

Advanced Laboratory Courses

FP-2 (Master) / FP-EDU (Education)

Feedback Sheets

University of Freiburg

Institute of Physics

Version 0.1 (Draft)

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1. Learning Phase Feedback

This feedback is formative and does not affect the grade. It supports learning during the laboratory phase.

Student:

Experiment:

Date:

Tutor:

Entrance Conversation

<input type="checkbox"/> Passed	<input type="checkbox"/> Repeated	<input type="checkbox"/> Failed
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Preparation

Criterion	Excellent	Good	Basic	Insufficient
Understanding of physics principles	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Awareness of measurement technique	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Anticipation of expected results	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Awareness of uncertainty sources	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Laboratory Work

Criterion	Excellent	Good	Basic	Insufficient
Execution of measurements	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Notebook documentation	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Data management	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Safety awareness	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Presentations (Day 1 + Last Day)

Criterion	Excellent	Good	Basic	Insufficient
Clarity of presentation	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Engagement in discussion	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Response to questions	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Honesty about uncertainties	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Written feedback on learning phase:

Tutor signature / Date

Student signature / Date

Note: This is formative feedback. A copy is retained by the tutor and the student.

2. Short Report Feedback and Grade

For FP-EDU experiments 1 and 2. Same principles as full reports, reduced scope. Quality over length.

Student:

Experiment:

Submission date:

Tutor:

Report Assessment

Criterion	Excellent	Good	Basic	Insufficient
Clear statement of objectives	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Appropriate method description	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Data presentation with uncertainties	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Quality of analysis	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Interpretation and discussion	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Honest treatment of limitations	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Use of references	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Written feedback on report:

Resubmission (if applicable)

<input type="checkbox"/> Resubmission required	Deadline: _____
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Grade:

Grade justification (required):

Tutor signature / Date

Student signature / Date

3. Full Scientific Report Feedback and Grade

For FP-2 one-week experiments and FP-EDU experiment 3. Comprehensive scientific documentation required.

Student:

Experiment:

Course:

☐ FP-2 (Master) ☐ FP-EDU (Education)

Submission date:

Tutor:

Introduction

Criterion	Excellent	Good	Basic	Insufficient
Context and motivation	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Clear statement of objectives	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Connection to physics principles	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Method

Criterion	Excellent	Good	Basic	Insufficient
Description of experimental setup	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Explanation of procedure	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Sufficient detail for replication	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Results

Criterion	Excellent	Good	Basic	Insufficient
Clear data presentation	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Appropriate visualisation	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Uncertainties stated and justified	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Anomalies acknowledged	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Discussion

Criterion	Excellent	Good	Basic	Insufficient
Interpretation connected to physics	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Transparent assumptions	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Limitations acknowledged	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Alternative explanations considered	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Conclusion and References

Criterion	Excellent	Good	Basic	Insufficient
Key findings summarised	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Open questions identified	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Sources properly acknowledged	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Overall Quality

Criterion	Excellent	Good	Basic	Insufficient
Logical flow and structure	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Scientific writing quality	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Integration of theory and experiment	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Written feedback on report:

Resubmission (if applicable)

<input type="checkbox"/> Resubmission required	Deadline: _____
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Grade:

Grade justification (required):

Tutor signature / Date

Student signature / Date

4. Master-Seminar Feedback and Grade

For FP-2 seminar presentation (two-week experiment results). 60 minutes: ~30 min presentation + ~15 min discussion + ~15 min exam questions.

Student:

Experiment:

Date:

Tutor:

Organiser:

Presentation (~30 min)

Criterion	Excellent	Good	Basic	Insufficient
Clear logical structure	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Coherent argumentation	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Causal connections established	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Understanding of physics (not just procedure)	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Honest treatment of uncertainties	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Connection between theory and experiment	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Visual quality and clarity	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Invites discussion	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Discussion Phase (~15 min)

Criterion	Excellent	Good	Basic	Insufficient
Engagement with questions	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Quality of responses	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Openness to alternative views	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Honesty about limitations	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Exam Questions (~15 min)

Criterion	Excellent	Good	Basic	Insufficient
Depth of understanding	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Ability to extend beyond presentation	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Response to probing questions	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Scientific reasoning	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Written feedback on seminar:

Grade:**Grade justification (required):**

Tutor signature / Date

Student signature / Date

5. FP-EDU Seminar Feedback and Grade

Exam phase of Labor-Spezial. 60 minutes: ~30 min presentation + ~15 min discussion + ~15 min exam questions. Didactic reflection must be integrated throughout.

Student:

Labor-Spezial topic:

Date:

Tutor:

Organiser:

Physics Content

Criterion	Excellent	Good	Basic	Insufficient
Understanding of physics principles	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Quality of experimental work	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Data analysis and interpretation	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Honest treatment of uncertainties	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Didactic Reflection (must be integrated throughout)

Criterion	Excellent	Good	Basic	Insufficient
Integration of didactic content	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Identification of key conceptual challenges	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Realistic adaptation proposals	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Connection to curriculum/pedagogy	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Awareness of learner perspective	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Presentation Quality (~30 min)

Criterion	Excellent	Good	Basic	Insufficient
Clear logical structure	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Coherent argumentation	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Visual quality and clarity	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Invites discussion	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Discussion Phase (~15 min)

Criterion	Excellent	Good	Basic	Insufficient
Engagement with questions	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Quality of responses	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Openness to alternative views	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Exam Questions (~15 min)

Criterion	Excellent	Good	Basic	Insufficient
Depth of physics understanding	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Depth of didactic reasoning	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient
Ability to extend beyond presentation	<input type="checkbox"/> Excellent	<input type="checkbox"/> Good	<input type="checkbox"/> Basic	<input type="checkbox"/> Insufficient

Written feedback on seminar:

Didactic Reflection Assessment

<input type="checkbox"/> Fully integrated	<input type="checkbox"/> Present but superficial
<input type="checkbox"/> Added as afterthought	<input type="checkbox"/> Missing or inadequate

Grade:

Grade justification (required):

Tutor signature / Date

Student signature / Date

Note: This grade covers the Labor-Spezial (learning phase + seminar). Didactic reflection is required in both phases.