ME 482 Semester Close Out Information

Below are the details for all the deliverables left to close out ME 482.

I. Alpha-prototype Demonstration: Scheduled with your section instructor

The goal of this demonstration is to prove the ability of the system, in its best possible form, to meet its functional requirements. Specifically, the alpha prototype must be able to address all the stated functional requirements. You need to develop a virtual demonstration that shows this functionality. Be prepared to justify that you are able to meet the original success criteria if you had proper access to the physical resources.

Rubric:

- Completeness of “demonstration” of functional requirements: 5
- Projected ability to meet functional requirements: 5

II. Final Hardware Demonstration: Scheduled with your section instructor

The goal of this demonstration is to prove the final ability of the system, in its best possible form, to meet its functional requirements. Unlike earlier demonstrations, the final demo is scripted and should show the final prototype’s ability to meet all the stated functional requirements within the concept of operations. You need to develop a virtual demonstration that shows this functionality. Be prepared to justify that you are able to meet the original success criteria if you had proper access to the physical resources.

Rubric:

- Fit, finish, appearance: 3
- Quality interest of the demonstration: 3
- Projected ability to meet functional requirements: 4

III. FRMDC: 8 May

The FRMDC will be held virtually with industry judges. A student information sheet will come out no later than 17 April.

IV. Final Presentation: FRMDC on 8 May

- Audience: General, but also defined in the FRMDC Student Information Sheet.
- Format: Formal
- Time: See FRMDC Student Information Sheet
- Focus: The final oral presentation occurs at the Frances Rhodes Montgomery Design Competition. The project should be presented in its entirety: problem definition, concepts, details, manufacturing, testing and final product. Details of the content expectations are defined by the FRMDC rules and provided in the Student Information Sheet to the extent the rules allow.
- Rubric: You are graded by the FRMDC rules and your course instructor according to the FRMDC rules.
V. **Final Report:** 5:00 PM on 11 May. Softcopy emailed to your section instructor.

Below is a description of the general final report expected from most teams. However, some teams will have special circumstances based on their project. If you are one of those teams, discuss your specific expectations and/or adjustments with your section instructor.

- **Focus**
  - Final status of your project. Clearly state the actual performance of your machine. Compare this to your functional requirements. Frame the final result in the context of the purpose, importance, and impact.
  - Operational/Users manuals (as appropriate)
  - Close your feedback loop on technical, modeling, team dynamics, time management, and financial management.

- **Generic Outline (50 pages max)**
  - Title page – Same structure as the whole year.
  - Executive Summary - 1 page max
  - Table of Contents
  - List of Figures
  - List of Tables
  - Introduction and Problem Statement (background, state-of-the-art, prior art, context, objectives, requirements – 5 pages max
  - Final Design – 25 pages max
    - Justification of all design considerations: cost, weight, function, performance, social impact, environmental concerns, ethical considerations.
    - Engineering analysis: stress, fatigue, weight, volume, power, energy, thermal, kinematic, etc.
    - Manufacturing and assembly
    - Original contributions. Elaborate on creative or significant advancements
  - Testing and Evaluation and results; compared to your models and analysis – 20 pages max
    - Tests performed and results
    - Results of ability to meet functional requirements; as proven through testing.
  - Technical suggestions for improvements – 5 pages max
  - Final budget and Schedule – 5 pages max
  - Conclusion – 1 page max
  - Appendices (not part of report page count)
    - Reflections – 2 pages per person

- **Rubric**
  - General Stuff
    - Quality, Conciseness Effectiveness 10
    - Introduction/Background/Motivation/Big Picture (Make sure you tie your as-tested results to the big picture) 10
  - Technical Details
- Design, Analysis, Testing, and Comparison of the models and final prototype results 20
- Manufacturing description 10
- Technical suggestions for improvement (including identifying the limiting factors) 20
  - Project Management
    - Final Budge vs originally proposed budget and reflections on any discrepancies. Time budget and reflections on scheduling discrepancies 10
  - Reflections
    - Close your feedback loop. Make comments on how you would improve your design process, time management, team dynamics, etc. 20

VI. **Design Notebooks**: 5:00 PM on 11 May. Delivered a single PDF file of the scan of your notebook to your section instructor per their instructions.

VII. **Peer Reviews**: Google form will go live the week of 11 May (link on course website: http://rip.eng.hawaii.edu/courses/me-481482-design-project-iii/). Must be filled out by 5:00 PM 13 May.

VIII. **Documentation**: You need to submit proper and complete documentations of all your design files. Make sure that detailed manuals are included that are enough for you to finish up your project in the future, if applicable, or for future teams to navigate through your design documentations and continue working on your designs. A list of hardware needs to be generated that specifies their storage locations. Consult your section instructor for the method of delivery.