



**KARABUK UNIVERSITY OCCUPATIONAL HEALTH
AND SAFETY COORDINATORS**

Document No: İSG.FRM.12

Revision No: 02

**INSTRUCTIONS FOR THE USE AND SAFE
OPERATION OF THE PHYSICS AND FUNDAMENTAL
ELECTRONIC LABORATORY**

Revision Date: 07.10.2024

**Publication Date: October
2024**

Performing experiments in the laboratory always brings the possibility of accidents. That's why everyone must pay the closest attention to safety rules. You should strictly follow the warnings of the teaching assistant, research assistant, and technicians. Remember, no safety rule alone can prevent an accident caused by your or a nearby friend's carelessness.

In addition to learning the basic laboratory safety rules, you must also know how to work safely with electronic devices and components.

When you first enter the laboratory, the authorities will inform you about the lab safety and emergency plans, as required by the rules.

In practical work, there is always a potential source of danger in laboratories. Protection and safety rules are created to reduce this danger. All lab workers should remember that any mistake can harm others as well as themselves. Lab supervisors can't prevent all accidents on their own. So, from the moment you enter the lab, remember that you're responsible for following the rules below in everything you do!

RULES REGARDING THE ALLOCATION OF THE LABORATORY

1. Faculty members and students who have not received Occupational Health and Safety Training are prohibited from entering and using the laboratory. Those who enter/use the laboratory without receiving this training are responsible for all possible negative consequences.
2. The electronics laboratory is designed to conduct practical applications of basic electrical/electronics courses for our faculty's departments. Instructors who need to use the laboratory must inform the laboratory supervisor before the relevant semester begins and complete their applications within the designated schedule.
3. If the laboratory is to be used for a course throughout the semester, the technical preparations for the course (such as preparing experiment manuals, listing required materials, and performing necessary technical checks before the class) must be reviewed by the instructor responsible for the course. Additionally, the circuits to be implemented must be designed in a way that does not damage laboratory equipment like power supplies, signal generators, oscilloscopes, and multimeters.
4. The electronics laboratory should not be used for special purposes such as independent study and graduation thesis projects. For such work, you should apply to the other relevant laboratories.
5. People who do not perform the experiments are prohibited from being in the laboratory during or after the experiments. Guests are not allowed.
6. The use of the electronics laboratory is only allowed under the supervision of the course instructor/assistant. In addition, in the case of simultaneous practice, one instructor/assistant must be assigned for up to 50 students, and two instructors/assistants must be assigned for more than 50 students.

RULES REGARDING THE USE OF THE LABORATORY

7. The power supply, input impedance, and similar requirements/features of the circuits to be tested must be compatible with the equipment in the laboratory. Therefore, the technical specifications of the devices/equipment to be used must be carefully reviewed by the course instructor. The relevant instructor/assistant will be held responsible for any damage to the devices that may occur due to



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such incompatibility. The student will be responsible for any malfunctions that may occur due to improper use.

8. It is not permitted to remove devices, equipment, or materials from the laboratory in any way. Please take care not to leave your personal belongings in the laboratory, and do not transfer laboratory materials (even if borrowed) to another laboratory or location.
9. Since the laboratory materials are grouped and numbered, please do not change the place of the materials.
10. Please do not forget to put the cables, multimeters, and other materials you have used in their places after use, and leave the tables clean and tidy after your work. Also, make sure that all devices (power supplies, oscilloscopes, signal generators, multimeters, etc.) are turned off after use.
11. When using the cables/probes of oscilloscopes, signal generators, power supplies, and multimeters during experiments and when returning them afterwards, do not apply mechanical stresses (such as pulling, breaking, or bending). Especially, do not leave the probes coiled. Be careful not to pull, break, or bend the connectors at the beginnings and ends of the probes and the parts that make connections.
12. Do not enter the laboratories with food or drinks.
13. During your work, please behave with the awareness that you are in an educational environment and that all the materials you are using have been provided through our country's national resources.
14. After using the laboratory, the course instructor/assistant must write and sign a brief report in the laboratory log sheet regarding the condition of the laboratory at the beginning and end of the class, any equipment that malfunctioned during the experiment or was found to be defective, and confirmation that the laboratory has been restored to its standard order.
15. If the number of students in the laboratory is 36 or fewer, only the 18 experiment sets located on one side of the laboratory should be used. The devices on the other side must not be used under any circumstances.

SAFETY WARNINGS: Please read each of the following items carefully and take the necessary steps to understand them.

16. Ensure your hands, electrical switches, and sockets are dry when working with electricity. Except when necessary, ensure that the power switches of electrical devices are turned off before starting work.
17. Do not work with devices that are not grounded.
18. Do not unplug electrical plugs by pulling on the cord. Do not work with electrical devices in damp areas. Do not work on wet or moist surfaces.
19. Never keep liquid bottles in areas where electrical systems are present. If a circuit component burns, do not inhale the resulting smoke. Remember that circuit components may contain toxic materials. When soldering, do not inhale the fumes and use a protective mask.
20. If a piece of equipment malfunctions during operation, immediately inform the laboratory supervisor or instructor. Never attempt to fix the problem yourself to avoid harming yourself.
21. Do not open electrical panels without permission.
22. Contact the electrician or the building manager for wiring or other electrical modifications.



