ASSIGNMENT 3

PROGRESS REPORT ON THE CRANE PROJECT

The progress report may well be the document you will write most frequently as an engineer. Progress reports are addressed to supervisors, project managers, employers, contractors, funding agencies, and/or government officials and are submitted at regular intervals during the course of a project. Progress reports assure people in oversight positions that milestones are being achieved, deadlines are being met, and costs are being monitored. On the basis of progress reports, adjustments can be made to meet budget, supply, schedule and personnel needs. Progress reports also serve as a record of all project-related decisions and actions, and as such can even become evidence in a court case.

Because of the importance of the "paper trail," progress reports usually follow a specified template. This progress report is the first formal documentation of work on the Crane project. Include the sections described below in your progress report in the order given. You may want to incorporate subsections and/or subheadings within them, but do not otherwise change the prescribed structure.

Typical content of a progress report

- Project review and current status
- Accomplishments and results
- Comparison of progress to expectations
- Problems and/or changes
- Work remaining
- Overall assessment

Purpose

The objectives of this assignment are for you to:

- Understand basic principles of project management and conventions of progress reports
- Continue to practice documentation skills
- Summarize overall progress made by your team
- Document your individual contributions to the project
- Analyze and explain your design process and decisions
- Present technical information and data to support your progress evaluation

Note: This report has been changed from its original description in the syllabus. It will not be individually submitted. Instead, each team will submit a single report that includes a section with individual contributions, as described above. This means that the grade on this report will be subject to the team weighting factor and must include a signature sheet. **Please refer to the Teamwork and Academic Honesty sections of the syllabus for further information.**

Due Dates

Monday Lab Sections – Wednesday, November 28; Thursday, November 29
Thursday Lab Sections – Tuesday, November 27; Wednesday, November 28

Components

I. Overview

In this section, summarize the project goals and identify key specifications and constraints. Note: these are the specifications and constraints given to you by the faculty, not constraints imposed by your design ideas.

II. Management

In this section, describe the strategies your team is using to complete the project. Within this section you should include the following sub-sections:

- Team Members – shown in a table with major and key responsibilities. Since all team members are responsible for documentation, no team member's key responsibility should be "documentation" or "report writing" or "wiki maintenance."
- Gantt Chart – computer-generated with key tasks identified and a deadline for each. The Gantt chart should begin on the week the project was assigned, and conclude on Lift Day.
- Individual Contributions – **each member of the team** will complete a section with the following information:
    - Name (used as a subheading)
    - Description of tasks you, as an individual, performed to date
    - Description of how the results of these tasks were communicated to the rest of the team
    - Description of how each task relates to the overall goal of the project, and to the tasks being performed by other team members
    - Section of the report where the task is described in detail

  The Individual Contributions are to written in **narrative form**, not in list format.

III. Progress

Use this section of the report to provide information about the technical progress you have made thus far. Over the past few weeks your team has conducted brainstorming sessions, learned how to perform Statics calculations by hand and using Matlab, and developed algorithms for performing parametric design calculations using Matlab. Describe the results of your brainstorming sessions, with neat illustrations if appropriate. Next, include a flowchart of the most recent version of your Matlab program that you use for parametric design. Finally, for each of **three** separate truss families include the following:

- A figure of the truss topology showing fixed and variable dimensions. In the caption of the figure describe which dimensions are fixed and which are used as design parameters. Note that it is vitally important that you communicate this information *clearly* to the reader; the remainder of the discussion will be meaningless if the reader does not understand your parameterization!
- A detailed description of the truss and its parameterization.
- A Matlab-generated plot of member force vs. parameter and cost vs. parameter.
- An interpretation of each plot with a discussion of how these plots informed your decisions on future design work.

- A hand calculation performed on engineering paper that checks the results of your Matlab code for one design instance. Include these calculations in the Appendix.

IV. Next steps

In this section describe how you used the results of your parametric studies to decide on future designs. Where appropriate, include illustrations of truss families that you plan to pursue in the next few weeks. Finally, provide a concluding statement expressing **the team's** overall opinion about how the project is going. This final statement should represent the beliefs of all team members.

Appendix

The main text of the report should be self-contained; i.e. the reader should not need to refer to the Appendix for any essential information. In the Appendix include hand calculations for one instance of each truss family done *very neatly* on *engineering paper*. The purpose of these calculations is to check the results of your Matlab programs. Also, include *neat* sketches of the truss families developed during your brainstorming sessions, with notes indicating why each design was/was not chosen for further study.

Additional Style and Format Notes

- Use memorandum format for this report and follow the headings provided.
- The length of this report is estimated to be 5-7 pages, not including the Appendix and figures.
- Address the report to the Sophomore Clinic Faculty. The "From" line should have your names and should identify your team by number.
- The tone and style of a progress report should be formal and the level of detail specific. Keep in mind that although reported progress sometimes falls short of expectations in various ways, a progress report is not the place for complaints or blame. Discussions of obstacles or setbacks should be accompanied by proposed solutions to these problems.
- Figures and tables should be included where appropriate. Integrate into the report, or show on a separate page if necessary to preserve readability. Be sure to label and refer to them correctly. A Gantt chart is considered a figure.

General Grading Criteria

This grade will be based on the completeness of your progress report, the quality of your design analyses, and the effectiveness of your presentation of data. The progress report should show a detailed awareness of the document's purpose and be audience-centered.

Please turn in *three* copies of this report.