

Thermal System Design – ME5810/6810
Final Design Project
Fall 2008
Due Dec 17, 2008

The purpose of this final thermal systems design project is to tie together the various pieces you have learned throughout the semester and produce a comprehensive design for a real world problem. Your design project topic may be selected from the list of projects in Ch. 10 of “Design of fluid thermal systems,” by Janna, or a topic of your choice that is approved by the instructor. This project will involve teams of 3-5 students each and you will be required to develop an integrated model (using a well commented EES code or another software package) to help you analyze and optimize the performance of the system. Designs should be “workable,” but should also include economic considerations.

Your report should be no more than 10 single-spaced typed pages (Not including appendices). Please be sure that your report contains the following sections:

1. Summary – concise description of the motivation for the design problem, brief description of the design and how effective the design was in meeting the required objectives
2. Introduction
 - a. Description of the Design Problem and Objectives
 - b. Description of the Constraints
 - c. Description of any Assumptions
 - d. Consideration of possible alternatives
3. Discussion of the Design
 - a. Description of the design and specifications
 - b. Appropriate Drawings, Schematics of the System
 - c. Description of the methodology used for analysis
 - d. Description of challenges (e.g. technical, environmental, cost, social, etc.)
4. Discussion of the Results/Analysis of the Design – this section should include your final system model results and any appropriate discussion
5. Conclusions - Summarize and determine whether your design met the stated objectives in the introduction
6. Cited References
7. Appendices – Include your codes, important hand calculations, supplementary figures and tables.

Note that one of the major expectation differences between the 5810 and 6810 classes is use of peer-reviewed literature. That is, I expect that the 6810 projects will include at least a brief description of some existing work that has been done in your selected area.