

GENERAL SAFETY STANDARDS FOR THE LABORATORIES OF THE ELECTRICAL ENGINEERING PROGRAM

Please read carefully the following safety rules required in any laboratory of the Electrical Engineering program. These are based on good work practices for laboratories defined in OSHA standard 29 CFR 1910.333, NTC 2050 electrical risk standard, in the document *safety standards for safe work in electrical engineering laboratories* prepared by ARL Sura in September 2009 and in the experience of the professors of the electrical engineering program.

INSTRUCTIONS BEFORE THE PRACTICE BEGINS

1. Identify the emergency exit, evacuation route, meeting areas for the building and the location of the fire extinguisher for the laboratory where you will perform your practical class.
2. Identify the location of the general electrical protections of the laboratory where you will perform your practical class.
3. Keep the doors of the laboratories and circulation corridors clear, open and unobstructed during the practical class.
4. It is strictly forbidden to smoke or consume food and beverages inside the laboratory.
5. It is strictly forbidden to enter the laboratories with any type of animal or pet.
6. It is strictly forbidden to enter the laboratories while intoxicated or under the influence of hallucinogenic substances.
7. It is indispensable that the professor stays in the laboratory for the realization of any practice. Never leave one person alone in the laboratories. The minimum is two people, which must include the professor or class assistant.

INSTRUCTIONS FOR THE DEVELOPMENT OF THE PRACTICE

1. Safety starts before entering the laboratory. Always prepare the respective pre-work or pre-report in order to have complete clarity about the objectives and development of the practical class. The designs of the electrical assemblies (in case the practice requires it) must be completely defined, available and clear as a prerequisite for the development of their laboratory practice.
2. Always list in the pre-work or pre-report the safety elements (breakers) necessary to develop your practice. Also indicate the technical specifications of these elements (current ratings, voltage level and nature, etc.).
3. All assemblies must include protection (switch or breaker) for each of the required power supplies. For all purposes, the protection outputs are considered the only power supplies available for your assembly.
4. The protections must be open during the assembly process and can only be closed (energized) when the professor or assistant checks the assembly. Always verify the absence of voltage at the output of the protection before starting the assembly.

5. Changing instruments or elements is part of the assembly process, therefore, always verify that the protections are open (de-energized) before making any changes. Under any circumstance (NEVER) change an element if the protections (breakers) are energized. Always verify the absence of voltage.
6. During the development of the practice, the student must be conscious and concentrated on what he/she is doing, without performing tasks unrelated to the laboratory that may distract him/her.
7. Do not use elements (loose clothing, wide and/or long sleeves, scarves, bracelets, chains, rings, earrings, and any metallic element) that may make involuntary contact with energized elements or rotating parts and that represent a risk to your integrity.
8. Use closed shoes with rubber soles.
9. Professors and students should keep their hair tied back.
10. Keep hands with low humidity.
11. Avoid touching any energized element because the hand muscles are retractable and you could be left holding it.
12. Never make contact with the terminals of a capacitor even if it is de-energized, it could be charged.
13. Always follow good practices of order and cleanliness in the workplace.
14. Bags may not remain in the passage areas, place them in a place that does not interfere with practice and free circulation.
15. Objects foreign to the practice may not remain on the work tables.
16. Never play games or pranks involving the electrical system and in general inside the laboratory.
17. Students who are not enrolled in the course will not be admitted.
18. Do not leave energized equipment unattended.
19. Do not use laboratory equipment, machines, and computers for purposes other than those intended in practice.
20. Always maintain respect. Based on mutual tolerance, courtesy, and a cooperative spirit.

WHAT TO DO IN CASE OF AN ACCIDENT OR ELECTRIC SHOCK?

In case of an event of this nature, strictly follow this sequence, trying to remain calm:

1. Immediately de-energize all protection circuits: assembly circuit breakers located on the workbench and the breakers of each laboratory's panels. Notify the professor or monitor of the event.
2. Immediately inform the university medical service for initial medical attention:
Health Area - University Welfare (606 - 3137275), Nursing (Ext. 7443), Emergency Line (Ext. 7411), notifying a security guard or through the different entrance gates to the university.
3. Give first aid if you are trained and certified to do so. Do not give first aid if you are not trained.

Do you have questions, concerns, comments or suggestions? Write to us at



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GUIDELINES FOR THE PROPER USE OF LABORATORIES

1. Dear professor, monitor, and student, when entering the laboratory, verify that there are a total of:
 - 8 Oscilloscopes
 - 8 Signal generators
 - 8 DC sources
2. Do not move the equipment from the tables, if it is necessary to move it, put it back in its respective place.
3. Each signal generator has its own probes, please do not interchange them between equipment, they are properly calibrated for operation.
4. The implements requested in the storage room by the students must be delivered 15 minutes before the end of their respective class time.
5. Always remember to close the windows before leaving the laboratory.
6. Report any damage or anomaly of the equipment and installations immediately to the storekeeper or to the e-mail labelectrica@utp.edu.co.
7. For machine lab 1B - 002, the LabVolt modules should be left in their respective cabinets and not on the workbenches.
8. Follow to the letter and keep in mind at all times the information contained in the document: "GENERAL SAFETY STANDARDS FOR LABORATORIES IN THE ELECTRICAL ENGINEERING PROGRAM."

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