

Laboratory for Introductory Physics for Life Sciences (I) PHY 121 Lab Spring 2018

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About

This is the organizational page for the Physics Introductory Labs portion of PHY 121 for Spring 2018.

Instructors

R. Lefferts

Director of UG Laboratory

B. Nielsen

Teaching Assistants

To Be Announced

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Scope

The scope of the introductory labs is to give an understanding of basic experimental methods applied in physical sciences. The experiments performed during the lab sessions are closely related to the topics covered in the lecture.

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Overview

You will perform each week an experiment as indicated in the [Calendar](#) section. You have 1 hr 50 min time to perform each experiment. Each experiment will come with a manual that you can access from this webpage.

Your performance in the lab session will be evaluated by your teaching assistant. The evaluation is based on the introduction of your lab report that you have to write up and submit to your TA at the beginning of the session and your performance during the experiment that includes a final written report that will be submitted in the week following the lab experiment. Please refer also to [Lab Reports](#).

Your performance/report will count 100%, of which the introduction is worth up to 10%, toward your grade on the particular lab experiment.

Your lab report should give the reader a chance to get a picture of the experiment and what you have done without having the lab manual in their hand. You should not copy excerpts from the manual or only refer to passages in the lab manual. The lab report has to have the following format:

- **Title sheet**

Name, lab-section, TA name, partner name(s), name of experiment, date

- **Introduction** [10 pts]

In your own words: briefly describe the experiment, DO NOT copy the lab manual

Describe how to perform the experiment with a short sketch and text

- **Procedure** [20 pts]

Describe briefly what you have done during the session

- **Data sheet** [20 pts]

Include data taken which has been analyzed, clear and neat

Have your TA signed your data sheet before you leave the lab

- **Analysis/Discussion [40 pts]**

Graphs, calculations, uncertainty estimates

- **Conclusion [10 pts]**

Brief summary of results: physics implied by the data

Any caveats or comments

Σ [100 pts]

IMPORTANT: You have to submit your **first** lab report 48 hours after your lab experiment finished. Please refer to your Teaching Assistant for details. For your second and all other experiments you have to submit your lab report the latest at the beginning of the next lab session following the experiment performed.

Penalties for late submission

Any lab report submitted after the deadline will not be considered and receive zero points for the lab experiment.

Your final grade will be an average from your single lab grades scaled by a factor that will be determined at the end of the semester. This final grade will be part of your mothercourse's grade weighted with 25%. This grade will be included in the grade of the mother-course and you receive a combined grade for PHY121 and PHY123 which will be the same for both courses.

You are required to perform each lab experiment by yourself, mostly together with a lab partner.

If you need to be absent for a lab experiment you will have to provide written documentation for a significant reason to be absent, e.g., a medical note from your doctor, a written document about jury duty, and similar. You will then have the opportunity to make up the lab experiment in the dedicated make-up week. You have to arrange with your teaching assistant for a make-up session.

If you are absent for a non-excusable reason your lab grade for that particular experiment will be Zero (0) points! If you miss one lab for a non-excusable reason, your combined grade for both courses will drop by one letter, e.g., B+ to C+, A to B, etc. If you are absent for a non-excusable reason for more than one lab you will fail the course, both, mother-course and lab course.

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Calendar

The first lab sessions will take place in the week starting from **Monday, January 22nd, 2018**.

For grading policy and methods please see above.

The sequence of Labs in PHY 121 is the following:

Lab 0: January 22 - January 26 [Introduction to the laboratory and Uncertainty, Error & Graphs](#)

Lab 1: January 29 - February 02 [The Pendulum](#)

Lab 2: February 5 - February 09 [Acceleration](#)

Lab 3: February 12 - February 16 [Projectile Motion](#)

February 19 - February 23: Make-up Lab Week for Labs 1 - 3. No lab classes.

Lab 4: February 26 - March 02 [The Atwood Machine](#)

Lab 5: March 05 - March 09 [Centripetal Force](#)

March 12 - March 16. Spring Break. No lab classes.

Lab 6: March 19 - March 23 [Conservation of Energy](#)

March 26 - March 30: Make-up Lab Week for Labs 4 - 6. No lab classes.

Lab 7: April 02 - April 06 [Conservation of Momentum](#)

Lab 8: April 09- April 13 [Standing Waves](#)

Lab 9: April 16 - April 20 [Simple Harmonic Motion](#)

Lab 10: April 23 - April 27 [Mechanical Equivalent of Heat \[Tentative\]](#)

April 30 - May 04: Make-up Lab WEEK for Labs 7 - 10.

LABORATORY SCHEDULE & TEACHING ASSISTANTS:

To Be Updated January 2018

Section	When	Where	Teaching Assistant
PHY121 L01	Mo 1:00pm - 2:50pm	A-121	TBA
PHY121 L02	Mo 3:00pm - 4:50pm	A-121	TBA
PHY121 L03	Mo 5:00pm - 6:50pm	A-121	TBA
PHY121 L04	Th 1:00pm - 2:50pm	A-121	TBA
PHY121 L05	Tu 1:00pm - 2:50pm	A-121	TBA
PHY121 L06	Th 3:00pm - 4:50pm	A-121	TBA
PHY121 L07	We 2:30pm- 4:20pm	A-121	TBA
PHY121 L08	We 4:30pm- 6:20pm	A-121	TBA

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Reporting Problems

Please report any problem to either your corresponding lab instructor or Mr. Lefferts.

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Lab Manual Archives

[PHY 121 and 122 Plotting Tool](#)

These are only pdf files (no forms or plotting functions)

[The Pendulum Worksheet](#)

[Acceleration Worksheet](#)

[Projectile Motion Worksheet](#)

[The Atwood Machine Worksheet](#)

[Centripetal Force Worksheet](#)

[Conservation of Energy Worksheet](#)

[Conservation of Momentum Worksheet](#)

[Standing Waves Worksheet](#)
[Simple Harmonic Motion Worksheet](#)
[Mechanical Equivalent of Heat Worksheet](#)

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