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23. Do not use extension cords. If you must use them, plug extension cords into grounded and fused sockets. Do not run extension cords under doors or windows, hang them from the ceiling, or connect them to other extension cords.
24. Do not make any modifications to high-voltage equipment.
25. When adjusting a high-voltage device, use only one hand. Keep your other hand in your pocket or behind your back. This procedure prevents high voltage from flowing from one arm through your body to the other arm.
26. Make sure to learn what short circuit, open circuit, parallel connection, and series connection mean, and how to implement them on a physical circuit.
27. Learn the nominal operating conditions, current, and voltage values of the circuit components you are using. Keep in mind that exceeding these nominal conditions may result in incidents like explosions or fires. To protect yourself, always wear safety glasses and other protective equipment. Use this equipment throughout the experiment.
28. Always read the user manuals of the devices you are using, and seek help from the laboratory supervisor when using a device for the first time. Do not attempt to make measurements or perform operations beyond the usage limits of the devices. Ensure that the input impedance of the circuit you are connecting the signal generator to is greater than 50 Ω . If you are unsure about this, do not connect the signal generator to the circuit.
29. The student is responsible for all devices and items they use in the laboratory. The student is obligated to compensate for any damage caused by improper use. Before leaving the laboratory, the student must turn off the devices they used and restore the workspace to its standard order. No leftover components or conductors should be left on the table. Eraser shavings should be collected and disposed of in the trash.
30. Do not place heavy items like books or notebooks on top of the devices, and do not move them from their designated spots. Do not sit on the tables. Avoid any actions that could damage the surface of the tables.
31. Devices must be turned off while setting up experiment circuits and should not be turned on until the laboratory supervisor has checked your circuit.
32. During all operations, connections, tests, and measurements related to the circuit, the circuit diagram must always be clear and visible in the workspace!
33. When using polarized components such as capacitors, ensure they are connected with the correct polarity. Always check both the schematic and the orientation of the physical component.
34. Before powering on the circuit, remove any cable pieces or debris from the test bench, and ensure that no items are left on the table other than the devices needed for the test.
35. Always check the connections before turning on the devices.
36. When the experiment is completed, first turn off the power, then dismantle the setup.
37. If you need to make any changes to the experiment setup, always turn off the power first.
38. There is a possibility that circuit components may be faulty, the wrong component may be used, or incorrect connections may be made during the initial test conditions. Considering these risks, it is essential to wear insulated gloves and protective glasses during testing.
39. Do not work on live circuits, and avoid working alone whenever possible.



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40. If you notice something going wrong during the experiment, immediately turn off the power and inform the experiment supervisor.
41. Do not perform any experiments or procedures that have not been approved.
42. In case of accidents or injuries, do not panic and immediately inform the laboratory supervisor without delay.
43. Currents greater than 13 mA or voltages greater than 40 V pose a danger to human health and can be fatal. Therefore, take the necessary precautions to avoid electric shocks and follow the instructions given by the personnel in charge.
44. Do not create unsafe working conditions by relying on protection devices such as fuses, Residual Current Circuit Breakers, etc.
45. Do not touch the open conductors in the energized circuit in any way before the power is cut off.
46. Make sure that the equipment used (pliers, screwdrivers, inspection pens, etc.) is reliable (sturdy and well-insulated) and that the measuring instruments are robust.
47. Focus on the task at hand while working and avoid engaging in other activities, including using your mobile phone.
48. Do not work with damaged devices under any circumstances. Immediately report damaged devices to the laboratory supervisors. Working with damaged equipment can lead to severe injuries and physical harm.
49. Do not use any devices other than those provided for your use in the laboratory. Do not interfere with the electrical system or outlets without the permission of the laboratory supervisor. Improper actions can result in serious injuries and physical damage.
50. Do not run or make sudden movements in the laboratory. Avoid any behavior that could lead to serious injuries or physical damage.
51. Cell phones and other electronic devices must be switched off. Do not charge your cell phone under any circumstances. Do not operate any other non-laboratory devices in the laboratory.
52. Do not speak loudly or in a way that distracts other students in the laboratory. Talking with other groups, changing seats without permission, and leaving the classroom without authorization are prohibited.
53. Remove any metal jewellery while working in the laboratory.
54. Do not place any items containing liquids on the tables.
55. Always remember the location of the fire extinguisher and the main switch. Learn how to use the fire extinguisher.
56. Before coming to the laboratory, consult your doctor about any medications that may have adverse effects. For medications that cause side effects such as distraction or mental confusion, consult your doctor and follow their warnings carefully.
57. Do not leave the experiment without consulting the laboratory supervisor.
58. When the experiments in the laboratory are finished, unplug all used electrical equipment. After completing these tasks, inform the lab assistant, and after conducting a final check together, leave the laboratory only with his/her permission.



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59. I know that I must have completed the **Occupational Health and Safety Training** to use this laboratory. I know that I have received this training through one of the methods specified below and that I should not participate in experiments in the laboratory without receiving it. I hereby declare that I accept all responsibility in advance for possible negative consequences if I violate this.

- Face-to-face training provided by the university at the beginning of the semester
- Training organized by the university on a distance education platform
- Basic Occupational Health and Safety training made accessible on the “Distance Education Gateway” Platform by the Presidency of the Human Resources Office of the Presidency of the Republic of Türkiye

60. I understand the 59 rules written above in this document. I agree to this being recorded in the minutes with the confirmation statement "**I have read, understood and accepted**" below.

Date:

	Confirmation Statement	Name Surname	Signature
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