Physics
Lab Book

A lab book containing records of all the laboratory work carried out in the program. The ability to keep an orderly record of your experimental work is an essential skill for any future experimental work you might do. The compilation of such a record is assessed as part of the lab component of the course.

Lab records should take a simple form. The information in the lab write-up is intended for the person conducting the experiment (you). Therefore, only those things which will ensure that you can recall the details and the results of the experiment at a later date need be included. For each lab record you should include an entry in a table of contents at the start of the lab book. As a general rule the write-up should take the following form:

1. The title and date of the experiment and all collaborators.
2. A *concise* statement of the purpose of the experiment
3. A copy of the lab hand out
4. An *organised* data table (with sample pictures or tapes affixed with tape): The table should indicate precisely what is being measured. The uncertainty of the measurements should always be recorded.
5. Processing of Data:
   (a) Graphical analysis -- this represents the best means for averaging the data and enables extrapolations and the calculation of slopes. When plotting the data keep in mind the following:
      i) If appropriate the data should be plotted in such a way that the resulting graph is linear (it is usually appropriate).
      ii) A clear title should appear at the top of the graph and both axes should be calibrated and labelled with descriptive words.
      iii) Points should be clearly identified.
      iv) Graphs should be large.
      v) The slope of line of best fit is usually an important quantity and should be shown on the graph. (Remember to include units!)
   (b) Calculations -- Details of the calculations made with the data should be shown. This should include, where appropriate, the physical equation relevant to the measurement, and any necessary manipulations. Pay special attention to units and significant figures.

6. A summary: This should include a discussion of what was learned through the experiment. An indication of possible sources of error should be made. If the experiment was unsuccessful possible explanations for this should be given. Comments on extensions or improvements to the experiment are also appropriate.

Remember the lab record is not a work of art but simply a careful record of your work. There is no need to labour for hours on the write up.