10

TVL Industrial Arts:

Electrical Installation and Maintenance (EIM) NCII

Quarter 2 – Module 2:

OCCUPATIONAL HEALTH SAFETY PROCEDURE

(Week 2)

DepED
DEPARTMENT OF EDUCATION

What I Need to Know

This module enables you to know the occupational health and safety procedure. There are many aspects where we consider the importance of being safe. However, because of human error or situation in the environment there are some unexpected events which result in serious injury or damage of property. Here, you are going to learn the basic concept of occupational health and safety procedures.

This module includes of the following:

- Health and safety procedure
- Safety work practices
- Safety tips

After going through this module, you are expected to:

1. know the importance of occupational health and safety;
2. formulate safety tips and procedure during at work; and
3. lay down safety work practices to be followed at work.

What I Know

Name: _____ Grade and Section: _____ Quarter: ___
Module Number: _____ Lesson Title: _____

A. Multiple Choice. Choose the letter of your answer and write it on a separate sheet of paper.

1. Any device worn by a worker to protect against hazards, as a barrier between himself or herself and the hazardous agent.
   A. Occupational Health C. Personal Protective Equipment
   B. Occupational Procedure D. Occupational safety
2. A planned system of working to prevent illness and injury where you work by recognizing and identifying hazards and risks
   A. Occupational safety and health C. Safety
   B. Occupational procedure D. Personal Protective equipment
3. An Occupational Health Safety Act states the following causes of electrical accidents **EXCEPT** one.
   A. Faulty insulation C. Improper grounding

B. Unguarded live parts D. Follow proper lockout/tagout procedures

4. It occurs when a person comes into contact with an electrical energy source.
   A. Safety C. Electric shock
   B. Accident D. Electrical hazard
5. A dangerous condition such that contact, or equipment failure can result in electric shock, arc-flash burn, thermal burn, or blast
   A. Safety C. Electric shock
   B. Accident D. Electrical hazard
6. The responsibility of all persons in the computer and technology industries
   A. Health and safety procedure C. Occupational safety
   B. Occupational Health D. Workplace
7. Recognize hazards associated with the use of electrical energy and taking precautions so that hazards do not cause injury or death.
   A. Electrical hazard C. Electrical safety
   B. Electrical shock D. Safety
8. An accident related to work
   A. Occupational accident C. Occupational hazard
   B. Occupational safety D. Occupational health
9. The following are the Safe work practices at home **EXCEPT** one.
   A. Always avoid water when working with electricity.
   B. Use equipment with frayed cords.
   C. Follow proper lockout/tag-out procedures
   D. Always use appropriate insulated rubber gloves and goggles while working on any branch circuit or any other electrical circuit.
10. The maintenance of a work environment that is relatively free from actual or potential hazards that can injure employees.
    A. Occupational accident C. Occupational hazard
    B. Occupational safety D. Occupational health
11. What is a possible outcome if you fail to follow electrical safety practices, particularly in the workplace?
    A. You will learn from your experiences
    B. Take opportunity to enjoy
    C. Can cause serious injury, loss of property or even death.
    D. Much work and routine activities may be done.
12. An unfortunate incident that happens unexpectedly and unintentionally, typically resulting in damage or injury.
    A. Accident C. Safety
    B. Hazardous locations D. Electrical hazard

For items number 13,14 and 15. Refer to the situation below.

John applied for an electrical job and was hired on the spot. The day after he was hired, John was assigned to the electrical site to install electrical fixtures which are new to him. Your answer to each question below will help John to be safe and complete his task.

13. What should John do before doing his task to avoid any accident? EXCEPT.

A. Wear personal protective equipment
B. Observed occupational health and safety standard
C. Used the right tools
D. Work faster in order to finish early.

14. John is a newly hired employee, what should he do in order to be guided in his new task?
A. Ask for assistance and training from a tenured employee.
B. Deal on the task given.
C. Show off and brag that he knows the job.
D. Work on the job even with less knowledge.

