Draft Project Charter Instructions

California State University, Fresno
Electrical and Computer Engineering Department
ECE 186A - Senior Design I
Fall 2018 - Dr. Stillmaker

Due: Friday, October 26, 2018 by 10:00 AM to Blackboard

YOU and your team should generate a single PDF document using LaTeX and the `\documentclass[12pt,onecolumn]{IEEEtran}`. You are welcome to use the posted `ProjectCharter.tex` file posted on Blackboard, and just modify that to add your own information, and meet the requirements. I don't want to give a definite page limit, but I am expecting this document to be somewhere around fifteen to thirty pages, depending on your number of figures and tables, though making sure to adequately cover all the requested material is what matters. In other words, I expect that at this point you have rather thoroughly thought through your project, and should have a lot to say about it.

Below I list the major parts that should be included. Keep in mind that you will likely have subsections under these sections, which I won't directly specify, but you should logically organize your report.

It should contain the following parts:

Title Page

Your title page should include your project's name, that it is a project charter, the university name, the department name, ECE 186A, Fall 2018, the date, the instructor's name (me), your technical advisor's name, and all of your ECE group member's names. After this, you may need to add more space to make sure it is only the above mentioned information that was included.

Revision History

You should have a page that explains the revisions. It should have a version number, who made the changes, when the version was finalized, and what were the high level changes made. At this point you might or might not have multiple versions, if for example your technical advisor suggested changes that you had to go back and perform. This shouldn't be so fine-grained that you log every time you make a slight change. A good rule of thumb is you should have a new version any time the report is given outside of your immediate group, this way if you give a version to your technical advisor for example, you can keep straight what version they have.

Abstract

A brief explanation of your project, in about one or two paragraphs, and must be less than one page.

Table of Contents

You should have a table of contents, which can be generated by a `\tableofcontents` command.

List of Figures

You should have a list of figures, which can be generated by a `\listoffigures` command.

List of Tables

You should have a list of tables, which can be generated by a `\listoftables` command.

I. Introduction

Clearly state your project, and what is the main deliverable. List your team members, and what their specific responsibilities will be in completing the project. This section should have any details about your team member's strengths, but just very simply what their responsibilities are in about a sentence (i.e. Student One is responsible for being the project manager, micro-controller communications programming, and design of PCB to interface with components).

This is where you should list your project purpose and justification.

II. Project Objectives and Success Criteria

Here you should list your project objectives, likely in a bulleted form, which clearly states the objectives accomplished by your project. You should also list your success criteria here. As mentioned in class, make sure you include both ambitious success criteria, as well as more easily attainable success criteria. This is how you will measure how successful you were in your project.

III. High-Level Requirements

A list of requirements at a high level. This will include things such as being implementable in 2 semesters, completed within a budget, as well as other requirements placed on your project.

IV. Assumptions, Constraints, and Standards

Describe the background, strengths and weaknesses, of each team member's knowledge, as it pertains to the project. Explain in detail what background information is going to need to be researched and learned to complete your project. You should list specific courses that you have taken during your time at Fresno State that you will need to use information from to complete your project. Note, for a successful Senior Design Topic, you must be using a breadth of knowledge.

At this point you should have completed some extensive background research, which should be included here.

List any other constraints you may have.

Include a **list of the standards that you will be following in this project**. Remember that there is an IEEE standard for just about any communication protocol, format, or language used in ECE, so make sure to look it up if you are unsure. This is required.

V. Project Description and Boundaries

Describe your project in detail in this section. List out all of the major components, as well as all of the minor components underneath that. Explain all the major difficulties with the project. List who your technical faculty advisor is, what their area of expertise is, and how you will use that expertise in your project.

Here is where you should **include your block diagrams, flow charts, and circuit diagrams**. Each project should have multiple parts that need to communicate, so you need a diagram that shows the details of the names of the connections, the size of the busses, etc. Those with programs, which I also believe is all, should have outlines of flowcharts for the programs that will be used in your project.

VI. High-Level Risks

What are the risks associated with your project? For most, there are power systems you must be concerned about, or moving parts, or a number of other possibilities. List what these are, and how you are addressing keeping your project development safe.

VII. Milestone Schedule

This should have a list of the milestones, who is in charge of each milestone, and when it should be accomplished.

VIII. Gantt Chart

Include your updated Gantt chart for this and next semesters. Note, it is expected that there can be some overlap between the Gantt and the schedule, but they focus on different things, and present the data in a different way.

IX. Equipment and Budget

This should have a detailed list of what equipment you will be using, both to build you project, as well as to test your project. This includes items you have, need to purchase, or need to borrow.

You should also have a detailed budget of what components you will be purchasing.

X. Roles of Team Members

Clearly describe each team member, what their strengths are, what their weaknesses are, and what their role is for the project.

XI. Stakeholder List

List all of the stakeholders for your project, including why they are a stakeholder. This should include team members (ECE as well as ME), the instructor (me), your technical advisor, your sponsors (if any), and anyone else that has a stake in the project being successfully completed.

XII. Project Approval Requirements

List what is required for your project to meet the approval of you various stakeholders.

XIII. Approvals

This is a list of signatures of all of the stakeholders.

References

You will use Bibtex to generate references for all of the material you cited, using [1], to write this report. Use the to generate your references.

Remember, you need to compile your .tex source file once as Latex, then once as Bibtex, then once again as Latex. The first compile determines what the citations are, the second generates the list of references, the third assigns the correct reference numbers.

References

[1] A. J. Arduengo, III, R. L. Harlow, and M. Kline, "A stable crystalline carbene," *J. Am. Chem. Soc.*, vol. 113, no. 1, pp. 361–363, 1991.