# MANE 4430 - LINEAR ACCELERATOR LABORATORY

# LOABORATORY REPORT FORMAT

The laboratory report is the final product of a laboratory experiment. The report is a scientific document describing the procedure used to obtain the results presented in the report. As such, the report should contain general information about the theory of the experiment and exact description of the experimental setup, procedure and analysis. The report should include all the uncertainties (or errors) in the measurements and the results.

The laboratory report should be written in font size 11 and maximum 10 pages (not including the appendix). It is suggested to have the following sections:

## TITLE PAGE

The title page provides the name of the lab experiment, the names of the lab partners, the date, and any other information your instructor requires.

## ABSTRACT

The abstract is the report in miniature. It summarizes the whole report in one, concise paragraph of about 100-200 words. As distinguished from the introduction, the abstract tells the reader what was be discussed and lays the groundwork. The abstract summarizes the report itself, not the actual experiment. Hence, you cannot write the abstract until after you have completed the report.

## INTRODUCTION

Whereas the abstract summarizes the whole report, the introduction presents the subject of the report and acquaints the reader with the experiment. Typically, the introduction states the problem to be solved or the experiment to be performed and explains its purpose and significance. It also provides whatever background theory, previous research, or formulas the reader needs to understand and perform the experiment (or solve the problem). **Usually, the instructor does not want you to repeat such information verbatim from the lab manual**; you can simply make the appropriate references to the manual. Theory: A shot description of the theory, do not copy the lab manual

## EXPERIMENTAL SETUP

Describe the experimental setup and the procedure performed to obtain the data. Annotated pictures and drawings can help.

## DATA ANALYSIS

Describe how that data was processed; **make sure to include uncertainty analysis**. This section is a full descriptive narrative. Be complete, accurate, concise and precise, listing all steps in the

correct order. State what you really did and what actually happened, not what was supposed to happen or what the textbook said.

## RESULTS

Document the results obtain and how they compare to theory, give your actual results, not what should have happened. Although results are usually presented quantitatively, you should always introduce each block of information verbally present the data in tables and plots as needed.

## CONCLUSIONS

A short summary of the experiment and results with its uncertainties and what can you conclude from it about the objective and how it compares to theory or other known values.

## REFERENCES

List the reference at the end of the report in the reference section. Use a numbered list and cite a reference by including its number in the body of the report (any section). References cannot appear in the list without a citation of the reference number in the report.

## APPENDIX

Appendices may include raw data, calculations, graphs, and other quantitative materials that were part of the experiment, but not reported in any of the above sections. Refer to each appendix at the appropriate point (or points) in your report. For example, at the end of your results section, you might have the note, See Appendix A: Raw Data Chart..