Guidelines for Preparation of Senior Design Proposals

Tagliatela College of Engineering

Design activities are a critical part of the practice of engineering. Engineers are frequently required to prepare project proposals in order to compete for contracts from businesses or government entities. Practice in preparing proposals is an important component of engineering education related to technical communication. This document presents guidelines for students enrolled in programs within the Tagliatela College of Engineering to use in preparing proposals. The components described below are broad in scope to accommodate the discipline specific needs of the wide range of programs within the college.

Items presented in the following table are roughly in the order that they should appear in the proposal.   Items 4 through 12 in the table should typically occupy about six to ten pages of single spaced typed text (depending on items included and the complexity of the project). Item 1, Letter of Transmittal, is separate from the formal proposal; however, it is an important element in the overall presentation.

Item	Proposal Component	Description
1	*Letter of Transmittal*	A letter of transmittal is simply a brief, formal business letter that accompanies your proposal and announces that the proposal is enclosed. You may use this letter to identify the problem or RFP to which you are responding. You might also highlight any features of the proposal that you think your readers should recognize.
2	*Title Page*	List the title of your proposal, the project # or RFP # (whichever is appropriate), prepared by (that's you), submitted to (name of organization or individual), and the date.
3	*Table of contents (TOC)*	You generally only need this if your proposal runs to ~10 pages or more. Some RFP's may require a TOC.
4	*Project Summary/Executive Summary*	Include summary of your proposal that highlights the major features, particularly how well your proposal fits the RFP. These summaries are strategic. That reality means you order the ideas in the way that most strikes your reader, not necessarily the same order they appear in the proposal. Most decision-makers read the executive summary to decide whether the proposal is worth reading. These summaries are generally no longer than 5% of the length of the whole proposal. Even though this section appears first, you normally write it last.

5	*Project Description/ Problem Statement*	Provide any background that readers might need. Most RFP's define the need for you. You can rephrase that language here and add a summary of what must be done to solve the problem and what are the consequences of failing to solve the problem. You should also define any constraints that exist (cost, time to complete, etc.) or design criteria that you must meet.
6	*Project Goals*	Specify in precise language the conditions that you propose will exist when your project is completed. You can usually specify goals in a bulleted list.
7	*Literature Search*	Background information related to the technical aspects of the project should be researched to identify prior work and provide guidance.
8	*Patent Search*	A patent search should be completed if applicable to the project. This is particularly important if the project involves creation of a physical component, product formulation, or computer code.
9	*Project Design*	In the project design explain the methods you will use to carry out your proposal. Your readers will need to be convinced that these methods are sound and likely to produce the required outcome. You might also include a tentative outline of the final product of your work (in this case a report).
10	*Work Plan*	You should break the overall project into stages and display these mapped against a project calendar. This step is commonly done in a Gantt chart. Readers use this information to judge whether you have a grasp of the work involved and a realistic schedule for completing that work. The task allocation for each team member should be included in the work plan to foster accountability.
11	*Costs*	Explain how your proposed design will meet any cost constraints, as well as what methods you will use to calculate project costs. In responding to an RFP, you will often need to submit a detailed budget.
12	*Team Qualifications*	Normally, this section would include the qualifications of key personnel. A good strategy is to first summarize the aggregate qualifications of team members as they relate to this project. List each group member separately and describe the strengths he or she brings to the project. The résumés of key personnel should be included in the appendices.
13	*References*	Provide a list of references that you consulted in constructing your proposal. You should consult a style guide appropriate to your discipline for proper format.

14	*Appendices*	Appendices are usually aimed at those who may be asked to review the technical soundness of your proposal. Include material that you think might support your proposal but is too complex or detailed to include in the text of the proposal (for example: detailed calculations, preliminary design sketches or schematics, etc.). If you don't need such things, then don't bother. Label all appendices clearly and consistently.

Formatting: Suggested formatting includes the following. Font: Times New Roman 12 pt. Single spacing of text, left justified, skip line between paragraphs. Margins: top and bottom 1.0", left and right 1.25". Follow format specified by the requestor or your course instructor if different. Figures and tables should be formatted and referenced in text in accordance with the disciplinary norms or as specified by the requestor or your course instructor.

General Advice: Remember that a proposal is essentially an offer to do work and, if successful, will eventually evolve into a contract. Remember that all proposals are competitive documents. Yours will compete either with the proposals of others or with the status quo. The recipient can simply say no, or can ask you to revise you proposal.