

Weekly Team Report

Introduction

Technical writing and communication are critical skills in the world of engineering and are often the only difference between successful and un-successful products. Developing your ability to simplify, clarify, and generally communicate your ideas to engineers and non-engineers alike is invaluable. Such documents come in many forms: contracts, policy documentation, product packaging, user manuals, technical reports, and research papers to name a few. Our focus will be on technical reports, which are documents intended to inform the readers of your work, while providing sufficient context and support to persuade them of their validity.

Team Learning Objectives

As a team, provide

- Clear and concise introduction that includes the purpose of the prelab and in-lab experiment, relevant background information, and a well-defined hypothesis.
- Detailed and accurate description of the experimental procedure, including materials used and steps followed. Any deviations or modifications are explained.
- Presentation of results (data) in appropriate formats (tables, graphs, etc.), including accurate measurements and observations.
- Thorough analysis of results, including calculations, comparisons, and explanations of trends or patterns, and exceptions seen by any teammate. Results are linked to the hypothesis and broader concepts.
- Well-summarized conclusion that restates the hypothesis, discusses whether it was supported, and suggests potential improvements or future experiments.
- Well-organized and clearly written report with appropriate use of headings, subheadings, and coherent paragraphs. Language is precise and easy to understand. Virtually error-free in terms of grammar, spelling, punctuation, and formatting.

Procedure

Using 1 to 3 pages, generate a short report for this past week's lab. For this report, you should communicate the following core ideas.

- 1) An introduction that provides the relevant **theory** provided by lecture, lab, prelab, etc., to set the purpose of the lab as well as outline the hypothesis of what will be shown by the experiments.
- 2) The methodology of any **measurements** done to collaborate the theory. Include **Application** of the theory and/or observations regarding real-life limitations of a model of any electronic device.
- 3) Results (the data collected) are succinctly shown in an appropriate format. Since the team of researchers have each taken their own data, here you may present the data of just one student. Be clear whose data is presented.
- 4) Analysis should not only discuss how the data of one student supported or conflicted with the hypothesis, but also comment on variations seen with the experiments of the other teammates (although the details of those measurements need not be presented in detail).
- 5) Conclusions will provide a statement regarding the original hypothesis, evidence in support and/or disagreement with that hypothesis, and suggestions on future experiments that might be warranted to further investigate.

At the end of the report, provide a list that states explicitly how each team member contributed to the report. Of course, also pay attention to formatting, grammar, and clarity within your document.

Rubric

A well-structured and comprehensive lab report rubric helps to provide clear expectations and guidelines for both students and instructors. You can find the rubric in GradeScope under Weekly Team Report.

Notes:

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Lab Report Rubric

Criteria	Excellent (20)	Good (15)	Satisfactory (10)	Needs Improvement (5)	Inadequate (0)
Introduction	Clear and concise introduction that includes the purpose of the experiment, relevant background information, and a well-defined hypothesis.	Introduction is present and provides most of the required elements but may lack clarity or conciseness.	Introduction lacks some key elements and may be unclear or too brief.	Introduction is unclear, missing key elements, or absent.	No introduction provided.
Methodology	Detailed and accurate description of the experimental procedure, including materials used and steps followed. Any deviations or modifications are explained.	Methodology is mostly clear and accurate, but with some minor omissions or ambiguities.	Methodology is present, but with significant omissions, inaccuracies, or lack of clarity.	Methodology is unclear, incorrect, or insufficient.	No methodology provided.

Notes:

Criteria	Excellent (20)	Good (15)	Satisfactory (10)	Needs Improvement (5)	Inadequate (0)
Results	Presentation of results (data) in appropriate formats (tables, graphs, etc.), including accurate measurements and observations.	Results are mostly complete and accurately presented, with minor errors or omissions.	Results are partially presented, with significant errors, omissions, or unclear presentation.	Results are unclear, heavily flawed, or missing.	No results presented.
Analysis and Interpretation, Discussion	Thorough analysis of results, including calculations, comparisons, and explanations of trends or patterns, and exceptions seen by any teammate. Results are linked to the hypothesis and broader concepts.	Analysis is present and covers most relevant aspects, but with some errors or lack of depth.	Analysis is limited in scope, contains significant errors, or lacks clear connections to the hypothesis or concepts.	Analysis is inadequate, incorrect, or missing key points.	No analysis provided.

Criteria	Excellent (20)	Good (15)	Satisfactory (10)	Needs Improvement (5)	Inadequate (0)
Conclusion	Well-summarized conclusion that restates the hypothesis, discusses whether it was supported, and suggests potential improvements or future experiments.	Conclusion restates the hypothesis and provides a basic assessment of its support but lacks depth or suggestions for improvement.	Conclusion is brief and lacks clarity in restating the hypothesis or addressing its support.	Conclusion is unclear, incomplete, or does not effectively address the hypothesis.	No conclusion provided.

Notes:

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Criteria	Excellent (20)	Good (15)	Satisfactory (10)	Needs Improvement (5)	Inadequate (0)
Writing Clarity, Organization, and Grammar	Well-organized and clearly written report with appropriate use of headings, subheadings, and coherent paragraphs. Language is precise and easy to understand. Virtually error-free in terms of grammar, spelling, punctuation, and formatting.	Report is organized with most necessary elements but may contain some instances of unclear language or organization. Few minor errors that do not hinder understanding. Few minor grammatical errors that do not hinder understanding.	Report lacks clear organization and may have frequent instances of unclear language, affecting overall comprehension. Noticeable errors in grammar, spelling, punctuation, or formatting that may slightly affect comprehension.	Report is poorly organized, with unclear language throughout, significantly impacting comprehension.	Report is incoherent and unreadable.

Total Points: 120

Note: We may need to occasionally adjust the point values and criteria based on the complexity of the lab and the specific learning objectives.