Fachbereich 08 – Physik, Mathematik und Informatik

Institut für Physik

Physikalisches Praktikum für Fortgeschrittene

Advanced Lab Course in Physics

Guidelines for the Assistants WS22/23

You are assigned to an experiment in the so-called "*F-Praktikum*". This document has the objective to provide you with a short job description.

You are supposed to supervise students typically on Fridays during the semester, but it is common practice to offer a few dates during the break before the semester starts to reduce the work load for assistants and students during the semester. Of course this is voluntary for assistants and students. You will be asked for such dates by the convenors of the course.

If you are a new assistant: There will be **a formal educational training** which is mandatory for new assistants. This training will take place on Tuesday **12th of July 2022** (exact time and room/zoom link will be announced in a separate email. It will last 2-3 h). You will get a certificate for this extra training.
If you have / want to participate, please send an email to P.Blümler!

The supervision mainly comprises the following three topics:

1) **Attestation** (*Vortestat*) (check of student's knowledge prior to experiment):
   Typical duration: ≤ 60 min., preferably before the experiment starts. Please check if the students understand the essential theory and implementation of the experiment. However, with very good students you might also dwell on related physics etc. If you realize that the students have unacceptable deficits (such that they cannot successfully perform the experiment), send them away for study (ca. 2h), or arrange a new date for the experiment and give them a poor mark (see below).
2) **Supervision** of the experiment: You will have to introduce the students to the instrumentation, operation of special devices and programs etc., so that they can perform the experiment. Do not forget to remind the students about safety issues (e.g. LASER safety or other potential hazards). Where appropriate you might also point out pitfalls or how to avoid or repair smaller dysfunctions. Finally the experiment must be critically attended (data, problems etc.) in the lab-book, which you have to sign after completion of the experiment. Also write the marks of the Attestation to the lab book of the group. Each group MUST have a lab book!
3) **Protocol and final discussion**: The protocols MUST be handed to you within 2 weeks after completion of the experiment. Extensions to this deadline are only given in case of written excuses (e.g. medical certificate). Otherwise the mark for the protocol (*Haupttestat*) is ZERO!

   The protocol should contain:

   - a short summary of the physical principles (only as much as it is needed as a reference for the following analysis, e.g. a short motivation of an used equation)
   - short description of the experiment and how the data were obtained (again mainly as a reference for the analysis)
   - the main part should be on the data analysis (fits, errors, significance and how these were obtained), results and their interpretation.

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Dienstgebäude: Staudingerweg 7

- It is not mandatory that the protocol is typeset using a word processing program (can be handwritten as well!).
- It should be emphasized that a protocol should have **less than 20 pages** (A4, at least 11 pt font, 2-3 cm margins). You can reject a protocol which exceeds this number.
- Appendix: References (also to the script, e.g. citing theory and experimentation, etc.), extensive data or graphs as well as a copy of the lab-book should be attached as an appendix, which doesn't count to the 20 page limit.

You should correct the protocol after another 2 weeks, and soon after that you are supposed to arrange for another meeting with the students to discuss the protocol, mistakes, etc. and your mark. This mark (*Haupttestat*) is independent of the first attestation. Both marks should then be entered in the database as soon as possible.

It would be very helpful, if you send P. Blümler one copy of a poor, average and very good protocol, so that the convenors can check for consistency in marking.

Plagiarism: In principle the students are allowed to copy passages, pictures, graphs etc. as long as they provide the source (proper citation). In case you spot copies from protocols of other students, books etc. admonish the students and send P. Blümler a short note. In severe cases send the students to the convenors.

