

ESTONIAN MARITIME ACADEMY'S ELECTRONICS AND ELECTRICAL ENGINEERING LAB (MA1-047) RULES FOR INTERNAL ORDER AND OCCUPATIONAL SAFETY

- [Estonian Maritime Academy](#)

Document identifier: V5-1/6

Version No: 2

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Approved by: order No 1-24/258 of 30 September 2020 of the Director of the Estonian Maritime Academy

Amended by: order No 1-24/3 of 4 January 2024 of the Director of the Estonian Maritime Academy

- [V5-1/ 6 Full text](#)
- [Form V5-1/0 Internal Work Procedure and Occupational Safety Rules Review Sheet](#)

1. General safety requirements

1.1. All individuals must undergo occupational safety instruction before commencing work in the Electronics and Electrical Engineering Lab. A person who has completed occupational safety instruction confirms, by signature, that he/she has read the regulations and the requirements set out in it and undertakes to comply with them. ([Form V5-1/0](#)).

1.2. Occupational safety instruction shall be conducted in accordance with the Internal Work Procedure and Occupational Safety Rules of the Electronics and Electrical Engineering Lab, the requirements of which must be adhered to by all the persons in the laboratory.

1.3. During the occupational safety instruction, the persons commencing work in the lab will be informed about the Internal Work Procedure and Occupational Safety Rules, the risk factors in the work environment and the use of personal protective equipment, ergonomically correct working positions and techniques,

laboratory work procedures, fire and electrical safety requirements, the locations of first aid equipment and fire extinguishing equipment, the safety signs used at the workplace and the locations of the emergency exits and routes.

1.4. Occupational safety instruction is conducted by a supervisor/lecturer.

1.5. The lecturer of Electromechanics and Power Engineering is responsible for the maintenance of the equipment of the Electronics and Electrical Engineering Lab.

1.6. An access card is required to enter the lab; students are allowed to enter only with the permission of the supervisor/lecturer.

1.7. Users of the lab are required to promptly inform the supervisor/lecturer and other lab users of any detected deficiencies or equipment malfunctions. Working with malfunctioning equipment is prohibited; in the event of a hazardous situation, work must be halted immediately.

1.8. Users of the lab are not permitted to operate independently any equipment without prior safety instruction and approval to commence work granted by the supervisor/lecturer. If you have any doubts or questions, please contact the supervisor/ lecturer.

1.9. If you notice another lab user engaging in improper or prohibited behaviour, you should inform him/her and, if necessary, also notify the supervisor/lecturer thereof.

1.10. It must be safe to work in the lab; it is recommended that you move around in the lab only when necessary and without haste, so as not to disturb others. Move with caution to avoid slipping or falling, as well as to prevent injuries and damage to lab equipment. Engaging in activities that interfere with studies in the lab is prohibited.

1.11. The working environment must be organised to ensure safe and ergonomic working conditions. Remove unnecessary and disturbing objects from the work area.

1.12. In the event of failure to comply with the requirements set out in the Internal Work Procedure and Occupational Safety Rules, the laboratory user shall be immediately removed from the work being performed. In the event of repeated non-compliance, the lab user shall be removed from all works.

1.13. Any material damage to the university resulting from the

intentional violation or negligence in the fulfilment of the requirements set out in the Internal Work Procedure and Occupational Safety Rules shall be compensated in full by the person who caused the damage.

1.14. The supervisor of the work/lecturer shall be informed immediately of any accident/injury or fire occurring during laboratory work. Appropriate measures must be taken depending on the accident.

1.15. In case of an accident involving a victim, the victim shall be removed from the danger zone, and if necessary, first aid providers or an ambulance (phone number 112) must be called, and it must be ensured that first aid is provided to the victim.

1.16. In the event of a serious accident, the inviolability of the workplace and equipment shall be ensured until the arrival of the chief working environment specialist, the representative of the Labour Inspectorate or the police, and until obtaining permission from them to resume work.

1.17. If it is not possible to ensure inviolability of the workplace and equipment, their condition at the time of the accident must be recorded.

1.18. In case of a serious and imminent risk of an accident, actions shall be taken by applying one's knowledge and available technical means to prevent potential consequences, even if it is not possible to immediately contact the supervisor/lecturer.

1.19. In case of a serious or unavoidable risk of an accident, the persons working in the laboratory must leave the workplace quickly and safely; a person who leaves without permission must not be punished or placed at any disadvantage.

