The objective of senior capstone design report is to answer the following questions based on the knowledge acquired through the curriculum in respective programs:

- What did you intend to do in the design project?
- What is the importance of your design?
- What had already been done before by others?
- How did you do the work?
- What has been done by your group? Each contribution.
- Were the engineering targets met? Need to provide evidence.
- Was there a research component to this project, and if so describe what research was done.
- How will the design/product be improved? Recommendations.

Follow the suggested format below for your final report.

**Cover Page** – Project Title, Names of Design Group, Faculty Advisor’s names, Client served (if applicable), and Date.

**Table of Contents** – Use page #s to outline the design report with each of the sections listed.

1. **Executive Summary** – Describe the goals or objectives of the design, the product/process developed, and its applications. Summarize the project accomplishments. (1 page maximum)
2. **Background/Introduction** – Summarize relevant background information including the need for the project. Clarify the technical design requirements.
3. **Design Objective** – State the project design objective.
4. **Customers/stakeholders and their Requirements** – State the customers/stakeholders and their requirements.
5. **Engineering Specifications** – List engineering requirements with clear definitions and their targets.
6. **Benchmarking** – Do a review to see if there are existing designs that meet customer requirements and provide the information.
7. **Design Concepts** – Discuss the concept generation through brainstorming, and evaluation aspects of the design to identify a final design concept/idea.
8. **New Knowledge Development** – Describe any exploratory research done by the team that contributed to the design process.
9. **Design for X** – Discuss how the design/product/process addresses a number of factors (X) such as cost, safety, sustainability, impact on the environment and society.
10. **Prototype/Evaluation** – Discuss how the design is prototyped and evaluated to meet the design specifications.
11. **Creativity and Innovation** – Discuss what is novel in your design and how it can lead to innovation.
12. **Contribution of each group member** – Provide the contribution of each team member and what they have learned through the project.
13. **Summary & Recommendations** – Provide a concise summary and recommendations for further improving the design.

**References** – Use appropriate professional style and language in citing sources (internet, books, journals etc.) used in the design project. Suggested style guides include the IEEE Citation Reference Style, ASME
Style Guide ii, and the ASCE Guide iii. Provide the list of bibliography references at the end of the design report in accordance with the style guide chosen.

Appendices – Attach any supplementary materials, such as drawings (layout drawings, detail drawings, assembly drawings), design analysis results (stress contours, failure plots, modeling results), product development plans, etc.

GRADING RUBRIC

1. Writing Quality (40%)
   • Professional-looking page design and layout (title page, format, and neatness) (5%)
   • Appropriate organization and logical flow of information (10%)
   • Completeness of the report (5%)
   • Clarity (5%)
   • Quality of the documentation - including drawings, programming, etc. (10%)
   • Spelling and word usage (5%)

2. Technical Merit (60%)
   • Design specifications (15%)
   • Concept generation/evaluation (10%)
   • Product/Process details (10%)
   • Product/Design/Process evaluation/Prototyping/Testing (15%)
   • 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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