

Lab Report Writing Guidelines

Astronomy Lab

Herein you will find the details for writing a lab report. Below please find a list the sections expected and an explanation of the job done by each one. Your lab reports will be evaluated for the quality of the writing, the technical content and following the correct form as noted in what follows. A report need not be long, but it should be right and you should strive to make it so.

The lab report serves to describe in detail what you did during your work, how you obtained the data, how you reduced the raw data, and what you determined and what conclude as a result. Think of the report as a document communicating these ideas to your reader. The sections in a our lab reports should be arranged in the order listed here and below that is a description of the contents of each one:

1. Title Page
2. Introduction
3. Theory
4. (Setup and) Procedure (If a lab experiment then Setup would be part of this section.)
5. Data
6. Results and Conclusion
7. Bibliography
8. Appendix

Title page

The title page should be on a single sheet and contain the following information: title of your project, your name, partners, date, course and instructor.

Introduction

The section informs the reader in broad terms why the project was undertaken and what you set out to accomplish (other than trying to pass a class and graduate from college). Probable length is only a paragraph. This section might be only a couple of sentences.

Theory

This section is a concise description of the relevant theory. Any relevant equations should be introduced and the terms used in the report should first be identified here and defined. By custom each equation is presented as part of a complete sentence though it is set apart from the rest of the sentence on its own line. Each equation is identified by a sequential number for ease in referencing the equation elsewhere in the report. You will find examples throughout your lecture textbook and lab manual. Probable length is several paragraphs.

You will need to research these ideas in order write a thorough treatment and list your references in the bibliography along with your lab manual. This section will normally be two, three or more long paragraphs. This section is the most important one in out particular lab report this semester so give it your best effort.

(Setup and) Procedure

The reader should find all the information here needed to duplicate the work. Probable length is several paragraphs.

Follow the previous paragraph with a detailed explanation of the procedure followed. After studying the section a reader should be able to repeat the experiment in an identical manner. Special procedures used to ensure specific experimental conditions, or to maintain a desired accuracy should be noted. As with all sections of the report, the procedure describes what was done in the lab. While the lab manual may

be helpful here, copying the procedure from a lab manual would almost certainly provide an inadequate procedure section. Probable length is one or two paragraphs.

Data

In our labs the data and results sections are combined since the amount of material does not justify separate sections. The raw data obtained during the experiment are presented in this section usually in tabular form. Each table in the report should have a number that is referenced in the written text and a title. (Example: Table I. Telescope Image Intensity and Magnification.) The units of every number should be indicated. The results are often presented in the form of a plot of the data. It is treated like an illustration and has a figure number and caption in addition to the title shown on the graph page. Probable length is one or a few sentences.

Results and Conclusion

In our relatively short labs the results and conclusion sections are combined since the amount of material does not justify separate sections. Here the results are presented usually in a table after being introduced with a sentence. Then you elaborate on what you found and how it agrees or differs from what might have been expected and make any other relevant comments.

Bibliography

Using standard bibliographic format, cite all the published sources you consulted during the conduct of the experiment and the preparation of your laboratory report. This section might have only two entries, the lab manual and your textbook, depending on the lab.

Appendix

Any relevant material not included in the body of the report is put in the appendix.

Miscellaneous Suggestions

Below are some suggestions on how to format our reports. Usually reports have a standard and rigid format for the particular company or division requiring the report.

Tables, Graphs, and Drawings

All tables, graphs and drawings should be introduced by a sentence of explanation somewhere in the text. Don't expect figures or equations alone to serve where sentences and paragraphs should accompany them. Visual and verbal descriptions should compliment each other.

Typical Formatting

The text is usually single-spaced in 12 point type with a serif font such as Times New Roman. Place a single blank line between paragraphs.

The headings should be in bold type with a sans serif font such as Arial or Helvetica. The format used for the headings should be consistent throughout the report and this document is a model for appropriate heading format.

Editing

By starting early, writing a rough draft and letting the report sit for a day or two, you can approach it fresh when it is time to edit. As you edit your report, delete unnecessary words, rewrite unclear phrases and clean up grammatical errors. Don't rely only on a spell-checker. Doing so can have unfortunate results. An incorrect word but one spelled correctly will go right past the spell-checker and can turn a simple statement into an embarrassing one.