GUIDELINES FOR PREPARING DESIGN PROJECT REPORTS

Background

With increased emphasis by the accreditation agencies, ABET and NCA, on quality, content and assessment of student work, the ME Department has adopted a common format for all project reports prepared by students, primarily in the design-related courses.

The definition of a design-related project is a project that has open-ended solutions and will result in a product which satisfies design requirements. The potential readers are management team (faculty) to evaluate the merit of the work and approve the design, manufacturing unit to fabricate the product, and other professionals for resolving product related issues. Thus, the problem the project intends to solve needs to be clearly defined, the methods used need to be specified, the final product needs to be evaluated, and the whole design process needs to be presented. The final document should be self-explanatory.

The proposed format will help students prepare the final report and ensure that proper information is included. It will also train students in technical communication skills which are crucial in engineering practice.

Proposed Format

Title Page – Project Title, Course Name, Department and Campus Names, Student Name or Design Group Participant Names, Faculty Advisor Name(s), Sponsors, and Date. **Note**: The same information should be on all other presentations, including poster and PowerPoint.

1. **Abstract (or Summary)** – List the objectives, describe concisely and realistically what the product described in this application is intended to accomplish, and summarize the accomplishments. (1 - 2 paragraphs)

2. **Introduction** – Briefly describe the background of the project; clearly present the design requirements and expectations; identify project boundaries; state project objectives.

3. **Planning –** Critical path, tasks, deliverables, and schedule. Specifically demonstrate project management tools and methods used.

4. **Design** – Describe the engineering specifications and targets; critically evaluate existing benchmarks and specifically identify the gaps which the project is intended to fill; show how the concepts evolved and were evaluated; describe and justify the formation of the final product; describe the product synthesis; demonstrate the analyses used for product evaluation; show the details of analysis, experiment or field test results. The content may include the following topics if they apply to the project.
   a. Design specifications development
   b. Competitive benchmarks

    c. Design concept development
    d. Concepts evaluation
    e. Product design
    f. Product evaluation

5. **Impact Statement** – State the potential impact of the designed product to environment and society as a whole, and comment on any potential safety-related issues in the use of the product. Explicit statements to each need to be made here, even if there are no environmental, societal or safety concerns.

6. **Conclusions –** Use evidence to claim major accomplishments. Demonstrate that the final product satisfies the engineering specifications.

7. **Recommendations –** Provide recommendations based on the design work.

8. **References** – Provide a complete list of literature used in completing the design (all must be reverenced in the text).

9. **Appendices** – Include programming, detail drawings, assembly drawings, and product development files.

Grading Rubric

1. Writing Quality (30%)
- Professional-looking page design and layout (title page, format, and neatness) (5%)
- Appropriate organization and logical flow of information (5 %)
- Completeness of the report (5%)
- Clarity (5%)
- Quality of the documentation - including drawings, programming, etc. (5%)
- Spelling and grammar (5%)

2. Technical Merit (70%)
- Design specifications (10%)
- Concept generation (10%)
- Concept evaluation (10%)
- Project management (5%)
- Product generation (10%)
- Product evaluation (10%)
- Impact statement (5%) *(on safety, society, and environment)*
- Conclusion (5%)
- Recommendation (5%)

Note: The rubric serves only as a recommendation. Instructors may decide to reallocate the percentages if some of the items are not applicable.

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