15. John brought some tools that were not appropriate for the specific job, what will he do in order to finish the job?
A. Continue using the tools.
B. Leave the job unfinished.
C. Look for initiatives to finish the job even if it is at risk.
D. Ask assistance from the supply officer for the right tools.

What's New

EXAMPLE OF A SITUATION SHOWING UNSAFE WORK PRACTICES

Spark ignites sawdust in service panel

At a wood product manufacturing plant, a three-phase motor was single-phasing. An electrician tested the incoming voltage to the electrical components inside a 600-volt 600-amp main service panel. A helper is not qualified personnel who assisted him by holding the multimeter, which was rated at 600 volts. There was a spark across the circuit board inside the multimeter. The spark ignited sawdust in the service panel. A sudden fireball caused burns to both workers.

What is It

Technical Terms:

- **Accident** is an unfortunate incident that happens unexpectedly and unintentionally, typically resulting in damage or injury.
- **Electrical Hazard** a dangerous condition such that contact, or equipment

failure can result in electric shock, arc-flash burn, thermal burn, or blast.

- **Electrical Safety** recognizing hazards associated with the use of electrical energy and taking precautions so that hazards do not cause injury or death
- An **electric shock** occurs when a person comes into contact with an **electrical** energy source.
- **Hazardous location** is a place where flammable materials are stored and will likely be a source of accidents.
- **Health and safety procedure** are the responsibility of all persons in the computer and technology industries.
- **Occupational accident** an accident related to work.
- **Occupational safety** the maintenance of a work environment that is relatively free from actual or potential hazards that can injure employees.
- **Occupational safety** and **health** (OSH) is a planned system of working to prevent illness and injury where you work by recognizing and identifying hazards and risks.
- **OHSS** refers to Occupational Health and Safety Standard.
- **Personal protective equipment** (PPE) any device worn by a worker to protect against hazards, as a barrier between himself or herself and the hazardous agent. Some examples are respirators, gloves, ear plugs, hard hats, safety goggles and safety shoes
- **Safety** the condition of being protected from or unlikely to cause danger, risk, or injury.
- **Workplace** any place where physical and/or mental labor occurs, whether paid or unpaid. This includes formal worksites, private homes, vehicles, or outdoor locations on public or private property

Electrical Safety Practices Save Lives and Properties

Electricity improves life. During power failures, much work and routine activities halt. However, electricity can cause serious injury or death and loss of properties if you fail to follow electrical safety practices, particularly in the workplace.

Electricity is also recognized as a serious workplace hazard that may cause electric shock, burns, fires, and explosions. In fact, according to the Bureau of Labor Statistics (BLS), 289 employees were killed by contact with electric current in 2002. Others were killed or injured in fires and explosions caused by electricity.

Causes of Electrical Accident

Occupational Health Safety Act (OHSA) also states that some unsafe electrical equipment and installations can be identified by faulty insulation, improper grounding, loose, defective parts, ground faults, unguarded live parts, and underrated equipment. The environment can also contribute to electrical accidents, environments containing flammable vapors, liquids, or gases; areas having corrosive atmospheres; and wet and damp locations are some unsafe environments affecting electrical safety. Unsafe acts include the failure to de-energize electric equipment

when it is being repaired or inspected, using obviously defective and unsafe tools, and using tools or equipment too close to energized parts.

Safe work practices at home

1. Always avoid water when working with electricity.
2. Never use equipment with frayed cords, damaged insulation, or broken plugs.
3. If you are working on any receptacle at your home, then always turn off the mains. Follow proper lockout/tagout procedure.
4. Electrical hazards include exposed energized parts and unguarded electrical equipment which may become energized unexpectedly. Such equipment always carries warning signs like "Shock Risk". Always be observant of such signs and follow the safety rules established by the electrical code followed by the country you are in.
5. Always use appropriate insulated rubber gloves and goggles while working on any branch circuit or any other electrical circuit.
6. Never try repairing energized equipment. Always check that it is de-energized first by using a tester.
7. Never use an aluminum or steel ladder if you are working on any receptacle at height in your home.
8. Know the wire code of your country.
9. Always check all your GFCI's once a month. A GFCI (Ground Fault Circuit Interrupter) is an RCD (Residual Current Device).

