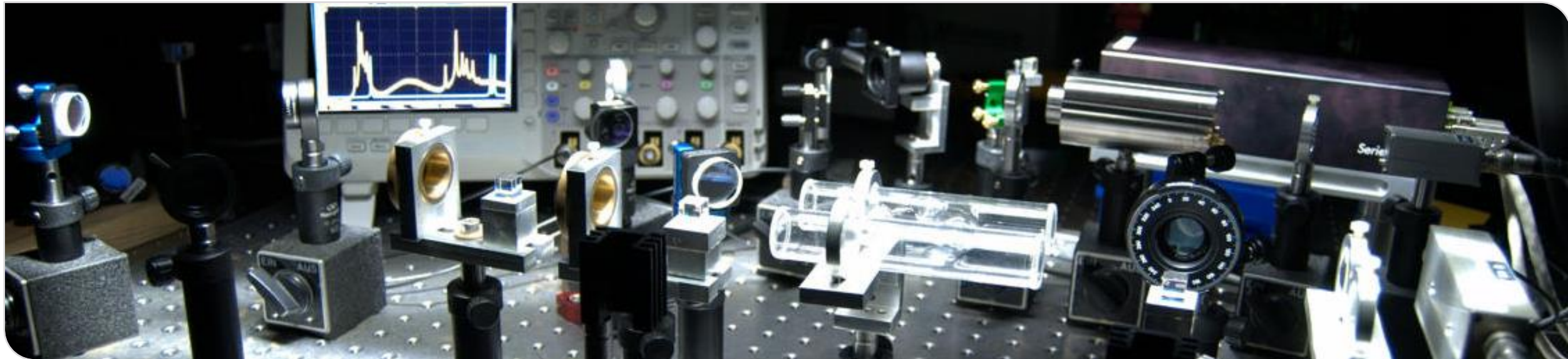


Einführung in das Praktikum Moderne Physik (Bachelor)

and introduction to the
Advanced Physics Lab (Master)



Advanced Physics Labs

Head

Priv.-Doz. Dr. A. Naber	phone: 43416	andreas.naber@kit.edu
-------------------------	--------------	-----------------------

Section management

Applied Physics	Dr. G. Guigas	phone: 47480	gernot.guigas@kit.edu
Institute of Physics	Dr. C. Sürgers	phone : 43456	christoph.suergers@kit.edu
Nuclear Physics	Dr. J. Wolf	phone : 25532	joachim.wolf@kit.edu

Organisation / Schedule

(all sections) C. Huck	phone : 47741	carmen.huck@kit.edu
		room F 1-24

Advanced Physics Labs

Up-to-date information / Upload of protocols

➡ **ILIAS web pages for both lab courses!**

Language can be set in your ILIAS profile
(button with your initials)



Preparation

Online – Electronic Documents

The documents for your preparation as well as a cover sheet for the protocol can be found on the ILIAS pages of the Advanced Lab Course.

Main → Information about the experiments → (Institute) → (name of experiment)

Offline – printed documents

- Ask Mrs. Huck (office, room F 1-24)

Procedure

1. **Conversation** between supervisor and the group

- Bring your **written preparation** with you.
- **Control:** Are the students sufficiently prepared? Do they have the necessary knowledge of the basics of the experiment?
- **Insufficient preparation** will result in the experiment being aborted, which will then be carried out at an alternative date (only once!).

Procedure

2. **The protocol** should be structured as follows:

- *Cover sheet name of experiment, name of group members, group number and date.*
- *Written preparation*
- *Aim of the experiment, theoretical basics*
- *Experimental setup*
- *Carrying out of the experiment*
- *Evaluation with formulas, error calculation, discussion of the measurement results*
- **Copy of the original measurement protocol**

Not required: formula derivations and excerpts from the literature. If textbooks or sources in the internet are used, this must be adequately identified and cited with reference to the source.

Procedure

3. **Submission** of the protocol

- The protocol must be submitted electronically as a PDF file on **ILIAS** before the start of the next experiment:

Main → Submit Report → Course (xx) → (name of experiment)

- **Requested amendments** must be submitted again one week after return.

The **final protocol** must be submitted within 2 weeks after the last experiment. Any amendments must be submitted within one week after return. After the end of the semester (March 31st or September 30st) a protocol will not be accepted anymore.

Evaluation

- Preparation, carrying out of the experiment and quality of protocol are included in the rating.
- Possible ratings are
 - (+): above average
 - (o): average
 - (-): below average
 - insufficient
- In the case of „insufficient“, the protocol will not be recognized and another experiment must be carried out, which usually cannot take place within the current term.

Partial or complete copying of texts, numbers or graphics from unspecified sources (including from earlier elaborations of the experiment) is considered an attempt to cheat. A **fraud report** leads to the rating „insufficient“ for the concerned experiment.

Certificate

Bachelor's degree course

- 6 recognized experiments are required per group, of which no more than two may be graded (-).
A rating (+) can compensate a (-).

Master's degree course & teaching qualification

- 5 recognized experiments are required per group, of which no more than one may be graded (-).
A rating (+) can compensate a (-).

Safety Rules in the Lab

Warning of dangers caused by electricity

- Electricity can be very dangerous to people (burns, temporary paralysis, ventricular fibrillation, etc.) and equipment (surges, fire, explosion, etc.).

Electrical alternating voltage (50 Hz) over 50 volts and direct voltage over 100 volts are life-threatening!

Safety Rules in the Lab

The following safety rules are mandatory!

- Setup, changing or dismounting of electrical circuits may only be carried out when no voltage is applied.
- Voltage may only be applied after the supervising assistant has checked the circuit.
- After completing the experiment, all devices must be switched off.
- Under no circumstances may the devices be opened during the lab course or used for any purpose other than the measurements.
- In emergencies (accidents involving electricity) the voltage in the lab must be switched off immediately.

An emergency stop switch is located next to the entrance!

- **If a person has received an electric shock, they must always be examined by a doctor.** The contact information of the doctor's office can be found on the lab doors.

Safety Rules in the Lab

Accident Prevention

- In general, the work in the lab may not be carried out alone. There must always be at least one person within sight and earshot.
- Acquaint yourself with the location of First Aid Kits and the emergency room.

Help can always be requested via phone number 3333!

Mobile: 0721 – 608 - 3333

Safety Rules in the Lab

Laser Laboratories

- Some experiments are carried out in rooms designated as laser laboratories. These rooms may only be entered together with the supervisor or someone in charge of the laser. If the „Laser operation“ symbol lights up above the doors, access is prohibited.
- In many cases, laser light is not visible. Wearing the correct safety glasses therefore is mandatory. The laser experiments may only be carried out by the students after Laser safety instructions were given by the supervisor.

Under no circumstances should you look directly into a laser beam!

Safety Rules in the Lab

Liquid Nitrogen (LN2)

- The students may only handle liquid nitrogen independently after instruction from the supervisor responsible for the experiment.
- When transferring LN2, protective glasses and gloves must be worn (risk of burns!).
- If a cryostat or transport vessel suddenly bursts, large amounts of cold gases can be released.

CHOKING HAZARD! Leave the room immediately!

Vacuum Apparatus

- Be careful when handling glass vacuum apparatus (particularly Dewar vessels and Dewar flasks); there is a risk of explosion. Therefore safety glasses and gloves are mandatory.

Safety Rules in the Lab

By signing, you confirm that you have read and accepted the safety regulations.

If you were not able to sign at the preliminary meeting, please go for signing to Mrs. Huck (office F 1-24) on the day of your first experiment. Otherwise you are not allowed to begin the experiment.