

ENGR 100 - Final Bridge Report

Group Assignment

Your team is responsible for composing a single final report that describes in detail your bridge design. The audience of this report is the instructor and TA, and the tone should be formal. The purpose for writing this report is to document the design and performance of your prototype and final bridge.

Report Format

The technical report should be a professional document. Graphs, tables, and drawings should be used to clarify the text. The three main parts of a technical report are shown below in Figure 1:

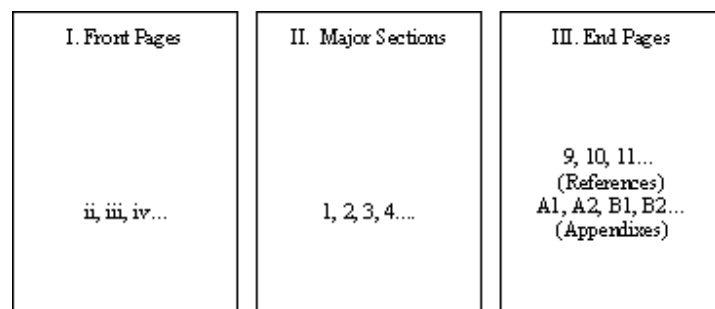


Figure 1. Three Main Sections of a Final Report

I. FRONT PAGES

The front pages include the Cover Page, Table of Contents, List of Figures, and List of Tables. The page numbers are Roman (e.g., i, ii, iii, etc.) and there are no numbers on the cover page (although it is considered the first page).

- **Cover Page**

The first page of the technical report should be unnumbered and includes the name of the report, team name, names of all group members, your affiliation (i.e., ENGR 100, Section B), and the date. Each item should be centered and separated by enough space to fill the whole page and give the cover page a good appearance.

- **Table of Contents**

To introduce each new section, use a header (e.g. "1.0 Introduction") and an introductory sentence explaining what this section will be about. Suggestions for the contents of your team's bridge report are as follows:

0.0 Executive Summary

The executive summary is a report summary which includes information from each section of the report. The purpose of the executive summary is to allow the reader to learn the major ideas and findings without having to read the whole report. Generally an executive summary is written after the report is finished and is approximately 10% in length compared to the whole report (i.e. 1 page long for a 10 page report).

1.0 Introduction

This section briefly lays out the project and the requirements (i.e., the problem definition and constraints). It also identifies the goals of the report and what types of information are included in the report.

2.0 Prototype Testing

This section describes the analysis leading to the final design. It emphasizes the design process based on theory, testing, and good engineering reasoning.

In the prototype testing, you should include the following sections:

- **2.1 Component Analysis**

Here, give a short summary (approx. one paragraph) of the results from the relevant component tests.

- **2.2 Prototype Analysis**

In this subsection, describe how your team made the decision to build the prototype that you did. Describe or show at least three design ideas your team considered early in the process. Then explain what criteria were important (bridge weight, strength, ease of construction, etc.) and why your final prototype was the best choice. If you used West Point Bridge Designer Software to help in the design process, include details in this section too.

- **2.3 Prototype Performance**

Present the results of the prototype test including the score (wt. held/wt. of bridge). How did your bridge perform during the test? Where did it fail (use arrows to show in pictures)? Identify parts of the bridge that were very strong and others that were weak.

3.0 Final Design

This section justifies the final design. The idea is to defend key features of the final design based on the results of Prototype Testing.

In the final testing, you should include the following sections:

- **3.1 Revision and Final Design Construction**

This section describes your final bridge design. Here, you should discuss the factors that entered into your revised design. Use drawings to fully describe your final bridge design layout. Present enough detail so that the reader can clearly see the difference between the prototype and the final design (side by side pictures are often helpful).

- **3.2 Final Design Performance**

Briefly describe the performance of your final bridge. Report the score and describe whether the improvements you included during the redesign performed as planned.

4.0 Conclusions and Recommendations

Support the purpose identified in the introduction by pulling together the results and findings from previous sections of the report. Emphasize the major points you feel are important. Discuss recommendations for improving the final design. This section should be a brief, bottom-line summary and not include any new information not already discussed in detail in the report.

III. END PAGES

The end pages include the references and appendixes.

- **References**

If you used any outside resources and mentioned them in this report, compile a list of references. Referencing should follow a format like you may encounter in your textbooks.

- **Appendixes**

In Appendix A, Team Member Contributions, list your team members and contributions (identify specific sections each person wrote or edited and project tasks completed). Create additional appendixes as needed. See Figure 4 for a sample:

References	Appendix A Title	Appendix B Title
13	A1	B1

Figure 4. Sample End Pages

Grading

The assignment will be graded according to the following criteria:

Format		Points	10
Front pages	# in Roman(I,ii,iii,...)		
Cover page	<ol style="list-style-type: none"> 1. no #. 2. name of report, team name, names of members, affiliation, date. 3. all Centered. 	1	
Table of contents	A list of major sections w/ page #.	1	
List of figures	A list of figures w/ page #.	1	
List of tables	A list of tables w/ page #. Not needed if less than 3 tables.	1	
Major sections	<ol style="list-style-type: none"> 1. # in Arabic(1,2,3,...) 2. Header for each section? <ul style="list-style-type: none"> - Executive summary - 1.0 introduction - 2.0 prototype testing <ul style="list-style-type: none"> 2.1 Component testing 2.2 Prototype analysis 2.3 Prototype performance - 3.0 final design <ul style="list-style-type: none"> 3.1 Revisions and final design construction 	4	

	3.2 final design performance - 4.0 conclusions & recommendations		
End pages/reference		1	
Appendix	Looking for individual contribution on the report.	1	
Writing styles		Points	10
	1. spelling error, grammar errors	1	
		1	
	2. consistency of figure, tables	1	
		1	
	3. labeling for figures, tables	3	
	4. Titles for figures, tables	3	
	5. Transitions words used between sections?		
	6. Adequate figures/tables for explanation?		
Contents		Points	30
Executive summary	Show major ideas & findings of this report without the need to read the whole report?	5	
Introduction	Layout the project & requirement?	4	
	(Problem definitions, constraints, goals, info to be included in this report.)		
Prototype testing	1. Process of the prototype.	8	
	2. Results of the component test		
	3. Design & Reasoning for prototype		
	4. Prototype performance		
	5. Accuracy of the statements		
Final design	1. Reasoning of changing your design.	7	
	2. Result of the final bridge		
	3. Accuracy of the statements		
Conclusions/ recommendations	1. Major results/ findings from prototype & final testing.	6	
	2. Recommendations for improving final design.		
	3. Accuracy of the statements.		
Final grade		50	