

Introductory Comments

The main goal of the Physics 1020 and 1021 laboratories is to enhance student understanding and mastery of lecture contents, and the underlying rationale is that students will better understand the physics if they conduct experiments and see for themselves how the physics principles work in the natural world.

The laboratories are designed to develop key skills for taking accurate measurements, keeping accurate laboratory records and for interpreting your data and assessing its accuracy. The apparatus you use to observe the natural world may be as basic as a wooden meter stick, but it may also involve using computer-assisted data collection software (*Logger Pro*) which supports over 80 Vernier sensors for real-time graphing and analysis. When dealing with large quantities of data, you will be glad of the assistance of a computer to help you analyze your data, also to use the power of a computer as you calculate what you would expect from a theoretical model and compare it to data.

There are two main documents used in the lab:

- ***The laboratory instructions.*** The instructions files are available both on Lab computer desktop folders (for lab purpose) and online (for preparation only) (<https://www.mun.ca/physics/undergraduates/fylabs/p1020/manual.php>). Please open the instructions files from your computer desktop folders when you start your laboratory. They provide directions for the experimental procedure to be followed and are linked to other preset files used for data collection and analysis.
- ***The laboratory workbook.*** You will need to purchase this booklet in the University Bookstore and bring it with you on the first lab. In this booklet, in spaces provided, you will record your experimental data, results of your analysis and write answers to questions. You will submit it for grading at the end of the lab period. If you need to read any parts of it in preparation for the upcoming lab, you will be able to access it online.








Prelab questions are a set of questions which need to be completed prior to the beginning experiment and are checked by staff at the door for each experiment. They are required as part of your course evaluation and will affect your final mark. They can be found on your workbook or online on the MUN Physics web page (<https://www.mun.ca/physics/undergraduates/fylabs/p1020/manual.php>).

Preparation

The following is expected of you for preparation. Not following these may leave you unable to finish labs in the allotted time, with a less than desirable grade, and/or without a good understanding of the course material.

- Review or learn the relevant theory for the laboratory. This includes any appropriate sections from the course text.
- Review the instructions while taking note of the questions of the lab.
- Answer prelab questions before your laboratory session.

The following graphics are found throughout the laboratory instructions and should be noted for their importance. You need to follow the graphic alerts and ensure that you do not miss a key instruction, question or table and that you adhere to safety or equipment handling warnings.

	A note or a warning. DO NOT IGNORE THESE!
	Go to the laboratory workbook. A question that must be answered in the Laboratory Workbook
	Go to the laboratory workbook. Data that must be entered in the Workbook
	Indicates something to be printed
	Checkpoint! You must get an instructor's initials
	A clickable icon that opens Logger Pro
	A clickable link that opens Graphical Analysis