

# CS 497 - Senior Design Project II

## Final Report Guidelines

The final report is a formal communication that both fulfills a contract obligation and tells a story. Since the final report is, in some cases, the “product” of the project effort, and in all cases the official record of that effort, it should be prepared carefully. It must be complete enough to account for all of the essential information pertaining to your project, so that you or anyone else could reconstruct and understand what has been done. It must also be accurate; reality must not be warped either by inflation or by depreciation. Mistakes or failures should be explained, but not covered up. Tell it like it was.

Report content will vary as widely as do types of project activities; some will be mostly data or code, others will be mostly words. You may have tables and graphs, or you may have none. Do whatever you need to do to tell a story that is understandable, complete, and accurate. The sections of a common report format is presented below.

### **Title Page**

Title page should be in a format suitable for the type of binding to be used. E.g., if a report cover with a “window” is used, the title of the project should appear there. The title page should indicate the name of the project, the project engineer(s), the sponsor, the project advisor, the University, and the date.

### **Acknowledgements**

Give credit for any help you received in this section. This includes significant advice, data, equipment, labor, and so forth. This is not a book or a dissertation, so do not thank your spouse or special friend for their great patience, tolerance, and understanding. Dedications are similarly out of place.

### **Table of Contents**

List the title and the starting page number of the major sections of the main body, appendices, and whatever else follows the table of contents. It should be obvious that this index (and the next two sections) must be done after the rest of the report has been completed.

### **List of Figures**

Each figure (anything drawn or reproduced from photographs or screen images) should be numbered. Give the number and title of each figure together with its page number. The same title

should be used on the figure itself as a caption written under the figure. A figure should be inserted into the text at the first available space occurring after it is mentioned.

### **List of Tables**

Each table should be numbered, separately from figures. (A table is usually composed of words and/or numbers in a table format.) Give the title and number of each table together with its page number. The same title should be used on the table itself as a caption written above the table. A table should be inserted into the text at the first available space occurring after it is mentioned.

### **Introduction (or Summary)**

Present a quick rundown of the entire design process: the motivation, problem definition, approach, and results. By giving the reader a good, overall “big picture,” you will vastly simplify their task of reading and understanding all that follows.

### **Statement of Problem (or Background)**

Give a more detailed statement of the problem as it was presented and as it has evolved to the state to be considered in the design process. Include any technical discussions that help bring the problem into focus.

### **Design Approach**

Tell how you decided to attack the problem. Include the methods, algorithms, etc. used in the various components of the overall task. Relevant technical discussions should be inserted as needed, but if they are too bulky or do not continue the flow of discussion, put them into appendices and cite accordingly.

### **Results**

Tell what came of it all. Give the punchline first, then the details. It is a good idea to present the results of component tasks in the same order used to discuss those tasks in the design. Use visual aids wherever appropriate to add clarity to an otherwise obscure discussion. Small code samples are appropriate here, but code listings should be put in appendices.

### **Conclusion(s)**

The reader may wonder “so what?”; this section should tell them. If you have recommendations to make, you can add another section with that title, or you can include them here. Implications for future work can also be presented here or in a separate “Future Work” section. Note that any ideas you have for how to do the follow-on work are ordinarily reserved for another proposal. If additional work seems appropriate, suggest it to the sponsor.

### **References**

Provide a complete list of all references cited in the report in a suitable format.

## **Appendices**

Extensive side discussions, lists of data, code listings, etc. are packaged by topics in separate appendices. The order of presentation should follow the order in which they were mentioned in the main body of the report. Note that it is not necessary to provide the entire code listing for a project.

## **Notes on preparation**

The prose in a technical report should follow standard English usage for this type of document. In particular, it should not be “folksy” in tone except in rare cases where such language would enhance the reader’s understanding. Likewise, use of contractions is generally discouraged. The report should use technical vocabulary as appropriate, but also define them on first use.

Each page of your report should be numbered though the page number is not printed on the title page of the report. It is common for the pages up to the introduction to be numbered using lower case Roman numerals with the rest of the document numbered in Arabic numerals starting again with page 1. Other formats number all pages using Arabic numerals with the title page as page 1. Page numbers should be printed in the top or bottom center, or the top or bottom outside corner.

A good outline is indispensable in turning out a coherent report; it will keep you from omitting things or repeating yourself. A detailed outline is especially valuable if you parcel out sections in a team project. A team report written in this manner will need to have one person do a rewrite to make the style and vocabulary consistent.

When you have “completed” the report, it is helpful to put it aside for a few days and then read it in its entirety. Not only will you catch errors that were overlooked in proofing, but you may also become aware of omissions, redundancies, and obscurities. An “outside” reader—someone unfamiliar with the project—can provide another good check on clarity.