SAFETY TIPS

1. **LIGHTEN YOUR LOAD**. Plan what you are going to do. Carry only the tools or equipment you will need. Wear a tool belt that fits well and distribute the tools and materials evenly.

https://toolsheaven.com/electrician-tool-belt-setup/

2. **PROTECT YOURSELF.** Wear safety gear that fits well. Protect your knees from hard, sharp surfaces by wearing knee pads. Wear appropriate eye protection to protect your eyes from debris and flying particles. Protect your hands from friction and sharp edges by wearing gloves.

https://www.csslng.com/safety/

3. **SELECT THE RIGHT TOOL.** Choose tools with soft grips that fit your hand comfortably. A good handle grip prevents your hand from slipping while using the tool. Consider using tools that reduce the amount of force or movements to use.

https://www.ecmag.com/section/your-business/cool-tools-hand-tools

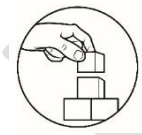
4. **PRACTICE GOOD HOUSEKEEPING.** Pick up debris and scrap material to prevent trips, slips, and falls. Good housekeeping allows you and your equipment to work efficiently.

5. **CHANGE BODY POSITIONS.** Working overhead, at floor level, or in cramped spaces forces the body into awkward postures. To relieve muscle tension and improve circulation, change body positions, do alternate tasks, and stretch your muscle throughout the day.

http://katalog-firmowy.pl/firma-handlowo-uslugowa-mysterelektro-tomasz-szwelnik,f267.html

Safety Work Practices at Any Industry

1. Always check the tools/instrument and equipment before using.
2. Use the appropriate materials, tools, instrument, and equipment according to the job or task requirement.
3. Always wear personal protective equipment such as gloves, goggles, hard hat, etc.
4. Wait for the final instruction before doing the job or task.
5. Report to the person in authority whenever any untoward incident happens.



What's More

Name: _____ Grade and Section: _____ Quarter: ___
Module Number: _____ Lesson Title: _____

Activity number 1. Briefly explain these Safety Tips. Write your answer on a separate sheet of paper. Then check your answers by comparing them to the answer key at the last page of this module.

1. Lighten your load

_____
_____
_____

2. Protect yourself

_____
_____
_____

3. Select the right tools.

_____
_____
_____

4. Practice housekeeping.

_____
_____
_____

5. Change body position

_____
_____
_____

Activity number 2. Cite an example of a situation showing unsafe work practices. Cut a picture/pictures that show unsafe work practices and paste onto a long size bond paper, then explain the situation in paragraph form. Pass your work a week after you receive the module.

What I Have Learned

Name: _____ Grade and Section: _____ Quarter: ___
Module Number: _____ Lesson Title: _____

Answer the following questions using a separate sheet of paper.

1. Why is safety procedure so important at the workplace?

_____
_____

2. Enumerate the procedure of safe work practices at home.

_____
_____
_____

3. What are safety tips in the workplace or industry.?

_____
_____
_____

Assessment

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Test I. Multiple Choice. Choose the letter of your answer and write it on a separate sheet of paper.

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   B. Electrical shock
   C. Safety
   D. Electrical safety
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   A. Occupational health
   C. Occupational hazard

B. Occupational safety D. Occupational accident

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   B. Observed occupational health and safety standard
   C. Used the right tools
   D. Work faster in order to finish early.

Answer Key

What's More

LIGHTEN YOUR LOAD. Carry only the tools or equipment you will need. Wear a tool belt that fits well and distribute the tools and materials evenly.

References

Department of Education Learner's Material, first edition 2014

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http://katalog-firmowy.pl/firma-handlowo-uslugowa-mysterelektro-tomasz-szwelnik,f267.html, retrieved on October 19, 2020

https://toolsheaven.com/electrician-tool-belt-setup/, retrieved on October 19, 2020

https://www.csslng.com/safety/, retrieved on October 19, 2020

https://www.ecmag.com/section/your-business/cool-tools-hand-tools, retrieved on October 19, 2020