1.20. In case of fire, safety of people and their quick evacuation or rescue from the danger zone must be ensured.

1.20.1. A person who discovers fire is obliged to immediately call the emergency number 112 and provide the following information to the rescue centre:

1.20.1.1. the exact address where the fire is located, details on what is burning, and the person reporting the fire;

1.20.1.2. answers to the questions asked by the rescue official;

1.20.1.3. the person must not end the call until permission to do so is granted.

1.21. As far as possible, begin extinguishing the fire using basic fire extinguishing equipment and close the doors and windows to prevent the spread of fire.

1.22. When the rescue team arrives at the scene, the person who discovered the fire or the representative of the possessor of the site shall inform the head of the rescue team of the following:

1.22.1. the source and extent of the fire;

1.22.2. the potential hazard to people;

1.22.3. other potential hazards arising from the fire (explosions, hazardous chemicals, electrical equipment, etc.).

2 Safety requirements while working in the laboratory

2.1. Prior to commencing any laboratory work, the lab user must read the instructions for the task to be performed and familiarize oneself with the power supply system and power sources in the laboratory. Only students who can successfully answer the control questions related to the task are allowed to participate in the laboratory work.

2.2. The electrical circuits used for the task must be built in accordance with the requirements laid down in the work instructions or the instructions provided by the supervisor/lecturer.

2.3. The lab's power supply shall be switched on by the supervisor of the work/lecturer. Lab equipment can be energised only after it has been inspected by the work supervisor/lecturer and the members of the working group have been warned. First, turn on the workbench power supply, and then the secondary sources used in the laboratory work.

2.4. When creating a circuit diagram, first connect the components of the power circuit. Make sure a complete circuit has been established. Connect the voltmeters last, because they do not affect the current in the circuit.

2.5. Make sure that the insulation of the wires is intact, and the wires have been terminated with connectors. The circuits must be built in a way that safety and overview of the work is ensured (use wires of appropriate colour and position the devices logically). An

electric circuit must be designed in a way that allows easy access to the distribution switchboard. Measuring instruments and devices must be positioned properly so that their scales are clearly visible. Long, loosely hanging wires, which can cause entanglement, contact with live parts, or the risk of pulling equipment off tables or other surfaces, are prohibited.

2.6. When operating electrical machines, make sure to prevent clothing, hair and loosely hanging connection wires from getting entangled in the rotating machine parts. Always warn the members of the work group before starting a machine.

2.7. After completing the work or any testing procedure, you must first turn off the power supply before disconnecting the circuit. First turn off the secondary power sources and then the workbench power supply. It is prohibited to disassemble equipment while it is energised. Connections shall be made or altered only when the circuit is de-energised. When testing a new circuit diagram, make sure you get permission from your supervisor/lecturer before energising the circuit.

2.8. Electrical engineering tasks must be performed with caution, avoiding contact with energised but non-insulated parts of the circuit. It is permitted to adjust the measuring range of a measuring instrument and reposition the probe tips of a voltmeter or an oscilloscope while the circuit is energised.

2.9. In the event of a device malfunction (overheating, smelling, sparking, smoking), the power supply must be promptly turned off. In case of an accident, activate the large red hazard switch located on each workbench.

2.10. It is prohibited to touch energised non-insulated parts, turn on switches on the main distribution board without special instructions from the supervisor/lecturer, lean on, sit on or hang clothes on electrical equipment, place carrying bags, briefcases, etc., on workspaces.

2.11 Laboratory equipment and instruments must only be used for study and research purposes.

2.12 Storing and using objects and substances (including foodstuffs and beverages) not related to the laboratory's activities is prohibited.

3 Safety requirements after completing work in the laboratory

3.1. Prior to concluding a test, the test results must be submitted to the supervisor/lecturer for verification, and a corresponding entry must be made in the lab records. Tests are deemed completed after the supervisor/lecturer has confirmed it by his/her signature.

Otherwise, the test may need to be repeated.

3.2. After obtaining permission from the supervisor/lecturer, the circuit should be disconnected from the mains and dismantled.

3.3. Devices, measuring instruments and connection wires must be returned to their designated places. The workplace must be cleaned and organised.

3.4. The supervisor shall be notified of any deficiencies that occurred during work.

3.5. It is prohibited to take any lab equipment used out of the lab premises.