FLORIDA ATLANTIC UNIVERSITY™

College of Engineering & Computer Science

Engineering Design - ED2 Report Guidelines

Project reports generally follow the typical structure of scientific and technical research reports: Introduction, Methods, Results, Conclusions, and Recommendations. Although other formats are acceptable, most readers anticipate this format and get their bearings most quickly when it is followed. The following template adopts this standard organizational structure. The headings are those recommended for your own Project Report, but you may have to make occasional deviations from this template to adapt to the needs of your own project.

Outline of Contents for the Report

Your report should contain the following parts or sections:

Cover
Letter of Transmittal
Title Page
Executive Summary
Abstract
Acknowledgments
Table of Contents
List of Figures
List of Tables
Main Body Of Project Report
I.   INTRODUCTION
      A- Statement of the Problem
      B- Background
      C- Purpose of Project and Overview of Project Report
II.   METHODS AND DESIGN APPROACH
III. RESULTS
      A- Technical Description of (name of device or product)
      B- Specifications
      C- Construction Methods
      D- Operation
      E- Testing and Calibration
      F- External Constraints
IV.   CONCLUSIONS
V.   RECOMMENDATIONS
VI.   REFERENCES
APPENDICES
      Appendix A - Original Statement of Work or RFP
      Appendix B - Detailed technical documentation
      Appendix C - Student resumes

Explanation of Each Section of the Report

This section explains the purpose and contents of each section of the Report.

Cover

The Cover should contain the title of the project, followed by the date of submission, and then followed by the names and affiliations of the submitters, all of which should be centered in the page. The Cover may be printed on colored paper of slightly heavier stock.

Letter of Transmittal

A brief single-page business letter addressed to the liaison at the sponsoring company informing him or her of the enclosed Project Report being delivered. You may wish to restate the design problem here and point out the essential nature of your solution.

Title Page

Use a format similar to those used for project update presentations.

Executive Summary

The Executive Summary is a one page section which summarizes in bullet form the essential conclusions and recommendations of your work. It is non-technical in nature and is intended for reading by management who wants to know what was accomplished, not how. Explain the purpose and scope of your Project Report very briefly in this section. Write the Executive Summary after you have finished drafting the body of the Project Report so that the report's recommendations are accurately represented.

Abstract

The Abstract is a succinct statement that comprises the essential content of the Project Report. It will be technical in nature, intended for reading by an engineer or computer scientist. The Abstract summarizes the results of the design project without explaining why design decisions were made, or justifying the findings.

Acknowledgments

The Acknowledgments should recognize the assistance given by the liaison at the sponsoring company, the project faculty advisor, the institutional support, and any other individuals who rendered significant assistance.

Table of Contents, List of Figures, List of Tables

The Table of Contents, List of Figures, and List of Tables should be self explanatory, and most modern word processors can generate them for you.

Main Body of Project Report

INTRODUCTION

Statement of the Problem

This section can usually be reproduced directly from your proposal, completed at the end of fall term. The purpose of this section is to listen to the needs of the sponsoring company and to show that you understand the problem from their perspective. Since the 'conclusions' section of your Project Report

will evaluate your solution in light of the needs expressed in the original RFP, this section is crucial to your entire document.

Background

This section, too, can be taken directly from your proposal unless new or revised information gives you a reason to change it.

Purpose of Project and Overview of Project Report

Summarize the purpose of your project in one or two sentences: "The purpose of this project was to develop an effective means of solving problem ABC by designing device XYZ." Your purpose statement is simply an expansion of your title into sentence format. Following your purpose statement, give a statement which describes the shape or structure of the rest of the Project Report. When readers can anticipate the shape of what is coming they can devote full attention to the content. This section follows the advice "Lay out the whole before presenting the parts."

METHODS AND DESIGN APPROACH

Your purpose in this section is to show the logic in the way that your design team attacked the problem. Your goal here is to explain the sequence of problem-solving steps that your team went through. Show your clear engineering thinking when describing your methods. Most design projects require similar sequence of problem solving steps, which can be explained to the reader using the following organizational frame:

First, criteria for a successful solution were established. [Describe criteria and provide your rationale for selecting them.]

Next, we examined several alternative solutions including X, Y, and Z. [Describe each one.]

Approaches X and Y were rejected on grounds that _____ [explain rationale for rejecting X and Y and choosing Z]. For technical data leading to the rejection of Approaches X and Y, see Appendix B.

Having selected Approach Z, we then designed the project and built and tested a prototype. [Explain any features of this stage of the process that seem essential.]

RESULTS

The purpose of this section is to describe in detail the actual device or product you produced. The number of subheadings of this section depends on the complexity of your product and on the kinds of information that you think your sponsoring company will need to know. Group your explanations by category and give each category a clarifying heading. Here are some typical headings that will fit most projects.

Technical Description of _____ (name of your device or product)

Give a technical description of whatever you produced. Reference all figures related to schematics, etc. See information about figures and tables in the proposal guidelines.

Specifications

Tell what your device does at what levels of precision.

Construction Methods

Explain how your device is made, what its materials are, etc.

Operation

Explain how your device works; make your instructions clear to a new user.

Testing and Calibration

How did you test your device and how did you calibrate it?

External Constraints

The report must address economic, environmental, sustainability, manufacturability, ethical, health and safety, social, and political constraints of the project.

CONCLUSIONS

From a managerial standpoint, this is probably the most important section of your Project Report. Technical and business managers frequently read this section of the Project Report first even though it comes near the end of the document! Your goal here is to evaluate your original criteria. How well does your product actually work? Does it solve the problem that the company wanted solved? Be candid and honest here. What are the weaknesses and limitations of your product? What parts of the original problem were more difficult than anticipated? What hopes for your solution didn't turn out? In short, this section may say, "We solved part of your problem but not other parts," or "Our solution finally didn't work, and we didn't solve your problem at all."

RECOMMENDATIONS

The people who read the Conclusions and Recommendations sections of your Project Report are power people inside their company! In light of your conclusions, what recommendations do you have for the company? Should they begin immediate production of your prototype? Should they do further testing of your prototype? Should they put out an RFP for further research? Should they do a market study? Should they look for more cost effective ways of building a device similar to your prototype? Much of your future reputation as a design team rests on recommendations.

REFERENCES

Follow the Project Proposal guidelines.

APPENDICES

Appendices A (original RFP), and C (student resumes) can follow what you did in the original proposal with suggestions from your faculty advisor.   In Appendix B include the theoretical and experimental developments, technical details, diagrams, and tables that were not included in the main body of the Project Report. Work with your faculty advisory, and your liaison, to determine what goes in Appendix B.