Final Project Presentations and Final Report

Final Presentations
Tuesday, May 4th
11 am – 1 pm
Towne 311

Final Project Report
Due on or before the end of finals: 5 pm Friday May 7th

Grading
Project is 25% of course grade
- [20%] Project homeworks
- [40%] Project presentation
- [40%] Final project report

Presentation Procedure:

1. Set up the projects
   a. Pour 6 ounces of water in each one
   b. Turn on power

2. 10-12 minute oral presentation by each group, including
   a. Title slide with names of group members and name of design
   b. Slide with key points taken in your particular design procedure
   c. Slide with clear professional-looking illustration and explanation of design
   d. Any points of interest, problems, etc. encountered in your design procedure
   e. Future improvements that could be made to the design

3. Demonstration of design after 1 hour of presentations
   a. Pour water into external cup (same for each group)
   b. Measure temperature in the center

4. Students vote on best design

Presentation Evaluation [out of 100 points]

- [15] Oral presentation has a very clear illustration of the design and touches on all the points in #2 above
- [85] Temperature is at or below 45 degrees F
  \[
  T \leq 45.0 \quad - 0 \text{ points} \\
  T > 45.0 \quad - 2 \text{ points for each degree above 45.0} \\
  (45.0 < T \leq 46.0: -2 \text{ points}) \\
  (46.0 < T \leq 47.0: -4 \text{ points, etc})
  \]
- [extra points]. Best design. This is subjective and will be voted on by the students. This can involve creativity in design, aesthetic considerations, a high coolness quotient, etc. and is separate from the above points.
  - Best design: Additional 25 points
  - 2nd place design: Additional 10 points
  - 3rd place design: Additional 5 points
Final Report

The final report should be a comprehensive summary of your design project, and it must be detailed enough so that someone not familiar with this class or with the project could read it and be able to recreate your design. It should weave together the content of your project homeworks and include discussion of the outcome of your design during the demonstration.

The report MUST be professional and polished—points will be deducted for each typo and each grammatical error. The material should be clearly presented and well organized. The report must be bound in a cover—no paper clips or staples.

The exact format of the report is up to you. You may wish to write it in a similar format to a lab report, or, if you like, follow a format similar to that outlined in Chapter 12 (“Written and Oral Reports,” p. 351) at the back of the course packet.

Although the exact format is up to you, the report will need to include (at the minimum) the following:

- Title page
- Summary/abstract
- Table of contents
- Description of the design problem
- Full description of the design process you followed—what your initial ideas were, how you selected your final design, the list and prices of parts, design matrix, etc. This part should incorporate the contents of all your project homeworks and expand upon them somewhat.
- A discussion of how well your design meets the design criteria you set forth at the beginning of the course
- An engineering analysis – i.e. the calculations on which the design is based. You must clearly state any assumptions made in the calculations and justify any parameter values used in the calculations. If you use any manufacturer information in your calculations, you must say so and include any manufacturer charts/graphs/information used in this section in an Appendix.
- A cost analysis. Here you must analyze the total cost involved in building your project and getting it to work—including materials, manufacturing labor if you built your own part (i.e. manufacturing time), utility costs, etc.
- Professional-looking, detailed drawing of your final design. This must be clear enough so that it could be fabricated by someone who is not familiar with the project.
- A section on conclusions and future work. This would be ways you could enhance your design. Even if the design works, there will always be improvements that can be made. These could be ideas you think of while looking at others’ designs, things you would have liked to include but didn’t have time to, or other ideas. For this section you may wish to perform some optimization calculations to show how changing the size/shape/material/etc. would improve upon your design.
- Bibliography. This will include any books, articles, web sites, catalogs, or other sources of information used in your project.

If you have supplemental information that would disrupt the flow of the report (such as manufacturer charts, printouts, or information), include this in an Appendix.