

# 1<sup>st</sup> year physics labs

## General information (in-person labs)

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### Introduction

The lab component of your 1<sup>st</sup> year physics course gives you the opportunity to study best practices for experimental research in physics. You will learn the basic tools for creating and following lab protocol, data analysis and manipulation, and presentation of results.

Over the course of the semester, you will study the basics of measurements in physics and carry out several classical experiments in a lab setting. In addition to mastering the basic lab skills (observing, recording, analysing, and presenting results), you will draw conclusions based on your results as well as solve some theoretical problems related to each experiment.

### Website

The physics lab website is located on the university virtual campus (Brightspace):

<https://uottawa.brightspace.com/d2l/home>

Your lab and course website are separate. Please check the lab website regularly for updates.

### Location

Physics laboratories are located on the 3<sup>rd</sup> floor of STEM building (South tower) in rooms STM 372, 375, 378, 379, and 380. Turn right when coming off the elevators or turn left when coming up the central staircase.

### Schedule

The laboratory schedule is available on Brightspace in the “Lab schedule” section of the Table of Contents. Please read your lab schedule **carefully** to know when your first lab is. A mistake while reading your lab schedule is not a valid excuse to miss a lab session! Do not assume that your lab schedule is the same as in your chemistry or biology class!

#### *What is my laboratory group number?*

Your laboratory group is the number that is written after your course code for the LAB section in your official schedule or in your uoCampus registration. Here are some examples:

**Example 1: PHY 1121 - A04 LAB – This means you are in lab group A04 or simply group 4.**

**Example 2: PHY 1322 – Z10 LAB – This means you are in lab group Z10 or simply group 10.**

#### *Can I transfer to another laboratory group?*

You have to follow the schedule of your lab group. If you want to transfer to another group, you must use the Enrol tool in your uoZone. If you are not able to transfer to a specific group, it means that this group is already full. You cannot switch groups after the last day for changes to course selection.

## What should you do to prepare for the lab?

There are five experiments per semester. Each experiment has its own folder in the Brightspace lab website which contains a presentation, lab manual, and lab report template. You should view the presentation, read the lab manual in advance, and **print the lab report template and bring it with you to your lab session**. Other items you should bring to the lab session are a pencil/pen, eraser, calculator, and a USB key to save your results. You do not need lab coats or goggles for your physics labs. Goggles will be provided if needed for some experiments.

For most labs, there is a pre-lab test that you should complete at least 30 minutes before your lab session. You may do the pre-lab test up to 10 times and only your highest score will be kept. Each attempt has a one hour time limit. All answers to the test can be found or solved by reading the lab manual. You have more than enough time to complete these test so do not wait until the last minute. There will be no extension if you are experiencing technical difficulties 32 minutes before your lab session. If you don't do the pre-lab test, you can still attend your lab session but you will simply lose the marks for the test.

Most of the theory covered in the lab manual will be review from secondary school physics or material that you have seen (or will soon see) in your physics lectures. You may be required to go back and study some of your past lessons or consult your course textbook or an online resource if it has been too long since you studied the topics.

There is also an online Exp. #0 in Brightspace which consists of four quizzes that must be completed before the due date at 11:59 pm. All answers to the tests can be found or solved by reading the tutorials shown in the Exp. #0 folder in Brightspace. While the due date is halfway through the 2<sup>nd</sup> experiment, we strongly recommend you try out the tests before your first lab session. You may do the Exp. #0 tests up to 10 times each and only your highest score will be kept.

## Laboratory rules

### General rules

- Arrive on time! Critical explanations (how to use instruments, lab procedures, etc) are given at the beginning of each lab session. Lab demonstrators are not responsible for repeating their explanations to anyone who arrives late for the session. **You will not be allowed to do your lab if you are more than 20 minutes late.**
- Leave your personal belongings on the hooks in the back of the classroom. Only bring what you need for the experiment to your workstation. If you prefer to have your bag close to you, you can put it on the shelf under your lab bench.
- No cell phones should be used during the lab for inappropriate activities (texting, social media, etc...).
- No food or drinks in the lab.
- You and your partner are encouraged to discuss and help each other but you should not disrupt the TA or the other students. Remember that **each student is responsible to submit their own lab report**.
- Please clean up your workstation at the end of the lab session. You should leave it the same way you found it.

