

 SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING	<b>Standard Operating Procedure (SOP)</b>
<b>SOP Title:</b> Hand Tools	
<b>SOP Number:</b> SEEE_002	
<b>Prepared by:</b> Desmond Kernan in collaboration with Ronan Murphy, Andrew Dillion, Eamonn Murphy	<b>Job Title:</b> Senior Technical Officers
<b>Reviewed by:</b>	<b>Job Title:</b>
<b>Approved by:</b>	<b>Job Title:</b> Head of School
<b>Date effective:</b>	

Version	Date	Author
1.0	15 May 2018	Desmond Kernan
1.1	3 September 2018	Mark Davis

### 1.0 PURPOSE

The use of hand tools is required to maintain, repair and construct equipment or projects for use in the School of Electrical and Electronic Engineering, Dublin Institute of Technology (DIT)

### 2.0 SCOPE

This document covers the use of hand tools, excluding battery and electrically powered tools. A separate SOP covers battery and electrically powered tools.

- Students use hand tools to construct projects in Electrical and Electronic laboratories and workshops.
- Apprentice Electricians use hand tools to assemble and wire electrical control panels.
- DIT staff (technical, academic & research) use hand tools to maintain, repair and construct equipment or projects.
- Visitors to the School of Electrical and Electronic Engineering may need to use hand tools in laboratories or workshops.
- This SOP does not include hand tools used by External Contractors working in the School

### 3.0 DEFINITIONS

For the purposes of this SOP, hand tools are manual use only, and do not cover battery or electrical powered tools. They can range from screwdrivers, snips, pliers up to knives, blades, spanners, saws etc.

**4.0 RESPONSIBILITIES**

Hand tools purchased and controlled by DIT are located in Electrical and Electronic laboratories and workshops.

- The technical staff member in charge of a laboratory or workshop is responsible for ensuring that DIT purchased hand tools are inspected once a year and a log maintained of damaged and replaced tools.
- DIT students are responsible for hand tools purchased and controlled by themselves.
- DIT Staff are responsible for their own tools.
- External Contractors are responsible for their own tools.
- The Lab instructor should ensure that students are properly trained in the safe use of hand tools.

DIT staff members are not required to inspect student's hand tools but if they observe poorly maintained or faulty tools, they should instruct the student to correct the situation.

**5.0 HEALTH & SAFETY PRECAUTIONS**

1. A poorly maintained workspace can result in an accident and injury.
2. Tools can slip, fall from heights or be thrown by careless people, causing severe injuries.
3. Poorly maintained hand tools can cause injury, and should be inspected regularly for damage prior to use.
4. Poorly constructed work because of poorly maintained hand tools can result in injury.
5. Personal Protective Equipment (PPE) that conform to safety standards must be used when required:
  - Safety glasses, goggles, or a face shield
  - Steel-toed shoes
  - Gloves
  - Helmets
  - Aprons
  - Earmuffs
  - etc.
6. A First Aid box should be present and easily accessible in the workspace

**6.0 MATERIALS**

N/A

**7.0 PROCEDURE****Work Environment**

1. Ensure that the floor of a work place is clean to avoid tripping or other possible instances that could lead to a worker losing his or her balance.
2. Keep the workspace clean and tidy to avoid clutter, which may cause accidents.
3. Use clamps to secure a work piece, which is liable to move, into a stable position.
4. Do not carry a sharp or pointed tool in your pocket. Carry tools securely and safely.
5. Keep close track of tools when working at heights. A falling tool can cause serious injury.
6. Pass a tool to another person by the handle; never throw it to them.
7. Store tools properly when not in use.

**All Tools**

1. Use the correct hand tool for the job. Do not use tools for jobs they are not intended for. Do not use your wrench as a hammer. Do not use a screwdriver as a chisel, etc.
2. Keep tools in good condition at all times. Do not use broken or damaged tools, dull cutting tools or screwdrivers with worn tips.
3. Inspect tools for defects before use. Replace or repair defective tools.
4. Do not wear bulky gloves to operate hand tools.
5. Do not apply excessive force or pressure on tools.
6. Replace cracked, splintered, or broken handles on files, hammers, screwdrivers, or sledges.
7. Ensure that the handles of tools like hammers and axes fit tightly into the head of the tool.
8. Flat head screwdrivers should have square edges on their blade tips and undamaged handles. Phillips and similar screwdrivers should have clearly defined tips without chips missing and undamaged handles.
9. Spanners should be in good condition with undamaged jaws to reduce the risk of slipping.
10. Torque spanners should be checked for accuracy once a year and adjusted or replaced as required.

**Cutting Tools**

1. Keep cutting tools sharp and cover sharp edges with a suitable covering to protect the tool and to prevent injuries from unintended contact.
2. Snips and wire stripping tools should be tested for performance.
3. The general condition and sharpness of tools should be visually and physically tested on sample material.
4. Do not cut towards yourself when using cutting tools. Cut in a direction away from your body.

**Personal Protective Equipment (PPE)**

Use the right personal protective equipment (PPE) for the job.

DIT staff using the above guidelines may review hand tools not controlled by DIT and their owner notified verbally of any concerns.

## **8.0 REPORTING**

- Any hand tools controlled by DIT found defective should be removed from service and a label attached stating its defect.
- The condition / defect of the defective tool should be entered into the Tool Log record.
- The tools should be repaired in compliance with the manufacturer's recommendations or scraped and a replacement tool if required be purchased.
- If the tool is repaired a retest / inspection must be carried out
- The result of the retest should be recorded on the Tool Log.

## **9.0 DOCUMENTATION**

The Technical staff member in charge of the laboratory /workshop should maintain a Tool Log to record defective tools, their repair or disposal and their replacement.

## **10.0 REFERENCES**

- DIT Policy
- **SOP - Soldering**
- **SOP - Powered Tools (Battery and Electrical)**
- **SOP – Working at Height**
- Health & Safety Authority of Ireland <http://www.hsa.ie/eng/>

List other SOPs, regulations or references relating to this SOP.

## **11.0 REVIEW**

Following the first year of application, the Senior Technical Officers of the School of Electrical and Electronic Engineering will review the Hand Tool SOP.

Thereafter the Senior Technical Officers of the School of Electrical and Electronic will review the Hand Tool SOP every two years.