Parts of a Written Design Proposal

- Introduction
  What is the project about and what is the motivation? Review any prior work in the subject area. Who are expected end users? Describe in detail functional requirements, **preliminary (but quantitative) specifications**, and related technology areas. Comment on the scope of effort involved in general terms. Consider using tables to show specifications etc. for clarity.
- Objectives
  Describe the project goals and intended functions and features. Carefully state how you have narrowed or broadened the scope of the project based on available time and labor resource. Comment on critical design parameters and what challenges might stand in the way of accomplishing your design objectives. Be ever alert to professional and societal context of the design objectives as it relates to engineering standards, and realistic constraints that include one or more considerations of economics, environment, sustainability, manufacturing, ethics, health and safety, and social and political impact. Make sure your objectives are clear. Clear objectives lead to clear plan for generating the tasks to accomplish the design goals
- Design Strategy
  Describe your approach to this project, including model development, model validation, simulation, control design and tuning, and performance verification. If your project calls for additional subsystem developments, such as special-purpose sensors, mechanical components, etc., you should also discuss your design approach to these subsystems.
    -Consider design alternatives and ways to evaluate them.
    -Risk and Safety - identify any potential risks and safety precautions needed.
    -A block diagram may be helpful to convey how different components and stages in your design fit together.
- Plan of Action
  The plan of action consists of various tasks needed to implement the design strategy. The tasks should be linked to the objectives and the design strategy components.
- Verification
  Testing Procedures: Outline the test procedures of your project and the resulting tables, graphs, and measured values that will assess the project performance. This should be correlated with the project specification described in the Introduction section. Describe the test procedures for individual project components and subsystems (e.g., model validation, sensor subsystem, etc.), and the overall system.
  Tolerance Analysis: As part of your project, describe the engineering components, subsystems, or parameters that most affect the performance of the project. Discuss how you will later in the project verify this analysis in simulation and experimentation.
- Cost and Schedule
  Cost Analysis: Include a cost of the project based on labor and material. Include a list of parts, lab equipment, shop service, which are not routinely available at no cost. Even though you are given an assembled system, give estimated cost of the components within the system and also of any addition and improvement of the system. Compute labor cost for each team member on the project as follows:
  Assumed dream salary ($/hour) * project # of hours = $Total
  Schedule: Include a timetable showing when each step in the expected sequence of design and fabrication work will be completed (e.g., Develop model, Verify model, Design controller, Test controller in simulation, Test controller on integrated system, Design sensor subsystem, Buy parts, Machine parts, Assemble subsystems, Prepare demo, etc.).
- Bibliography:
  Throughout the proposal, you should cite the sources of your information (including web site URL's) and list the references in this section. Use Easybib.com for help.

Unknown. "Guidelines for Design Project Proposal." ***Guidelines for Design Project Proposal.*** **Electrical, Computer, and Systems Engineering Department, 2006. Web. 25 Sept. 2016.**