

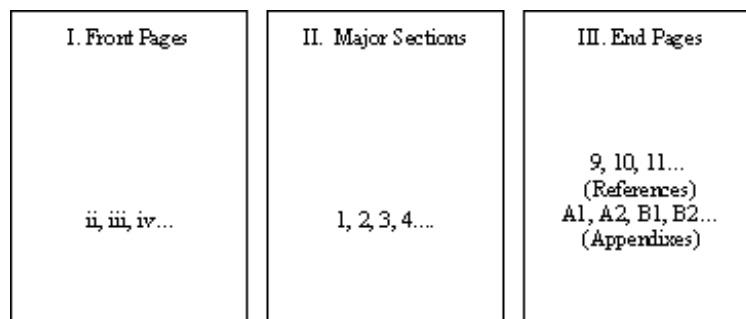
# Rube Goldberg Final Report Format

## Group Assignment

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

## Report Format

The technical project report should be a professional document, generated using a word processor. Your report should contain graphs, tables, and drawings to clarify the text. Remember to reference all ideas, figures, or quotes that you take from other sources. The three main parts of a technical report are shown in Figure 1 below.



**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 include the name of the report and your Rube Goldberg machine, 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**

This is a listing of the major sections in the report and the page numbers where they begin. The table of contents does not list itself but includes the page numbers of the pages that appear in the front of the report, major sections, and appendixes.

- **List of Figures**

This is a list of all of the figures in your report and the page numbers where they are found. Do not include this section unless you have at least three figures in your report.

- **List of Tables**

This is a list of all of the tables in your report and the page numbers where they are found. Do not include this section unless you have at least three tables in your report.

The following is a sample of the front pages (Figure 2).

<b>Cover Page</b>	<b>Table of Contents</b> List of Figures... iv List of Tables... v Executive Sum... 1 Introduction... 2 (list other sections) Appendixes Appendix A G... A1  ii	<b>List of Figures</b> Fig. 1. Graph... 3 Fig. 2. Proto... 6 Fig. 3. Final... 7  iv	<b>List of Tables</b> Table 1. Wt... 2 Table 2. Memb... 5 Table 3. Cost... 8  v
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**Figure 2.** Sample Front Pages.

## II. MAJOR SECTIONS

This is the main part of the report. The page numbers begin with one and are numbered in Arabic (e.g., 1, 2, 3, 4, etc.). After the executive summary, each major section should be numbered and titled as shown in Figure 3 below.

<b>Executive Summary</b>  1	<b>1.0 Intro.</b> xxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxx <b>2.0 Proto.</b> xxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxx 2	<b>2.1 Comp</b> xxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxx <b>2.2 Proto Analy...</b> xxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxx xxxxxxxxxxxxxxxx 3
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**Figure 3.** Sample Major Sections.

To introduce each new section, use a header (e.g. "1.0 Introduction") and an introductory sentence (called transition) explaining what this section will be about. Suggestions for the contents of your team's Rube Goldberg report are described below.

## **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, specifications, and constraints). It also identifies the goals of the report and what types of information are included in the report.

## **2.0 Problem Analysis**

This section should describe your analytical approach to the Rube Goldberg machine design. Justify the key features of your design using theory or good engineering reasoning. Then explain what criteria was important (reliability, budget, weight, strength, ease of construction, etc.) You should also describe the tools, simple machines, energy types, and energy conversions that your team considered in the design process. This section should end with a clear statement, including specific numbers, of your conceptual design.

## **3.0 Machine Description**

This section presents details of your Rube Goldberg design. Include drawings that portray the exact shape of the cuts, angles, bevels, etc. Explain how the pieces will be joined together and the order of assembling them. This section is a roadmap that describes how to build the machine. It should include graphs and drawings to help illustrate your project. Make sure to name each part and label simple machines used in your design. Incorporate description of the flow of the machine when it runs. Make sure to identify all steps.

### **3.1 Prototype Testing and Revisions**

Because engineering design is an iterative process, it is likely that your first prototype was not working very well. In this section you should describe the difference between your prototype and the final design. Identify at least three problems in your prototype and explain how you overcome them in your final machine. If your team has performed any component test, you should describe the results here and explain how what you learned affected your final design.

## **4.0 Performance Results and Discussion**

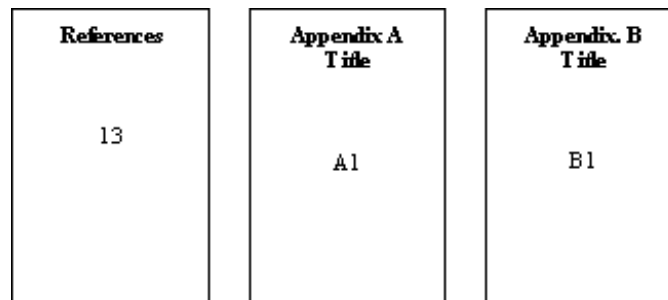
This section briefly presents the results of the performance test and the results of the competition. You should compare the overall performance against that projected in your analysis. Did the machine perform better or worse than expected? What caused the machine to fail to compete successfully in the competition? With the new information that you have acquired from the competition, how would you change your design if you had to do it all over again?

## 5.0 Conclusions and Recommendations

Bring out the major points that you feel are worth emphasis. Make appropriate recommendations. This should be a brief, bottom-line summary. In general, you do not bring anything new into the conclusion section. Instead, simply restate the key points from the body of the report.

## III. END PAGES

The end pages include the references and appendixes. See Figure 4 for an example.



**Figure 4.** Sample End Pages.

- **References**

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

- **Appendices**

Include anything that you think is appropriate but you do not want to clutter your report with. For example, you could include more detailed design drawings of the machine or the program you wrote. The last pages of the appendix should be a brief, individual, signed paragraph from each team member that states that member's specific contribution(s) to the overall effort, including analysis, testing, and writing.

## Report Grading

The grading of the assignment will follow the evaluation table given below:

<b>Evaluation Criteria</b>	<b>Points</b>	<b>Score</b>	<b>Comments</b>
<b>Format</b>	20		Is the report format correct and professional? Are there any mistakes in the tables or figures? Are the Tables and Figures labeled correctly and referred to by name in the text?
<b>Introduction</b>	10		Is the most important report information highlighted in the executive summary? Does the introduction describe a clear report purpose?
<b>Content</b>	35		Is any information missing? Are the findings and statements accurate? Are the ideas fully developed? Are pictures placed effectively to explain text?
<b>Conclusion</b>	5		Does the conclusion address the main points?
<b>Transitions</b>	4		Are clear transitions used between sections and ideas?
<b>Writing Style</b>	20		Is the report carefully proofread (minimal errors in spelling, grammar, punctuation, etc.)? Is the writing concise and tone formal?
<b>Appendix</b>	6		Individual Contribution
<b>TOTAL</b>	100		