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Work regulations and safety rules in SIE Research Baselab Bionics U02-211

These regulations and safety guidelines are meant to keep safety in Thomas Johann Seebeck Department of Electronics bionics laboratory (room U02-211).

1. Before starting working the student or staff member must be familiar with these safety guidelines as well as with any guidelines for the specific task. The student or staff member must give a signature to certify that he/she is familiar with them.
2. Before starting the work, the student or staff member must be familiar with the specific documentation relevant to the work (technical documentation of the equipment to be used, normative documents...). If any anomalies are noticed with the equipment or the lab-room, then other people in the room – and persons responsible for safety – must immediately be notified about any possible dangers. In case of study-related lab-work, the supervisor must be notified too.
3. Electric circuits used in the work must be composed following the guidelines in the manuals of the equipment. In high voltage circuits (where voltage could exceed 42 V), it is forbidden to use wires and connections with missing or inadequate isolation or poor or unstable contacts. The wires used in high-voltage circuits must be placed/installed in such a way that no one can trip over them and disconnect them accidentally.
4. The main switch of the electricity of the laboratory is situated in the main electric block. Switching of this main switch can only be done by the supervisor when necessary. The electric power in the work-places can be switched on or off by the switches near the set of main plugs or on the extension cords. These switches do not guarantee galvanic isolation. To create galvanic isolation – all connections to the mains must be disconnected. For example – the plug of the extension cord must be unplugged.
5. The equipment and circuits used in the lab-work can be switched on only under the supervision of the supervisor or with his/her permission – if the voltages in the circuits exceed 42 volts. With high-voltage circuits, the connections can be made and changed only in unplugged state (galvanically disconnected from the power). The equipment that operates over 42 volts cannot be removed, opened and their parts-blocks changed when powered.
6. A student cannot work alone with equipment operating at 42 volts or above (including all mains-connected equipment) except equipment meant for personal use – personal computers and medical equipment meant for a single user.
7. Working equipment containing more than 42 volts cannot be opened as well as equipment that uses high power where short-circuits and disruptions can cause local over-heating, electric arc, high voltage or other dangerous scenarios. It is forbidden to place wires and other objects on or next to equipment featuring ventilation holes or openings – when they could get inside the equipment and cause unwanted electric connections in or with the equipment. It is also forbidden to poke objects into equipment through openings not intended for the purpose.
8. Circuits must be composed in a way that provides a clear overview through usage of color-coded wires and placing the equipment in clear, logical and safe way. All people working with the task must know the circuit, used equipment and software on user level and must notify other members of the group of changes being made during the task. All the student team members must be notified when powering on the circuit – and the supervisor as well when needed.
9. When using over 500 volts equipment, the person must notify all people in the room before switching on the power and when working under supervision the power can be switched on only with supervisor permission.
10. When working with equipment that emit electromagnetic radiation (light, radio-waves, x-rays and others) – equipment suck as lasers, antennas, x-ray sources, cathode-ray-tubes – specific safety procedures must be carried out. These radiations sources can only be used in designated part of the room, where only those people who know the safety procedures for this equipment work. Moreover, special safety equipment must be used depending on the work (safety glasses, screens or other).
11. It is forbidden to create very powerful acoustic waves in the hearing frequency range (20-20000 Hz) and also infra- and ultrasound. When working with blood-samples, separated organs or tissue-samples, a knowledgeable medical worker must be present who is responsible for the safety procedures (protective gloves and attire, disinfection etc.).
12. When conducting laboratory work on biomedical engineering it is not allowed to use other persons working in the team as test-subjects without their written permission. In case of educational lab-work the workgroup members can volunteer to be test subjects if they are confident in the safety of the procedures.
13. The presence of other people and unsupervised people in the laboratory during the ongoing lab-work (as well as before or after the work until the room is declared safe by the working persons) is prohibited.
14. These regulations are mandatory for all people who conduct laboratory work in the bionics laboratory and other rooms in the Thomas Johann Seebeck Department of Electronics if the work conducted is directly related to the works in the bionics laboratory.

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