Appendix A: Lab Reports
Accepted Formats and Guidelines

Goals

The purpose of this document is to introduce the two types of lab report formats that are acceptable for submission. The point assignments for each section of these report formats will also be discussed.

Introduction

Effective communication is an integral part of everyday life. Unfortunately many students struggle with written communications such as lab reports. This is in part due to lack of organizational skills and a misunderstanding of the purpose of a lab report. It is, therefore, our goal to clarify these issues in order to make succeeding in this course as simple as possible.

Lab Report Purpose

It is common for students to wonder why lab reports are necessary. This is in fact a valid question as it may seem like showing up to class and performing the exercise should be adequate for the credit you earn academically. However, what students fail to realize is that the lab reports are actually the “meat and potatoes” of the lab itself. This is true for two main reasons: 1) technical writing, such as reports, articles, proposals, and business plans transmit information for decision making and 2) technical writing creates a permanent record of your work. The second point is especially relevant for this lab as most often the report you turn in will be the only tangible evidence of your hard work and effort. Thus, lab reports represent the primary basis for determining your grade.

Lab Report Page Setup

All lab reports must:
- A) Be typed using a word processor (preferably using MS Word)
- B) Be double spaced
- C) Use 12- point font
- D) Have 1” margins all around
- E) Use Times New Roman font
- F) Have every page numbered appropriately (excluding title page)
- G) Use appropriate headings as described above

Lab Report Format

There are two lab report formats that will be accepted throughout this course. These formats are referred to as Full lab reports and Abbreviated lab reports. These two formats are exactly the same except that the Abbreviated lab report requires slightly fewer sections than the Full lab
report. Each lab module should specify which report format is required for that lab. If no format is specified, ask your instructor to clarify before the lab begins (don’t wait until the day before the report is due).

The following paragraphs outline how your lab report should be organized, including the major section headings and the information that should be included in each section.

Format Organization

Full Lab Reports
Full lab reports contain the following sections:
1) Title Page
2) Introduction
3) Procedure
4) Calculations
5) Results
6) Conclusions

Abbreviated Lab Reports
Abbreviated lab reports contain the following sections:
1) Title Page
2) Introduction
3) Results
4) Conclusions/Discussion

Title Page (1 Page)
At a minimum, the title page contains:
1) Title or Subject
2) Course Name (ES 110 Lab)
3) Author Name
4) Date Submitted

Introduction (~2-3 paragraphs)
The introduction is usually a short section of the report that functions to orient the reader to the topic of the report. This may include relevant history, a literature review, or background information that will lead directly into the report topic.

Procedure (~2-5 paragraphs)
This is the section in which you describe the actions and equipment you used in your experiment. If you used a standard procedure, then you need not describe it in detail. Instead simply refer to the procedure citing adequate information so that anyone can find the procedure and use it. If you made up your own procedure or modified an existing procedure, then you need to describe exactly what you did in as much detail as possible. Your procedure should not be cookbook style instructions. Rather, this section should be a narrative that clearly and concisely describes what you did so that someone else could repeat what you did with little or no difficulty.
Appendix A

Calculations
If calculations were required for your report you must demonstrate step by step how you performed these calculations. This information should be included here.

Results and Discussion (1-2 Pages)
In the results section of your report, you should present the data you have collected along with a discussion of these results. You should present your data in a form that is simple, easy to understand, and requires as few words as possible. In other words, tables and graphs are much better methods for displaying your results than text. You should display only key results and omit intermediate calculations and raw data unless they have some bearing on your discussion. You should use this section to show what you found and why, and to compare these findings with published data.

It should be noted that some prefer to split this section into two parts, a results section that contains only description of the collected data, and a discussion section in which the results are interpreted or evaluated by the author. This practice is acceptable so long as absolutely all discussion is reserved for the discussion section.

Conclusion (~3 paragraphs)
This section of the report is perhaps the most important as it provides an opportunity for you to show off any important insight or conclusions you can make from your results. As a reminder, you should not provide any new information. Instead use information mentioned previously in the report to support your conclusions. Your conclusions should be presented either from most to least relevant, or in the order in which you reached them based on your results. You may also make relevant recommendations on how to improve this experiment and point out difficulties that you encountered that could have been avoided. In these labs there are often questions provided at the end of the lab. Answering these questions will often serve as a conclusion.