Formal Technical Proposal Outline

Each team must submit a Formal Technical Proposal for their project on or before the Start of Class on Wednesday of week fourteen. Teams must provide both a bound hard copy and electronic copy via CD on or before the assignment due date/time. The Formal Technical Proposal together with all required support materials (as shown in FTP Content Check Off Form should be submitted in a standard 10” x 13” brown envelope to the Program Assistant for date and time stamped acceptance. Incomplete assignments will not be accepted until all information is provided. Late submissions will reduce the student’s/team’s grade for this assignment. A separate sheet that clearly indicates the primary author of each section is required. In addition, a copy of this document (clearly indicating that every FTP requirement listed below has been addressed) must be included in the envelope.

General Formal Technical Proposal Requirements (10 Points)

Bound
One-inch margins, 12pt type
Theme that carries through entire document
All figures have titles at the bottom (Figure X. WIP Block Diagram.)
All tables have titles at the top (Table X. WIP Major Deliverables.)
Figures and Tables must be referenced in the document prior to their presentation, but the presentation should be as close to the first reference as possible.
EXAMPLE -- As shown in Figure 1, the project will have three distinct………
Use color to help the reader. Don’t overuse color and never use anything but black type
Each major Section should begin at the top of a new page

Cover Page
Project Name
Project Sponsor
Project Advisor
Team/Company Name
Name of each team member (must be on this page)
Date
Signature of Reviewer

Letter of Transmittal
Summarizes the who, what, when, where, why, and how much
Clearly commits company to deliver the scope, on time, on budget, with requisite quality
Signed by executive-level individual
Bound as part of the document

Table of Contents- including Appendices
List of Figures
List of Tables
Section I – Introduction (10 Points)

A. General – Focus the reader’s attention to the importance / relevance of the problem / opportunity that has mandated the project. Start with big-picture view and narrow this to the level of the project. (2 points)

B. Background – Provide the reader with information that describes the current environment and what events have caused the creation of the project. (2 Points)

C. Technical Challenge – Present the major technical challenges that will need to be addressed by the project team in order to accomplish the scope of work, on time, and on budget. Use the Technical Merit Factor Table to summarize the weight assessment performed by the project team. Remember these are maximum weights – a small amount of software development is not deserving of 0.3. (2 Points)

D. Benefits – Explain why this project is being conducted and what it will provide as the overall benefits to the sponsor and other stakeholders. (2 Points)

E. Proposal Structure – Briefly describe how the proposal is organized. (2 Points)

Section II – Project Scope (10 Points)

Explain the objectives of the project. What will the project provide and what will it not provide. Explain any assumptions that have been made in planning the project.

Section III – Statement of Work (50 Points)

A. Project Design – Present and describe your conceptual design using a high-level diagram that depicts general requirements for hardware, software and integration. Expand the conceptual design to provide functional block diagrams with more detailed information and figures as you present your functional design. Demonstrate understanding of design/development requirements by discussing signal characterization and algorithms to be implemented. (15 points)

B. Work to be Performed – Use a Work Breakdown Structure and describe the project in terms of tasks and subtasks. WBS should indicate the inter-relationship of subtasks to tasks. Also include a Responsibility Assignment Matrix to clearly delineate each team member’s responsibility on a task-by-task basis. (5 Points)
C. Precedence Diagram. Using a Network Logic Diagram fully explain the process used to determine overall project duration and the critical path for your project. Explain what total float is and how this will impact the management of critical path tasks. Present your critical path and discuss the tasks that appear on this path. (5 Points)

D. Task Schedule - Use Gantt Charts to establish the actual time line for all project tasks. The Gantt Chart information for project length, critical path and tasks must totally agree with information obtained using other project management tools. Present the summary graph of all level “0” phases and then a chart for each phase. (5 Points)

E. Milestones – Articulate the major milestones that will be achieved and when these milestones are scheduled to be completed. A timeline of the milestones, together with a detailed explanation of each milestone, is required. Milestones are generally events such as a demonstration of a critical portion of hardware and or software. Be clear as to what the event is. (5 Points)

F. Deliverables – List and provide detailed description for ALL deliverables that will come from the project. Give a clear picture of the deliverable so that stakeholders have a good understanding of what will be received in form and quality. Because deliverables will be used as one of the primary project management tools during the execution phase of the project, this section should receive considerable attention – with ALL deliverables being presented and described in detail. A summary chart indicating each deliverable, the individual with primary responsibility and the due date associated with each deliverable must be included. In addition, a separate time-oriented graph of all deliverables must be included in the proposal. (10 Points)

G. Sponsor Requirements – Present any additional requirements that the SPONSOR has generated that will directly or indirectly impact your project scope, its time, or its costs. These requirements are in addition to those imposed by this course. An example would be presenting a paper on the results of your project at a national show or conference. If no additional requirements have been generated, a statement must be included to that effect. (5 Points)

Section IV – Risk Assessment (5 Points)

A. Using the USAA Risk Card as a guide, describe the major risks that could negatively impact the completion of the project, the time required to complete the project, the costs associated with completion of the project, and/or the quality of the project. For each major risk address:
Risk Identification
Risk Evaluation
Risk Response

B. Your information should include **ALL** of the following
   - An evaluation and ranking of all identified risks
   - Assignment of responsibility for each risk to a team member
   - A risk summary chart for identified risks that indicates the overall impact vs probability in a nine-block (3 by 3) representation should be included.

Section V - Team Organization and Qualifications  (5 Points)

A. Hierarchy Chart - Develop an organizational chart for your team and describe the primary duties and responsibilities of each member.

B. Member Qualifications – Describe each team member’s qualifications and experience that justifies this individual’s participation in the project. Include resumes for each member as an appendix to your proposal. Take some liberty in this section to “upgrade” each team member’s experience and qualifications

Section VI – Project Costs (5 Points)

A. Provide and fully describe a comprehensive table of project costs. The table should include Direct Costs (Labor, Benefits, and ODCs), Indirect Costs, Profit, and any other related costs. (DO NOT indicate that labor or equipment is FREE). Explain each cost fully.

B. Provide a timeline from Start of Contract to End of Project for the expected expenditure of labor and other costs over the life of the project. Indicate where each team member will expend man hours of labor and where equipment and other ODCs will be procured. Show a linear expenditure (straight line from $0 at SOC to $Total at EOC) of costs as a reference on this graph. Explain variations of the projected costs of the project from this linear expenditure.

Appendices  (5 Points)

Include relevant information as needed to support the proposal. Appendices should include **but not be limited to**
- Potential Project Quad Chart for this project
- White Paper Presentation Slides for this project
- Capstone Design Document (updated)
- White Paper Presentation and Capstone Design Document Approval Form with original signatures
- Four memos documenting meetings with and sign off by advisor
Problem Statement,  
Conceptual Design,  
Functional Design, and  
Deliverables  
WBS, RAM, NLD, Gantt, Risk Cards, etc  
Don’t forget resumes.

Writing Course Requirements.

Please remember, in addition to being the formal technical planning document for your project, the FTP is a graded writing assignment. As such, 1 point per error will be deducted for spelling, grammar, punctuation, formatting, etc.