

## Lab Instructions

The two-hour lab session lies at the heart of this course. In it a combination of problems and laboratory activities is worked in small groups with the assistance of the instructor. These sessions are where you can best learn the material, in order to be able to complete the homework assignments and be prepared for the quizzes and exams that will determine your grade. The following are answers to questions you might have.

Typically, you and your group will be given a combination of problems and laboratory activities to do in a set order. The problems and some of the laboratory activities are not graded, but some of the laboratory activities may be graded. The graded activities, indicated clearly in this manual, together constitute the “lab score.” Your lecturer will explain how the lab score combines with other course elements to determine your grade.

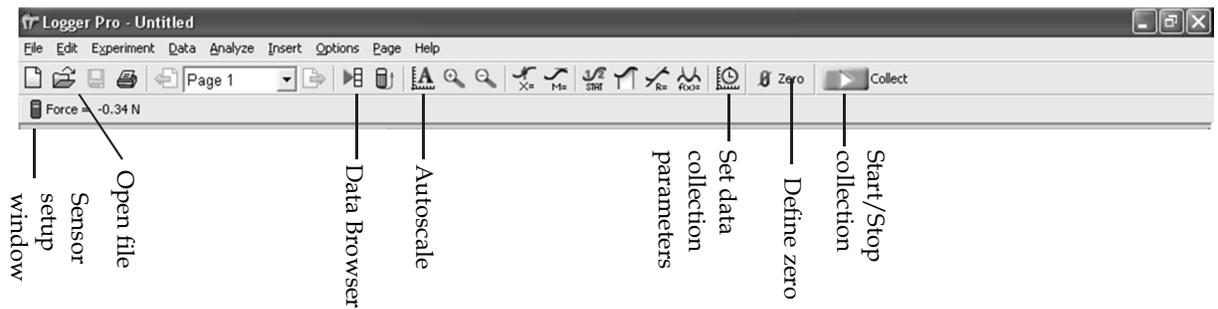
Your group is not expected to finish every problem! We would rather that you work a few problems well with complete understanding than a large number using guess-work.

You should record all measurements and calculations in your individual lab manual. (The other members in your group are expected to do the same.) Your instructor may ask to examine it at any time. You are encouraged to ask for help from your instructor at any time. You are welcome to use your textbook and class notes. Also, do not forget that you are part of a group. Bring this manual and a scientific calculator to class.

Be on time. If you come late, you may not be allowed to perform the lab.

**Academic Misconduct:** (These considerations are in addition to the general University rules.) All laboratory work will be done during the laboratory period. Do not bring completed lab work to the laboratory. The presence of completed material in the lab book can be considered evidence of intent to commit academic misconduct. Do “graded activities” only when your instructor is watching. Do not mistreat the laboratory equipment -- in particular, do not write on the apparatus. If you are uncertain what is permitted while doing a given graded lab activity, ask your instructor before proceeding.

# Introduction to LoggerPro



To start data collection, click the green “Collect” button on the tool bar. There is a delay of a second or two before data collection starts, so don’t try to time clicking the button with your actions.

Many parameters in the software are adjustable, like the sample collection time. Adjusting them is done through the menus, but some common commands and parameters are available through the toolbar. For example, click the clock icon to change the sample rate or time.

Often you will be told to load/open a file. Such files will set all the relevant parameters for the experiment.

Graph parameters can be changed by clicking on the graph to select it and using the menus, or by right-clicking on the graph. Common graph commands include *zoom* and *autoscale*.

***If you can't see your data (the graphs appear blank) or the data is a flat line at zero*** you probably need to adjust the graph scaling. Start with “Autoscale from 0”, then zoom-in or adjust the axes.

***If the “collect” button is gray and can't be clicked*** then there may be a problem with the sensor hardware. Make sure the cable to the sensor is snapped in place and likewise with the cables going to the interface box. (The cable from the sensor goes to the interface box; just follow it.) If the button is still gray, the problem might be the software. Quit out of LoggerPro and restart it.

If all else fails, ask your lab instructor for help.