

# **Introduction to the Electronics Laboratory**

## **Electronic Components, Cables and Tools**

1. Use the containers to hold your unused components, but do not hoard too many items.
2. Learn to distinguish the different functional components and read the specification labels.
3. Take care of the components. Keep the leads as straight as possible, and do not scatter them hither and yon.
4. Keep a minimal set of cables and connecting clips at your station.
5. Return tools that you use to the tool area because everybody uses the same set of tools.

## **Electronic Instruments and Equipment**

1. Power supply
  - (a) Deliverable potential and current
  - (b) Proper ground connections
  - (c) Precautions
2. Digital multimeter
  - (a) Capabilities
  - (b) Connections and operation
  - (c) Measurement of potential difference
  - (d) Measurement of current: precautions, serial arrangement
  - (e) Measurement of resistance
  - (f) Limitations: CAREFUL OF AMMETER FUSE
3. Breadboard
  - (a) Connection topology
  - (b) Wire size and solid connections
  - (c) Proper wiring technique
  - (d) Limitations
4. Oscilloscope and function generator
  - (a) Function generator capabilities
  - (b) Function generator grounding, connection and adjustment
  - (c) Oscilloscope principles of operation
  - (d) Intensity and focus
  - (e) Triggering
  - (f) Time-base adjustment
  - (g) Vertical amplifier adjustment
  - (h) Bandwidth
  - (i) Precautions