UNC CHARLOTTE
Department of Engineering Technology

LABORATORY SAFETY ANALYSIS

OPERATING A DIGITAL MULTIMETER

Location: All Smith Electrical/Computer Engineering Technology Labs.

Required Training: A Multimeter is designed and intended for use by properly trained and experienced operators. If you are not familiar with the proper and safe operation of the equipment, do not use until proper training and knowledge have been obtained.

Required Personal Protective Equipment (PPE): Safety glasses and closed toed shoes.

Reference Materials: Manufacturer's safety rules and operating instructions

PHOTOS	TASK	HAZARDS	CONTROLS
 	Wear clear safety glasses with side shields.	Flying debris	• Students are required to provide their own safety glasses. • See laboratory instructor or laboratory manager if you do not have safety glasses before proceeding to use equipment.
	Inspect safety glasses for cracks, scratches or other damage. Ensure the ANSI standard Z87.1 is stamped into the side of glasses.	Flying debris	• If defects are found report this to your lab instructor before using.
	Put on PPE	Flying debris	• Always wear safety glasses.
	Inspect work area.	Slips, trips & falls.	• Keep the work area free from scraps, dust, oil and grease.
	Preparing to operate multimeter	Shock Hazard/ Damage to the Multimeter.	• Always inspect your MULTIMETER, test leads and accessories for any signs of damage or abnormalities before every use. • If any abnormal conditions exist, do not attempt to take any measurements.
	Operating multimeter	Injury/ Damage to the Multimeter	• Always start with the multimeter set to the highest range of the function to be measured. • Never take a measurement if the value of that function may be Greater

			than the highest range in that function on the MULTIMETER • Never ground yourself when taking electrical measurements. Keep your body isolated from ground by using dry clothing, rubber shoes, rubber mats or any suitable and approved insulating material. • Never touch exposed wiring connections or live circuit conductors when attempting to take measurements. • If the battery is weak, a symbol will appear on the display. The battery should be replaced immediately. • Warning: The symbols next to the test lead jacks indicate the maximum input voltage or current. Do not exceed these values. This is to prevent damage to internal circuitry. • The Function rotary switch and SELECT key should be set to the test range before operation. Properly select the Measurement and Voltage Range
	Maintenance	Shock Hazard/ Injury/ Damage to the Multimeter.	• Keep the multimeter dry and dust free. If it gets wet, wipe it dry immediately. Liquids can contain minerals that can corrode electronic circuits. • Use and store the multimeter only in normal temperature environments. Temperature extremes can shorten the life of electronic devices, damage batteries, and distort or melt plastic parts. • Handle the multimeter gently and carefully. Dropping it can damage the circuit boards and cause the multimeter to work improperly.
	Clean work area and return all PPE to a clean storage area.	Injury	• Ensure adequate housekeeping measures to prevent accidents.

For more information about this LSA, contact the *Department of Engineering Technology* at UNC Charlotte (704) 687-2305
Please visit our website at: http://www.et.uncc.edu\

The development of Laboratory Safety Analyses is a very effective means of helping reduce incidents, accidents, and injuries in the workplace. It is an excellent tool to use for training purposes and can also be used to investigate "near misses" and accidents.