

TEMPLATE DISCLAIMER: This template is a general guide for a suggested format for your report. Your actual report MUST be based on the latest requirements laid out in the “Laboratory Requirements and Safety Manual.”

Lab # Lab Title

Your Name

Bench #

Course name

Course number (EECE.xxxx)

Date submitted mm/dd/yyyy

Due date mm/dd/yyyy

TEMPLATE DISCLAIMER:

This template is a general guide for a suggested format for your report. Your actual report MUST be based on the latest requirements laid out in the “Laboratory Requirements and Safety Manual.”

NOTE: Use this document as a template for your lab reports, or as a format reference for fonts, font size, spacing, layout, and headings. This document also contains information about what is expected from you in your lab reports.

TEMPLATE DISCLAIMER: This template is a general guide for a suggested format for your report. Your actual report MUST be based on the latest requirements laid out in the “Laboratory Requirements and Safety Manual.”

I. SUMMARY

The Summary section is a self-contained description of the lab report. The purpose of this section is for readers to understand what the rest of the document is about, or to refresh one’s memory on some of the concepts later. It should be concise, straight to the point, and cover the key concepts and findings of the lab work. Do not make it too short, or too long; optimal length – half a page.

DO:

- Include the purpose of the lab and key concepts that it covers
- Briefly include how the lab procedure was done and how does it prove or how is it related to the concepts that the lab covers
- Include some overall results and conclusions
- Spell out acronyms (“light emitting diode”, instead of “LED”)

DON’T:

- Do not refer to any other section of the report, figure, table, reference from the report. Remember, this section must be self-contained
- Do not copy the Introduction section from the lab handout
- Do not write more than half a page.
- Do not use bullet points in the Summary section. *Yes, this template used bullet points in the Summary section, however it was done for students’ convenience and normally is not acceptable.*

II. EQUIPMENT

In this section, list all the equipment used in the lab, as well as all the components. This is required for a reader or oneself to be able to repeat and verify the experiment, if needed. It is highly recommended to present this information in a tabulated form, however, make sure to have a couple sentences that introduce the table/s in that case. One can use Tables 1 and 2 to list the equipment and components used in the lab, respectively.

Table 1. Equipment Used

Equipment Type	Details	
Oscilloscope	<i>Make:</i>	
	<i>Model:</i>	
	<i>Serial Number:</i>	
...	<i>Make:</i>	
	<i>Model:</i>	
	<i>Serial Number:</i>	
...	<i>Make:</i>	
	<i>Model:</i>	
	<i>Serial Number:</i>	

TEMPLATE DISCLAIMER: This template is a general guide for a suggested format for your report. Your actual report **MUST** be based on the latest requirements laid out in the “Laboratory Requirements and Safety Manual.”

Table 2. Components Used

Component Type	Details
Resistor	470 Ω , 15% tolerance
...	
...	

III. INTRODUCTION

In this section one is expected to introduce the main concepts that are being studied, overall procedure and **how** this procedure is related to examining/proving the concepts. Make sure to provide adequate theoretical background for a reader (or your future self) to be able to comprehend the rest of the report. Assume that readers are on the same academic level as you. Optimal length – one page.

DO:

- Describe a specific concept/s being studied
- Include enough theory that provides context to the lab report
- Include theories and equations that were used in the lab
- Number all equations
- Describe the overall procedure in a few sentences (this does not need to be too detailed)
- Explain how the lab procedure is related to the concepts that you are learning.

DON'T:

- Do not copy the introduction from the lab handout
- Do not include any results or conclusions

IV. CIRCUIT DESCRIPTION

All the labs are based on electronic circuitry that one assembles on a breadboard. The following are expected to be included in this section:

- 1) **Multisim schematics**
- 2) **Components that were used, and how they were connected:**
 - a. This is a description of the circuitry that is required for a reader to be able to repeat the lab, if needed

TEMPLATE DISCLAIMER: This template is a general guide for a suggested format for your report. Your actual report MUST be based on the latest requirements laid out in the “Laboratory Requirements and Safety Manual.”

- b. This information must be presented in a pictorial form as a schematic drawn using Multisim. A picture of the breadboard-assembled circuit along with verbal description is also welcome and in some situation, required.
 - c. When there are multiple circuits that are the same but with minor changes, one should only describe what was changed instead of describing the circuit all over again.
- 3) How does the circuit function?**
 - a. Explain how the circuit is expected to behave
 - b. Include Multisim simulations of the circuit
- 4) How does this circuit illustrate the concept that is being studied? One can also propose how it can be improved.**

Make sure to clearly indicate component values, part numbers for active devices, as well as polarities when appropriate.

V. MEASUREMENTS

This section is for measured results only. Do not make any conceptual conclusions in this section. However, **do introduce** the tables and figures and include some basic description of the tables and figures. What is the reason for separating measured results from the analysis of those very conclusions? This is due to a common convention that makes it easy for a reader to analyze big amounts of information. The lab report rules will help you to get used to the professional standards.

Reading the entire report takes time, and proper (or improper) grouping of the information can help (or hinder) a reader. *For example, one of the labs for Electronics II students consists of constructing a simple sound amplifier circuit; this circuit is perfectly usable in real-life projects. If a student would wish to use the circuit after finishing the class, then already knowing that the circuit works, he/she will want to look-up the specific performance characteristics. Now that student does not have to read the entire report to find the required information but can directly go to the Measurement section and make an informed decision.*

DO:

- **Use tables and figures to present your data whenever possible**
- Introduce and describe tables and figures
- Use spreadsheets, or any math software to automate your calculations
- Show percent error valubles whenever it is adequate
- Show calculated and measured results side by side for the ease of further comparison
- Find the most optimal way to present your data

DON'T:

- Do not include any conceptual conclusions

TEMPLATE DISCLAIMER: This template is a general guide for a suggested format for your report. Your actual report **MUST** be based on the latest requirements laid out in the “Laboratory Requirements and Safety Manual.”

VI. DISCUSSION

This section is expected to have an extensive critical analysis of the measurements and their meaning. One is expected to connect theory to the results and elaborate the related concepts. Here one refers to tables and figures from the Measurements section, connects and compares that information, and draws conclusions. If there was a mistake in the measurements or some significant percent error, that fact has to be clearly stated in this section and some explanations for that need to be provided. If one put enough effort into the lab, got some results significantly different from what was expected, but provided some reasonable explanations for that to occur, that student will still get a full credit. Thus, do not try to “adjust” your data to “fit” the theory; students caught manipulating their data will lose a substantial chunk of points from their grade.

It is expected that this section be at least one page.

VII. CONCLUSION

Like the Summary, this is a self-contained section of the report, meaning that you do not refer to any other part of the document. Here one is expected to state what one aimed to examine, how did one examine that concept, is the measured data enough to verify or prove the concept? Optimal length of this section is half a page.

VIII. QUESTIONS

Some of the labs have questions either throughout the procedure, or at the very end. **ALL** laboratory questions **MUST BE** answered in this section. If one answered a question in the body of the report, one must repeat the answer in this section. Make sure to include the number of the question, or the specific step in the procedure where it was asked.

REFERENCES

References must be numbered and listed on a new page. When you base some of your thoughts on claims from a scientific or an academic text, you must cite the source. Do not quote. Body of the report must contain pointers to the used references. Use either IEEE or APA format.