	☐
5.6.Safety records are documented according to company policies.	☐	☐

I now feel ready to undertake my formal competency assessment.

Signature of trainee:

(Name:)

Date:

:

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Bangladesh Technical Education Board
Agargaon, Sher-E-Bangla Nagar
Dhaka-1207

Written By
Ms. Shaheen Afroz
General Manager (Retd.)
Bangladesh Parjatan Corporation
BTEB Certified Trainer & Assessor
Email: shaheenafroz57@gmail.com

Edited By
A.M. Zahirul Islam
Workshop Super
Dhaka polytechnic Institute
BTEB Certified Trainer & Assessor
Email: zahirdpi89@gmail.com

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PPD Secretariat Building Complex, Plot-17/B & C , Block-F
Agargaon, Sher-e-Bangla Nagar, , Dhaka-1207, Bangladesh
IP Phone +880 9678777457, web: ilo.org/dhaka

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