

Low Voltage Electrical Installation

MODULE 1 Chapter 1: Supply System

by

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Module Description

- **Expected Outcomes**
 - Apply ethical principles and commit to professional ethics.
- **Module Outline**
 - 1.1 Electrical Safety
 - Safety in Wiring Lab
 - Safety in Electrical Installation
 - Safety Precaution
 - Electrical Shock
 - Malaysia Quality Environment System (QES)

1.1 Electrical Safety

- Safety in Wiring Lab
 - Obey all signboards and work instructions given by instructors in the lab.
 - Always wear a pair of safety shoes when entering the lab. (slippers or sandals are not allowed!!)
 - Do not wear any accessories that are made by metal. E.g.: ring, watch, etc.
 - Wear hand gloves, tight sleeves and trouser legs.
 - Wear suitable costume and Personal Protective Equipment (PPE) during wiring/installation job.

1.1 Electrical Safety

- Safety in Wiring Lab
 - ❑ Use a test pen for electrical current absence testing under 500V life line.



Screw driver is not a tester!!

- ❑ Do not touch any bare live parts or conductor lines when the current is supplied!!



1.1 Electrical Safety

- Safety in Wiring Lab
 - ❑ Please ensure that all fire extinguishers are appropriately placed.
 - ❑ Inform the instructors if it is not available in the lab or not properly facilitated.
 - ❑ When the fire occurs, follow all procedures based on manual.



1.1 Electrical Safety

- Safety in Wiring Lab
 - ❑ Inform the instructors directly as soon as possible when accident or any uncertainty condition happens.
 - ❑ Use medicines/plaster from the first aid kit if necessary.



1.1 Electrical Safety

- Safety in Electrical Installation

- Isolation

- ❖ All circuit installation must have a method to isolate the main supply from the load.

- Fuse

- ❖ An appropriate fuse rate is required to protect load and user from over leakage current.

- Earthing/grounding

- ❖ All metal/galvanized iron (G. I.) and transformer parts must be properly grounded
- ❖ All earthing ducts must be strong enough.

1.1 Electrical Safety

- Safety Precaution



Source: [4]

**NEVER WORK ON
EQUIPMENT WITH
THE MAIN POWER
TURNED ON!**

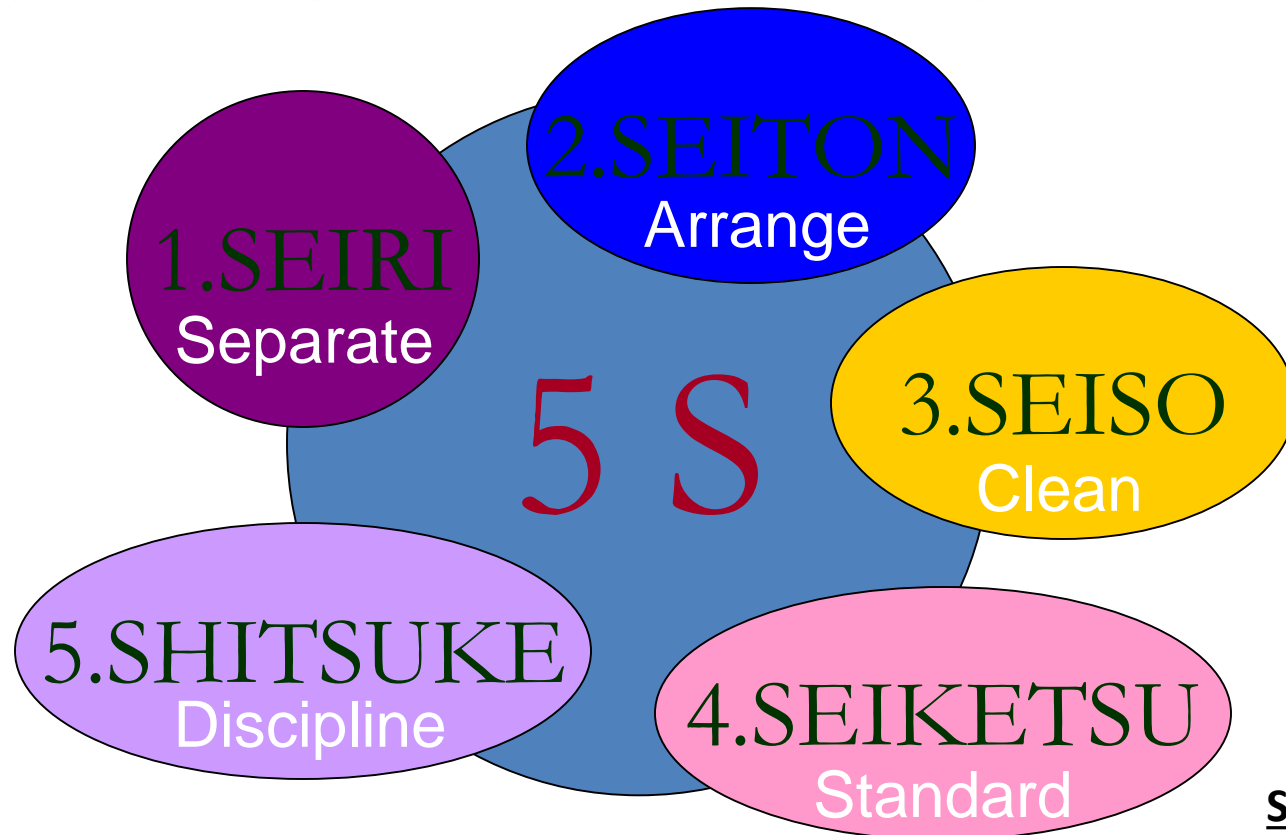
1.1 Electrical Safety

- **Electrical Shock**

- ❑ Electricity travels in closed circuits, normally through phase conductors.
- ❑ Electrical shock occurs when the body becomes part of complete electrical circuit.
- ❑ Current flows in the body at one point and leaves at another.
- ❑ 3 ways the body creates complete path of current;
 - ❖ Touch potential
 - ❖ Step potential
 - ❖ Touch and step potential

1.1 Electrical Safety

- Malaysia Quality Environment System (QES)



Source: [5]

References

- [1] Pxhere, <https://pxhere.com/en/photo/1343525>, 2017.
- [2] Pixabay, <https://pixabay.com/en/screwdriver-tool-craft-screwdrivers-708130/>, 2015.
- [3] Flickr, <https://www.flickr.com/photos/jeepersmedia/14307055885>, 2014.
- [4] Openclipart, <https://openclipart.org/detail/92233/warning>, 2010.
- [5] Jabatan Perkhidmatan Awam Malaysia, *Quality Environment System Guidelines (QES/5S)*, 2011.

Thank you

