UNIVERSITÄT LEIPZIG
Faculty of Physics and Geosciences
Introductory Physics Laboratory

Safety in the Laboratory and General Information

The laboratory safety document outlines good practice to avoid health hazards; undergraduates are not allowed to begin their laboratory program until they have read and signed the safety document.

All students working in laboratories must observe the following.

In case of alarm signals in the Introductory Physics Laboratory all students and demonstrators have to leave the building immediately using the staircases and meet next to the 'Hospitaltor' in front of the park.

Fire Precautions

Smoking is not allowed anywhere in the building.

All organic solvents must be stored at a sufficient distance from heating equipment. Various fire extinguishers are placed in the corridors. In case of small fires use Water Discharge extinguishers for paper, wood, etc. (but no electrical equipment!), Carbon Dioxide extinguishers for live electrical circuits and Dry Powder extinguishers for any kind of metal. In any other cases of fire, ring the nearest fire alarm (in principle), and leave the building immediately using the Emergency Exits (Main Entrance/Exits). An Electronic Fire Alarms System exists in the building Prager Strasse 34; it sends an alarm signal directly to the central Fire Brigade Control Room.

Electrical Safety

Do not attach the power main switch to the 230 volt AC without permission of a demonstrator or technician. All electrical circuits have to be checked by the demonstrator before the experiment may be started. Do not tamper with any mains plugs or sockets, if there is a fault the technician will fix it for you. Always give attention to safety if you are using dangerous voltages (> 40 V DC and > 60 V AC) and special attention working at high voltages (> 300 V).

Compressed Gases

Compressed gases may only be used after first consulting a demonstrator or technician. Always turn off the main valve when you are finished with the experiment and report this to the demonstrator. Immediately report any leaks or defects.

Laser Radiation 

The laser sources of light used in the experiments fulfill the German technical standard ‘Safety Requirements for Teaching and Training Equipment – Laser’ for class 2 lasers. Never look directly into the direct or reflected laser beam. Do not exceed the glare limit (i. e. no observer should feel dazzled). In the experiment ‘Diode laser’ (Class 3B Laser, Power max. 50 mW, 808 nm) the safety regulations DIN VDE0837 or IEC 0837 must be observed. Class 3B laser equipment is potentially hazardous. To prevent direct viewing into the beam and to avoid uncontrolled reflections the laser should only be operated in a supervised laser area. Eye protection by laser safety spectacles is necessary if there is a possibility of either direct or reflected radiation entering the eye.

Ionizing Radiation 

Ionizing radiation sources can pose a considerable health risk to affected workers if not properly controlled. The two types of ionizing radiation are particulate (alpha, beta, neutrons) and electromagnetic (x-rays, gamma rays) radiation. Radiation exposures from radioactive sources should be maintained as low as reasonably achievable. The radiation-safety standards have to be considered. An effective dose of 1.5 mSv within a year to an individual is a suitable source constraint in most cases. Check the equivalent dose (unit Sievert, Sv) at the workstation using a radiation dosimeter. The maximum value of 1.5 µSv/h should not be exceeded.

General Information

- If you spill any mercury, please report it immediately to the demonstrator or technician.
- Solvents can be toxic and/or highly inflammable. Avoid breathing and heating them as far as possible.
- Note all of the special instructions and comments to safety (Ionizing Radiation, Lasers, High voltages, Evacuated Tubes) provided at any workplaces!
- Note, you are required to take reasonable care for your own health and safety and that of others who may be affected by what you do or do not do.
- Make sure that the tools and equipments you use are in good condition, suitable for duty, and used correctly. Make sure that you pay due care and attention at all times to your working activities, your actions, and your movement. Keep your workplace clean and tidy.

- You are not allowed to use another workplace than the one assigned to your experiment; in particular, it is not allowed to move equipment from other workplaces to your workplace for use in your experiment.
- Pay attention to your clothes and property.
- Please inform the demonstrator, if you want to leave the Introductory Physics Laboratory during the lecture. Otherwise you are not allowed to continue with the experiment.
- The use of mobile phones in the laboratory is prohibited.

In the Introductory Physics Laboratory you will only use PC's to perform measurements and to evaluate measured data using ORIGIN or other Software. Other activities, e.g. disk, system and software manipulations, use of own storage media and internet surfing, are forbidden. If these rules are broken, the student might be excluded from the laboratory course.
If you detect any faults in the PC systems, please immediately inform the demonstrators!

Accidents: The accident report book is kept in Room 212 (demonstrator's room). Accidents must be recorded on file and if necessary investigated by the Departmental Safety Office or the University Safety Adviser.

Priv.-Doz. Dr. M. Ziese Prof. Dr. F. Kremer

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