

## Overview

I would like you each to write a 2-page typed report to answer ONE of the following three general questions:

1. What is the slope of some stairs on campus?
2. What is the range between minimum cold water temperature and maximum hot water temperature in some bathrooms on campus?
3. Do male U of T students have larger hands, on average, than female U of T students?

As part of your report, you should re-state the question so that it is more specific. Make sure that your final answer matches the particular question *you* are asking. If you would like to answer a question that is very different from one of the above three, please first obtain permission from Jason Harlow. It should *not* be a question that was asked in previous semesters.

The Measurement Project will, in part, be marked on writing style and on the organization and presentation of the material. Good English structure, spelling and grammar are expected, and graphs and diagrams should be clearly labelled. While your procedure may include work you do with your team-mates in practicals (who should be listed as collaborators in your report), your report should be written by you, and based primarily your own individual work. For more information on “how not to plagiarize”, please read <http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize> .

## Motivation

If you took the pre-requisite for this course, PHY131, you read the document, “Error Analysis in Experimental Physical Science”, which is still available for your review at:

<http://www.upscale.utoronto.ca/PVB/Harrison/ErrorAnalysis/>. We hope that as part of PHY131 and PHY132, you have learned how to take careful measurements, report all measurements with a  $\pm$  error, propagate errors, compute standard deviation, etc. These are skills that will last you the rest of your life as you continue in any scientific, medical or other discipline in which measurements are important. You should also be able to write a clear, readable report in English that informs the reader of your findings and conclusions.

The Measurement Project is an individual homework assignment which contributes toward your Practicals mark. The Practicals mark counts toward 15% of the course mark, divided as follows: **5% for first team notebook mark** (sessions 2-5), **5% for second team notebook mark** (sessions 6-10) and **5% for the individual Measurement Project**.

## Resources

The technologists for PHY132 are Larry Avramidis, Lilian Leung and Phil Scolieri. They share an office in MP127. With their permission you may borrow metre sticks, digital angle gauges, stopwatches, measuring tape, Vernier callipers, thermometers and the like from the Resource Centre in MP126. If MP126 is not open you can knock on the door of MP127 during their regular business hours M-F 9-12, 1-4.

## **Due Date, Procedures for Turning in Report.**

The Measurement Project in electronic format is due to [www.turnitin.com](http://www.turnitin.com) by 11:59 PM on Wednesday, December 1, 2010 (Word, PDF and several other formats are acceptable). An identical paper copy must also be submitted to your Practicals TA1 before 4:00pm on Friday December 3. The paper copy may be turned in early if you wish, as may the electronic version. Your name, Student Number, Practical Section and Group code must appear clearly on the front of your Measurement Project. Note that the paper and electronic versions must be identical.

Late Measurement Projects will be penalized at the rate of 10% per day of lateness. The number of days of lateness will be the maximum of the electronic submission lateness, as based on the [turnitin.com](http://www.turnitin.com) time-stamp, and the paper-copy lateness. A fractional number of days will always be rounded *up* to the nearest integer, and the penalty will be applied as a percentage of the unpenalized mark. All days count, including Saturdays and Sundays. Measurement Projects with an electronic or paper lateness of more than 10 days will receive a zero.

To submit your assignment electronically you should follow these steps:

1. **Log on to <http://www.turnitin.com> . If you don't already have a user profile, set one up:**
  - Click *Create a user profile*.
  - Enter a valid utoronto.ca email address, password and your name
2. **Enroll in this class**
  - From your turnitin homepage click the *Enroll in a class* button.
  - For this class the *Turnitin class I.D.* is **3540988** and the *Turnitin enrollment password* is [ **removed for web version – please see paper version distributed in class, or ask your TA or Jason Harlow or a fellow student for this password** ]. The name of the class should be “PHY132 Fall 2010”.
3. **Submit your paper.**
  - From your Turnitin homepage select this class
  - Click on the Submit button and select *File Upload* from the pulldown menu.
  - Enter a submission title for your paper, which should include your name. Use the *Browse* button to select the file that you would like to submit. Click *Submit*.

The file you submit to [turnitin.com](http://www.turnitin.com) version will be treated as your official submission, and the marker may download this file from the [turnitin.com](http://www.turnitin.com) web site. The marker will also have access to an “originality report”, which is a comparison of the text-portion of your report to millions of other documents, including all the online material for this course, all the other reports submitted to [turnitin.com](http://www.turnitin.com), and many documents which were available at some time on the world-wide-web. The originality report will probably not be used in the marking unless there is some evidence that an unusually large amount of your unquoted text is identical to some other source. If you do wish to quote a source, be careful to reference it and include the copied words in quotation marks, so it is clear to the reader that you did not write them.

I am required by law to include the following paragraph [issued to students in class Oct. 4, 2010]:

*"Normally, students will be required to submit their course essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their*

*essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site".*

If you prefer, you may choose to submit only a hard-copy of your project, but in this case you must also provide a photocopy of the relevant notes you took while performing your measurements with dates and times, with numbered references linking the text in your formal report to the original measurement notes. Please notify Jason Harlow at least one week before the project deadline if you prefer to submit a hard-copy only.

### **Length Penalty**

The typed report should be about 2 pages long, corresponding to about 600 to 800 words. The absolute maximum word limit for your report is 1000 words (including title, name, abstract, table entries, equations, figure captions, etc), and the absolute maximum number of pages, including figures, tables, etc is 3. There is no need for a title page, but, if you have one, it *will* be included in the page count. Marks will be deducted if either the word limit or the page-count limit is exceeded.

### **Poster Option**

The most common way to prepare the report is by using a word-processing program (such as Word) with a 12-pt Times New Roman font, into which you may insert figures, tables, etc. As an alternative, you may instead submit your Measurement Project as a poster. The poster should be 28" tall and 36" wide, and should not have any text on it smaller than 24-pt. There are several good programs for making posters, including Powerpoint, Macromedia Freehand, Adobe Illustrator, Adobe Photoshop and Adobe PageMaker. In any case, you should make a PDF of your poster and submit it to turnitin.com following the instructions above.

Posters should include all the necessary information about your measurements and analysis, but should also be eye-catching, colourful and succinct. Posters generally should contain 300 to 500 words, at the most. The length penalty will apply if the word count exceeds 1000.

You should NOT submit a poster in paper format. Instead, please attach the PDF file in an email to Jason Harlow by the electronic deadline. You will receive a confirmation that your report has been received. The very best posters submitted will be printed by the graphics department in Physics, and, with the author's permission, posted in the hall on the first floor of the North Wing of McLennan.

***- Good luck and have fun!***