### Plagiarism

You are allowed to use books or manuals and you may look up concepts and equations on the internet to complete your lab report but be careful not to plagiarize. You should not copy your answers directly from the internet, your partner's report, or a previous year's lab report. You may also not have any pre-filled results or answers in your lab report. **Any activity that constitutes plagiarism will result in a mark of zero on your lab report as well as the report of any other party involved.** Additional information about the uOttawa policy on plagiarism is here: <https://www2.uottawa.ca/current-students/academic-integrity>

### *Stealing or careless use of laboratory equipment*

Please do not steal the lab equipment and please be careful when using the equipment. Always follow the instructions and ask your demonstrator or a lab staff member if you are not sure how to use a given piece of equipment. **Stealing or careless use of the lab equipment can result in a mark of zero on your lab report and/or further sanctions by the university.**

## Evaluation

- The lab component is worth 20% of your physics course grade. The breakdown of evaluations is shown in Brightspace in the section “Grades distribution”. The evaluations consist of:
  - Exp. #0 – 4 quizzes
  - Pre-lab tests most experiments.
  - Lab reports for each experiment.
- Failing the lab component does not mean you fail the course. It is only one component of the course.
- You do not have to complete the pre-lab test to attend your lab session; you will simply lose the points related to the pre-lab test.

## Submitting a take-home report

- Some of your lab reports will be due at the end of the lab session while some are due after one week.
- The drop box for take-home reports is located in the central corridor of STEM 3<sup>rd</sup> floor South tower. **There is a section in Brightspace with a picture of the lab report dropbox. Do not use the drop box for your class homework!**
- Make sure you put your report in the right box (you should know your course code and group number) or 10% of the lab value will be deducted from your mark.

## Late report policy

### *Take-home reports*

Take-home reports are picked up one week after your lab session. Note: **For fall/winter: due date is 5:00 pm. For spring/summer, due date is 4:00 pm.**

After that time, your report is considered to be late and a **penalty of 10% of the lab value per day** is deducted from your mark (even 10 minutes late results in a penalty of 10%!). If your report is more than 2 days late, you will receive zero.

**Here is an example.** If your lab session was on a Monday, your report would be due the following Monday by 5:00 pm. If it is submitted after 5:00 pm Monday but by 5:00 pm Tuesday, you would receive a **10% penalty (1 day late)**. If your report is **2 days late** you would receive a **20% penalty**. If you don't submit your report by 5:00 pm on Wednesday you will receive a **zero** for that report.

### *In-lab report*

In-lab reports must be handed to your TA by the end of your lab session. You cannot take it home to finish it. You must submit whatever you have completed by the end of the lab session or you will receive a zero for that lab. No report = no mark!

## Absence or missed labs

You are expected to attend your scheduled lab session and submit your lab reports by the given due dates. If you anticipate missing a lab session or due date due to a medical reason or extraordinary situation, you should advise one of the laboratory staff as soon as possible (email [phylab@uottawa.ca](mailto:phylab@uottawa.ca)). Reasons such as obligation to another course (ie. studying for midterms) or misreading a due date are not acceptable. You must make arrangements with lab staff **within one week following a missed due date** otherwise you will receive a mark of zero for that lab without appeal.

If you are granted permission for a make-up lab session, a member of the lab personnel will fill out a form indicating the date, the time, the room, and specifying the lab section you will be joining to do the particular experiment. At the end of your make-up lab session, you are required to submit the form along with your completed lab report to the demonstrator.

## Assistance

### *Physics help center*

The physics help centre is located at STM 207. The schedule will be posted on the help centre door as well as near the physics secretariat (STM 336) and in Brightspace Lab. Teaching assistants at the help centre are there to help students taking first year courses and this includes the labs.

**NB:** the help center is closed during the spring/summer.

### *Academic accommodations*

If you are registered with [Student Academic Support](#) and require an academic accommodation to complete the lab component of the course, please contact the laboratory personnel as early as possible. We will arrange something to assist you.

## Contact

The 1<sup>st</sup> year physics laboratory staff can be reached by email at: [phylab@uottawa.ca](mailto:phylab@uottawa.ca). You can also stop by our service counter at STM 377 where the lab technicians will be happy to assist you.

If you have a question or a problem regarding the operation of the 1<sup>st</sup> year laboratories, you should contact the laboratory coordinator:

Dr. Michael Wong  
**Physics lab manager**  
Office: STM 368  
Phone: (613) 562-5800, x 2323  
Email: [mwong@uottawa.ca](mailto:mwong@uottawa.ca)

### *Email etiquette*

Please include a detailed subject to your email (with your course code and group number if possible). Please include your name, student number (and course code / group number) as a signature to your email. **Rude or incomplete emails will be ignored.**