Electricity and Circuits Learning Outcome and Objectives Review

# Use (apply) electrical related equipment safely

* Voltmeter
* Ammeter
* Ohmmeter
* Hydrometer
* megohmmeter
* Battery capacity tester (load tester)
* Multimeter
  + Voltage
  + Resistance
  + Current
  + Continuity
* **IV curve tracer?**
* Insulated tools
* Face guards
* Chemical goggles
* Eye wash
* Gloves
* Aprons

# Recognize/identify (understand) potential associated risks/hazards with electricity and methods to mitigate/reduce injury

* Electrical shock/hazard
* Arc flash
* De-energization plan
* Lockout/tagout
* Ground fault
* Fire
* Static electricity shock
* Batteries
* Energized equipment
* Faulty equipment

# Recognize (understand) electrical concepts and terminology

* Electric charge
* Efficiency
* System power
* System losses
* Ohm’s law
* Power and energy
* Electrical measurements
  + Voltage
  + Current
  + Impedance
  + Resistance
  + Conductance
  + Resistivity
* Direct current (DC)
* Series and parallel circuits
* Circuit diagrams
* Properties of common conductors
  + Insulation types
    - PV wire
    - USE-2
    - THWN-2
  + Size
  + Ampacity rating
  + Voltage ratings
  + Color
  + Temperature ratings
  + UV resistance
  + Moisture rating
* Types of common multi-conductor cables
  + Romex
  + MC  
    TC
* Grounding and bonding terminology
  + equipment grounding conductor
  + grounding electrode conductor
  + grounding electrode
  + bonding jumper
* Voltage ratings
* Current ratings
* Overcurrent protection devices
* Batteries

# Solve theoretical electrical problems using mathematical formulae and sound logic.

* Electrical loads
* System performance
* Series and parallel circuits
* Overcurrent protection
* Circuit diagrams
* Reading equipment data sheet
* Circuit analysis