4) **Marking:**

- Use the full marking range (0-15 points) and try to be consistent in your judgments. Please write the marks of the Attestation in the lab book of the students
- Enter the marks as soon as possible in the database of the *F-Praktikum* (login at https://fprdb.physik.uni-mainz.de/ go to *Experiment Mark*). A mask like the following will appear:

Experiment	2 BS
Group number	6

Appointment date	Should be in break
04.04.2022	Yes

Student	Oral mark	Protocol mark	Final experiment mark[1]	University email	Contact email[2]
Eva Musterfrau	13	12	13	musterfrau@students.uni-mainz.de	None
Adam Mustermann	13	12	13	musterma@students.uni-mainz.de	None

Note[3]

You have two slots for each student. Enter the mark of the Attestation (*Oral mark*) into the first and the mark for the protocol into the second slot. The average of both marks will be the final mark for the experiment.

If you have forgotten your password to login to the database, please contact Peter Blümler

Marks**:**
0 = not available (didn't show up)
1 = third of a mark down (German mark = 5.3)
2 = knowledge and understanding way under the level that can be expected. (experiment cannot be done) -> **FAIL**! You should give the group a second chance, but even if they do good they should be marked down. (German mark = 5)
3 = third of a mark up (German mark = 4.7)
4 = third of a mark down (German mark = 4.3) << JUST PASSED!
5 = **below average performance** (German mark = 4.0)
6 = third of a mark up (German mark = 3.7)

7 = third of a mark down (German mark = 3.3)
8 = **average performance as it can be expected** (German mark = 3.0)
9 = third of a mark up (German mark = 2.7)

10 = third of a mark down (German mark = 2.3)
11 = **above average, good knowledge and comprehension** (German mark = 2.0)
12 = third of a mark up (German mark = 1.7)

13 = third of a mark down. (German mark = 1.3)
14 = **way above average, very good knowledge and comprehension.** (German mark = 1.0)
15 = excellent knowledge even on related subjects (German mark = 0.7)

The idea of this marking scheme are 5 general criteria of performance (bold) plus/minus 1 point (corresponds to a third of the marks that finally enter Jogustine)
The marks 0-3 are all a "FAIL!" with different levels for statistics.
The final mark is the average of all given points and it will be checked by the convenors of the course if the points are given for same student performance. The convenors reserve the right to change your points according to this inspection. The average of the points is then transferred to the database

Passing the *F-Praktikum*:
Your judgments are the basis for the final mark for the entire lab-course. With an average mark below 4.0 the course is failed. It is also failed if the Haupttestat was marked with zero points (e.g. two times missed to turn in the protocol on time) (ONCE for BSc/MSc students with 5 experiments, TWICE for BSc/MSc students with 10 experiments or MEd students with 9 experiments). However, in both cases the student may wish to get his/her knowledge checked in a final colloquium which will be arranged by the convenors of the course.

Evaluation sheets:

As soon as available you will find a stack of evaluation forms at each experiment. Please hand one copy to each student (best after finishing the experiment or after the final discussion). The students are supposed to fill them out and drop them in a postbox at the front of lab wing in the 2nd floor of building 2413. The forms are only valid for the actual semester. Older forms or copies cannot be analyzed. You can request the results of this evaluation from P.Blümler.

Experiments:

- Please help us to correct the **scripts** and keep them up to date. They are located on a materials server, onto which you have to login with your JGU-account since it may contain stuff with copyrights.
  https://www.blogs.uni-mainz.de/fb08-f-praktikum-physik-materialien/

  Of course you are allowed to correct or contribute to these scripts. If you wish to do so inform P. Blümler to open an editor-account for you.
- Many experiments are equipped with **PC**s so that the students can check and contribute to the scripts as well. The students' account (login: FP-User) has no password and only limited privileges. The account FP-Assi (password: FPraktikum) usually has administration rights.
- **Defect experiments**: Please contact P. Blümler.
- **Ideas for improvements**: Please contact P. Blümler
- Please remind the students to leave the experiments **neat and clean** (No mugs, spoons, bottles, papers etc.)

Thank you for your help,

Dr. P. Blümler Tel.: 24240, email: bluemler@uni-mainz.de