



Department of  
Physics

# PHY131H1F - Summer Practicals Guide



University of  
Toronto

[**No Emails Version** to prevent the spam-bots from finding us – please see handout given in class, or [www.physics.utoronto.ca](http://www.physics.utoronto.ca) People for our email addresses]

Welcome! The Practicals part of your PHY131 course (also known as “labs”) will involve hands-on activities and team-work. The goal is to work on interesting, challenging experiments and activities, deepen your understanding of the underlying Physics, and develop your laboratory skills and analysis techniques.

The course web-site has the most up-to-date handouts and information:

**<http://www.physics.utoronto.ca/~jharlow/summerlab08.html>**

## Staff

Here are the names and contact information of some of the people who can help you in the Practicals this semester:

**Jason Harlow**, Practicals Coordinator Office: MP129-A, Phone 416-946-4071,

**April Seeley**, Course Administrator Office: MP129, Phone 416-946-0531,

**Larry Avramidis, Phil Scolieri, Rob Smidrovskis**, Practicals Technologists. Office: MP127.

Professors and Administrative Assistants will endeavour to respond to email inquiries from students within 2 days. If you do not receive a reply within this period, please resubmit your question(s) and/or phone (leave a message if necessary). Please note that some servers (such as hotmail) can be unreliable in both sending and receiving messages.

Graduate Student Demonstrators for this semester:

**P5101 Thursday evenings, 7:10 to 10:00 PM. 6 groups working simultaneously in MP126:**

- 1A: Viacheslav
- 1B: Chris Charles
- 1C: Chris Paul
- 1D: Ryan Vilim
- 1E: Aaron Sutton
- 1F: Cristen

**P5201 Thursday afternoons, 2:10 to 5:00 PM. 6 groups working simultaneously in MP126:**

- 2A: Gigi
- 2B: Sergei
- 2C: Rockson
- 2D: Lei
- 2E: Shawn
- 2F: Cristen
- 2G: Hanif

## Schedule

DATE	LECTURE HOURS	TUTORIAL HOURS	LAB HOURS	LAB SESSION/ EXPERIMENT	LAB SECTION
Tue May 13	4	-	-	-	-
Thu May 15	1	-	3	1 – Scaling, Motion Diagrams	P5201 (2-5p.m.) P5101 (7-10p.m.)
Tue May 20	3	1	-	-	-
Thu May 22	1	-	3	2 – Force and Acceleration I	P5201 (2-5p.m.) P5101 (7-10p.m.)
Tue May 27	3	1	-	-	-
Thu May 29	1.5 - Test (6–7:15p.m.)	1	2.5	3 – Force and Acceleration II	P5201 (2:30-5p.m.) P5101 (7:30-10p.m.)
Tue June 3	3	1	-	-	-
Thu June 5	1	-	3	4 – Exp. of Choice	P5201 (2-5p.m.) P5101 (7-10p.m.)
Tue June 10	3	1	-	-	-
Thu June 12	3	-	3	5 – Exp. of Choice	P5201 (2-5p.m.) P5101 (7-10p.m.)
Tue June 17	3	1	-	-	-
Thu June 19	3	1	-	<b>NO LABS</b>	-

## Lab Preparation

Labs happen in MP126 on Thursdays from 2:00-5:00 (P5201) or 7:00-10:00PM (P5101), depending on which section you are signed up for. The first lab is May 15, 2008. Check the notices posted from time to time on the laboratory web page. Your group information should be posted on the U of T Portal site ([portal.utoronto.ca](http://portal.utoronto.ca)). Your group information will also be posted on the bulletin board outside MP126.

Before you come to the lab, you need to obtain:

- An electronic calculator: Choose one which can calculate statistical functions (mean values, standard deviations, etc. of a set of numbers). It is better if it also provides the values of scientific

constants. Bring along the instruction manual for your calculator until you are confident you can use it properly for the statistical calculations.

- A good clear plastic ruler of at least 30 centimetres in length (smaller versions are inadequate), a sharp pencil, and a writing pen. You do not, however, need a lab coat!

Before you come to your first lab you should read this lab guide.

