

Information for assistants: **PHY122/PHY102**

Lab classes for students in physics – spring term 2020

Web sites:

majors: <http://www.physik.uzh.ch/de/lehre/PHY122>

minors: <https://www.physik.uzh.ch/de/lehre/PHY102/FS2020.html>

Lecturer General Physics I/II: Prof. B. Kilminster

Responsible for the labs: Dr. M. Hengsberger, Dr. K. Müller

General information concerning the modules PHY121 and PHY122/PHY102:

- The physics course II consists of lectures, problem-solving classes (module PHY121), and laboratory work (PHY122 or PHY102)
- The students have to carry out 8 experiments (signature after the experiment) and to hand in 8 reports.
- Additionally the minors have to attend an introductory lecture in week 2 and to carry out the experiment EV, “Introduction to Error Calculus”.
- Lab days are Tuesday 14:00-17:00 and Wednesday 14:00-17:00.
- If the students miss an experiment they have to contact one the responsible ASAP.

The laboratory classes start in the 2nd (PHY122) and 3rd week (PHY102) of the semester, i.e. on Tue, February 25th or March 3rd.

Remark: Both labs run in parallel. You may have to supervise both experiments. There is NO marking of reports anymore for either module, thus the reports have to be corrected by the students (if needed) and eventually to be accepted by the supervising assistant.

Time schedule for the experiments

Each week, the students have to do an experiment; a few days later **every student** returns a report by sending by e-mail or by putting it in the blue letterbox at the entrance of office 11-G-06 (or you make your own arrangement with the students).

You may download the **booklet** “Anleitungen” from the web site as well as from the assistant's web site (address see below). We work a lot on these manuals, so please use the most recent version! Some of these booklets are only available in German, so take some time to translate them and ask your colleagues for help... we are currently translating the manuals and you can find a list and the PDF files of the translated manuals on the following web page:

<http://www.physik.uzh.ch/~matthias/espace-assistant/>

The usual institute **keys** open the labs in building 11, floor G, the office 11-G-06 and a locker situated in floor 11-G next to room 91 and one in 11-E. In the latter you find spare parts, paper, and some other useful things.

Please, keep all doors locked (in particular 11-G-06) when nobody is in the room!

In case of problems with students or concerning the setup of the experiments themselves you can address to me, Matthias Hengsberger (internal phone numbers 54013 or 50664).

If you miss a date due to sickness or you are absent, please, organize **as fast as possible** somebody to replace you. According to experience, you always find somebody. You will get a list of the other assistants with e-mail addresses and phone numbers.

**Time of commencement of the experiments:
afternoon classes: 14:00 on Tue and Wed (until 17h roughly)**

Please, check every week whether you have to teach. It is extremely annoying if students have to search for the assistants!

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One experimental session:

Be on time! It is advantageous to come a few minutes beforehand in order to prepare the experiments. Of course, you have to do the experiments once beforehand...

The electrical mains supply is usually switched off. In each room there is a panel for light, electricity, curtains and so on. Simply press on „Netz Ein“ to switch on mains supplies.

Das „Testatblatt“ is a sheet of paper on which you sign once the students have carried out the experiments and made the required graphics and calculations. You find it at the end of the „Anleitung“. It has two columns, the one on the left is for the signature once the students have finished the experiments. The column on the right is for the signing once the report is handed in and marked (not the marks, just the signature!). They have to hand in within **one week!** (in exceptional cases you may allow for another week).

If you experience **technical problems:**

- In each room, there wall cupboards which contain tools, paper for the printer and so on. This helps to repair little things.
- Andreas James (int. phone 54012) or Conrad Escher (56682) are usually at the institute during the lab hours. They are responsible for the equipment.

If a device is defective you have to fill out a little card that you find in the drawers at the assistant's place. Put this card on my desk in 11-G-06.

At the end of the day:

The students have to clean up the tables once you have (optionally) signed their “Testatblatt”. Please, check that all computers are shut down, and switch off the mains supplies when leaving! Lock the door when leaving the room.

Important: We will do all **bookkeeping** with an online spreadsheet. **Please, update this spreadsheet regularly by marking the presence of the students and by noting the status of the reports, e.g. “received” or “to be corrected” or similar...**

During the semester this serves to see whether some students missed some experiments! At the end whether they all handed in the requested number of reports.

The student's sheets are only used in case of trouble and for their own control...

The report:

For each experiment the every student has to return a report.

This report should contain a short introduction and description of what has been measured and the way this was done. Then there has to be a protocol with the whole data set they have taken, all graphs and calculations required according to the lab manuals (no extra tasks, please!), and the error calculus.

The report may be done using a computer, except otherwise stated! Please insist that the students do graphical analysis manually (e.g. experiment Ab) if this is explicitly mentioned in the manual! For some experiments (like WS2) there is no error calculus. This is explicitly stated in the manual, too.

For reports written with the computer, the same rules apply: each quantity and variable has to be defined, all units and errors should be given, formulas be correct and readable, and in particular the graph axis, slopes, fits etc. properly labeled!

To this end: check that the reports are properly written and focus only on essential points! They have to learn writing such reports in these labs; so, do not insist on little formal details like formatting issues or the use of SI units (nobody in research uses SI units thoroughly or do you?).

There is an example report including some hints at the end of the booklet “Anleitungen” of fall term as well as an English version on the assistant’s web site! Please, use it as a guideline...

January 28, 2020/mh