

GROUP FINAL REPORT GUIDELINES

Overview

The final report summarizes and documents your group's work and final results. Reuse as much of your past reports as possible. As shown in Table 1, much of the final report has already been developed in your past reports. Likely, the majority of your time will be spent on integrating the write-ups from individual team members, documenting the final design, presenting a clear set of test results from your final system testing, and assessing your work.

Section	Project Proposal	Progress Reports	Final Report
Introduction			
Background and Motivation	✓		✓
Project Goal	✓	✓	✓
Project Requirements	✓	✓	✓
Technical Design			
Possible Solutions and Design Alternatives	✓		
System-level overview	✓	✓	✓
Module-level descriptions	✓	✓	✓
Assessment of Proposed Design	✓		✓
Work Plan			
Work breakdown structure (WBS)	✓	✓	
Gantt chart	✓	✓	✓
Financial plan	✓	✓	
Feasibility Assessment (resources, risks)	✓		
Testing and Verification			
Validation and Acceptance Tests	✓	✓	✓
Module-level test results		✓	✓
System-level test results			✓
Summary and Conclusions	✓	✓	✓

Table 1: Comparison of report contents.

Even if your final project does not meet all its goals, do not resort to padding or rambling. Your final report will not be judged on length but on the degree to which you have demonstrated that your project goals and requirements have been met, and how clearly your work has been documented. Save your time by keeping the final report concise, clearly summarizing the actual work done, and presenting your results and achievements honestly and positively.

Support your claims. Open-ended statements about the success of your project should be avoided.

Individual marks will be assigned to students. Therefore, if everyone's responsibility is stated clearly throughout the final report, you will not be penalized for the incomplete work of your team member(s). However, it is common in a group project that some tasks are interrelated, and it may not be possible to completely decouple yourself from your team member(s)' work.

Aloha and Gordon Slemon Design Awards

If your project has been a success and you wish to compete for one of these top design awards, please see the website for details or click [here](#). Applications for either award must be emailed to [Administrator #2](#). The deadline for both awards is coincident with the submission of the Final Report.

Report Format

For general information, see the [Document Guidelines](#). The following is a check list of all the required items in the order which they should appear:

- Evaluation forms (1 page per student)
- Front material: Cover page, Report Attribution Table, Release Consent Form (3 pages)
- Executive Summary (1 page)
- Group Highlights and Individual Contributions (1 page for the group plus 1 page per student)
- Acknowledgements (1 page)
- Table of Contents (1 page)
- Introduction (approx. 3-7 pages)
- Final Design (approx. 5-10 pages)
- Testing and Verification (approx. 3-7 pages)
- Summary and Conclusions (approx. 1-2 pages)
- References
- Appendix A: Gantt Chart History
- Appendix B: Validation and Acceptance Tests (copied from Project Proposal)
- Other Appendices

Although, there is no specified maximum limit to the appendices, usually the appendices should not be much larger than the body of the report. We do not expect you to provide a complete set of documentation of your design. Instead, focus on the key details that would help others understand your design, replicate your work, and validate your results.

Notes:

- One report per team (but the writing should be shared roughly equally)
- **Each section/sub-section of the report should identify the primary author**(e.g. '3.1.2 Graphical User Interface (author: J. Smith)').

Section Descriptions (not covered in the [Document Guidelines](#))

A. Group Highlights and Individual Contributions

This section highlights the final accomplishments of the group and each individual team member. The one-page 'Group Highlights' summary can be an updated version of the 'Group Progress Summary' from the last Progress Report, with the emphasis now on the final results and less on the work plan or tasks listed in the Gantt chart.

Similarly, the one-page 'Individual Contributions' summary for each team member can be an updated version of the 'Individual Progress, Work, and Contributions' section from the last

Progress Report, with the emphasis now on your final personal contributions and achievements and less on the detailed duties outlined on the Gantt chart. The key is to present ‘the big picture’.

B. Acknowledgments

Use this section to thank the people who helped you and supported your project.

C. Introduction

Begin the introduction with a brief paragraph stating the purpose of this report. Below is a generic example that would require adaption and tailoring to your specific project:

This report summarizes the motivation, design, implementation and testing of a <project> as part of our final year design project course ECE496. The report concludes with suggestions of improvements and future work.

Next, include updated versions of the following sections that were developed in your Project Proposal:

Background and Motivation: Update this section from the original version to better reflect your final project and results. Make sure to provide adequate references from your background research.

Project Goals and Requirements: Attach the last updated version from Appendix B in the Individual Progress Report. There should be few changes as you’ve have had repeated opportunities to update your project requirements throughout the year. Make sure the requirements are placed in a table with each requirement numbered for later referencing in Section I, ‘Testing and Verification.’

D. Final Design

This is the main chapter of the report where you document your final design. Much of this material can be derived from the Project Proposal and Individual Progress Reports, but the material should now be updated to reflect the final design, with each member's separate contribution integrated into one report with a logical structure and flow of ideas.

This section may be made up of more than one chapter and divided into sub-sections and may vary in title, approach, and style according to the nature of the work done. Each sub-section should identify the primary author (see ‘Notes’ on page 2).

