

General information and requirements for N-Experiments

General information:

The experiments must be completed in the first and second semester of the master's program. Two students should form a group and work together on each experiment. The dates for the experiments should be coordinated with the supervisors well in advance. Please contact the supervisors via your student/university e-mail, including the names, university e-mail addresses, and enrollment numbers (Matrikelnummer) of **both students from the group**. The instructions for the fulfilment of the experiments will be provided by the supervisors.

Experiments:

For each experiment, **1 week of preparation (at least)** and **2 weeks of follow-up** (preparation of the protocol) will be provided.

Before each experiment, a **half-hour colloquium** is held to control the preparation of the students for it. **Important:** Make sure to study the manual thoroughly. If the colloquium is not passed, the experiment cannot be carried out. A repeat is possible next year!

The experiments should be carried out **independently**. The **supervisor** can provide advice and help with problems.

The experimental results and the execution of the experiments must be well documented to ensure a proper preparation and evaluation of the protocol. **The electronic data should be saved on a USB stick.**

All indicated and evaluated data must be discussed with an **error analysis**. It is therefore important to ensure that measurement errors are recorded during the experiments.

Protocol:

There is a strict **two-weeks deadline** for submitting the protocol. **Late submissions** will **not** be accepted, and the experiment will be marked as **not performed**.

The submitted **protocol** should have the following structure:

- (a) Short introduction to the topic of the experiment.
- (b) Explanation of the experimental set-up and the experiment itself.
- (c) Detailed evaluation and discussion of the results of the measurements, including the calculation of the error or its estimation.
- (d) Discussion of the own data and comparison with published results and / or such given in the introduction.

The protocol should be **15-20 pages** in total (of which about 5 pages of introduction, 1-2 pages of the experiment description) and must be delivered electronically (as **PDF**) to the supervisor.

In addition, ***all recorded raw data*** or intermediate results must be attached electronically.
All data and protocols will be archived for 10 years!

The introduction of the protocol is a summary of the most important physical effects treated in the experiment. It should not be a 1:1 copy of the instructions!!! (***no copy & paste***).

The evaluation and the preparation of the protocol are to be carried out by ***both students*** in the group.

In case one of the students leaves the group after the experiment, the other student is allowed to prepare the protocol alone.

Safety instructions:

The students should strictly follow the specific safety instructions for each experiment given in the manuals and by the oral explanations of the supervisors.

Before starting the experiments “Optical spectroscopy of nanostructured semiconductors” and “X-ray diffraction of nanostructures” the students should sign a confirmation that they have received and understood the specific safety instructions for these experiments given by the supervisors.

In general, during the experiments the students should follow the ***general safety regulations for the laboratories of the University of Kassel***.