Each section is divided into lab groups (with numbers like 1A, 2B, etc.), each containing about 16 to 20 students per group. Each group has a Graduate Student demonstrator who provides supervision, guidance, organization, and assistance throughout the semester. Although each demonstrator has a specific group responsibility, all of them are available, along with the lab coordinators, to answer questions from any student in the lab. You will meet your demonstrator on your first lab day.

You will not need to purchase a lab notebook before the first lab. Notebooks will be shared by each team in order to reduce costs and paper waste. Coordinate with your team to purchase the notebook and share the cost.

## Procedures and Marking

You will meet five times through the semester according to the schedule for 3 hours each. You will work in assigned teams, which will be reassigned on June 5.

Mark breakdown:

Module 1: Session 1, first team	3%
Module 2: Sessions 2 and 3, first team	6%
Free-choice experiment: Sessions 4 and 5, second team	7%
In-Lab Mark: individual assessment	4%
<b>Total</b>	<b>20% of course mark.</b>

Each activity or main part of an experiment will be marked on a four point scale, with **no** fractional marks. The marks are:

0. This is only for missing or totally unacceptable work.
1. This is for work that is seriously deficient and unacceptable.
2. This is for work that requires improvement. Considerable feedback on what improvement would be needed will be required.
3. This is the “standard” mark and indicates good work.
4. This is for exceptional work. No more than 10 – 15% of the students will receive this mark on any activity.

You are required to attend all sessions and will be penalized for unauthorized absences. The penalty will be a zero on the Module work done in the session you did not attend.

All work in the laboratory which is undertaken for credit must be done under the supervision of a lab demonstrator. Your Lab Notebook must stay with your demonstrator when you leave the lab.

A good lab book is a minute-by-minute record of your work in the lab. It should contain everything you do, all of your rough calculations or preliminary measurements, full details of any error calculations, any comments, records of success or failure, etc., should appear in its pages. **There is no point in copying information that is already contained in the guide sheets.** Nor is there any point in writing elegant descriptions or detailed essays on your procedure. Note form is quite sufficient, as long as it is complete

and comprehensible to your demonstrator and fairly describes what you are doing as you do it. Please be neat! Notebooks are marked, in part, on the basis of completeness.

Do not write in pencil since it is not permanent. You will see that the lab book has numbered pages and a title page so that it is possible to follow the logic and sequence of the recorded work, experiment-by-experiment. Enter the title of the experiments you do in the List of Experiments, along with starting and completion dates, and the names of the students who were present in each team.

Every student should sign the notebook at the end of every session and write a brief (at least one sentence) note describing part of what was learned during the session.

Plagiarism (representing the work of past students, current students, or any other person as your own) and invention (reporting imaginary data) are serious academic offences. If done in the “outside” world, they often produce serious setbacks for science, not to mention lawsuits! In the university setting, plagiarism or invention will result in disciplinary measures such as setting your final lab mark to zero which means that you would lose the lab portion of your final course mark. Disciplinary measures are referred to the Dean of your Faculty and they may remain on your record. Repeated offences can lead to expulsion from the University. Laboratory work done without your demonstrator’s knowledge will not be marked. You will receive a zero final lab grade if you copy another person’s work or invent data.

If you legitimately copy part of some published work in your lab book, you must cite that work, quoting the author, title, date, etc. Copying published work with proper citations is not plagiarism. Also, you may talk about experimental data with other persons in your group.

### **In Lab Mark**

During each lab session throughout the course, your demonstrator will be observing how you, as an individual, perform in the lab on an ongoing basis. In arriving at this mark, your demonstrator will take into account your preparedness, the way you approach and organize your experimentation, your efficiency in planning and setting up the experiment, evidence of graceful handling of instruments and equipment, and your care in taking data. Also considered will be your ability to estimate errors (rather than calculating each one exactly), your ability to distinguish the essential from the inessential, the way you work with your team, your willingness to try something, to make a mistake, and to learn from it, and how often you seek advice and ask questions. In lab mark will be computed as a percentage out of 100, following the academic standards of U of T.