You can structure this chapter in the same way as the Technical Design' section of your Project Proposal by having the following components [Refer back to the ‘Project Proposal Guidelines’ for details on each section and for samples]:

- System-level overview
- System block diagram
- Module-level descriptions and design
- Assessment of final design

Document your design at both the system and module level with schematics, diagrams, tables, flow charts, pseudo-code, photos, equations, simulation models, etc. Be selective in what to include in the body of the report: place the key design information and diagrams here, and place the more detailed design points and documentation in an appendix, making sure to reference that appendix in the body. Refer to the samples included in the ‘Individual

Progress Report Guidelines' and to Section 5.5, 'UML2', in the System Design course notes for ideas on a variety of different diagrams (e.g. state machine, timing, interaction, etc.) and ways to organize your material in order to most effectively document your design.

In general, limit your discussion to the final design. In some cases, however, it may be worthwhile to talk about alternate designs that ultimately were not pursued if they strongly influenced your final design and/or represented substantial work. Ultimately, you must decide what is most relevant, and what best highlights your work and effort.

E. Testing and Verification

In this chapter, highlight the results of your testing and verification of the entire project. Space is limited so focus on presenting results that support your claims of achieving your project goal and requirements at both the system and module level.

Compare your results alongside your target requirements. One possibility is using the table format below:

Requirement (# & title)	Target specification	Final Result	Compliance? (Pass/Fail)	Comments and Documentation

For each requirement in the 'Project Goals and Requirements' table in Section G, report the final result from your project and indicate its compliance to the target requirement (pass or fail). Comment on your results and evaluate your **degree** of success in meeting the requirement, and on any revisions made along the way. Comments made in the table should be brief but specific (e.g. 'Output efficiency of X% is 20% lower than target requirement due to parasitic resistances. See Appendix E for measured results.'). More detailed comments can be included after the table or placed in an appendix and referenced in the body.

Refer to your 'Validation and Acceptance Tests' (in Appendix B) where possible in your discussion. In situations where the final system was not completely integrated, present test results of the key modules to demonstrate at least partial success at the module level.

Note on documenting results:

As emphasized in the Progress Report Guidelines, you must provide sufficient and adequate documentation of your testing and verification. Sample documentation include GUI screen shots, oscilloscope traces, raw output from software programs, photos of test apparatus, tables of experimental data, etc. Provide some comment for each piece of documentation you present. It is not enough to simply attach graphs or tables of results. You must interpret these results, explaining how they relate to your initial objectives and how they are evidence that you have accomplished your goals, and provide proof that the results were obtained in a controlled manner. As in section G 'Final Design', you have limited space so place the most important results here, and reference the more detailed results you have in a separate appendix.

F. Summary and Conclusions

Summarize and interpret your overall project and its results here. Consider the following questions:

- Did you meet your project goals and requirements, as demonstrated through your validation and acceptance tests?
- To what extent does your testing and verification work prove out your final design?
- Were your design ideas proven out? If not, explain why.
- What are the key conclusions to be drawn from your project?
- Where is the kind of work you did in your project used or potentially useful in state-of-the-art, industry, academe, or society?

When addressing these questions, try to make specific claims, don't overstate your conclusions (i.e., avoid sounding like an advertisement), and limit your statements to the actual work presented in the final report. Finally, provide suggestions for future work and potential applications.

G. Appendices

Appendix A: Gantt Chart History

Include a final updated Gantt chart along with **past versions** from the Project Proposal and Progress Report to document how your work plan has evolved.

Appendix B: Validation and Acceptance Tests (copied from Project Proposal)

Attach an unedited copy of the 'Verification and Acceptance Tests' section from your original Project Proposal here. These tests were devised by the team to gauge the final success of the project and must be included here. If your project has changed substantially, provide an updated version of the tests and comment on the changes you've made.

Other Appendices

Place in the later appendices all other information which does not fit the flow of the document. Some information is bulky and only summaries or snapshots will go in the main part of the document. Some background information may be required to bring the reader up to speed, but will be overly long or unsuitable for the main part of the document (which should still contain a summary of this background). There should be one Appendix for each subject and each Appendix should have a title and letter (e.g. C, D, ...). Remember to provide captions for tables and figures. Each Appendix should be referred to by its letter within the body of the report. Don't include anything in the appendix that you don't actually reference it in the body of the report.

Although, there is no specified maximum limit to the appendices, we do NOT expect you to include all source code, etc. In general, it should not be much larger than the main body of the report.

Last Notes

Many projects are part of a supervisor's ongoing research, or will form the basis of other projects in years following. Discuss with your supervisor where and how the detailed information should be archived for later use. If there are source files or detailed results or

other information that you are delivering to a supervisor or outside sponsor, put these in a separate document; they do not have to be part of the report.

You should also consider meeting with your team after the year is done in some relaxed atmosphere to discuss the project and the course. Consider where you did well and where you might have done things differently. This post-project analysis will keep you on the road of continuous self-improvement, the mark of an ideal engineer! We welcome any thoughts that come from these meetings, because we are on the same road.

Cheers! Almost done....