ME 482 Semester Close Out Information

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

I. **Poster:** College of Engineering (CoE) Banquet on 14 April, 2022 (Completed) and Francis Rhodes Montgomery Design Competition (FRMDC) on 6 May, 2022

   You can improve and update your Banquet Poster for the FRMDC. Your poster must present the whole picture of your project in a very small space. Thus, it is an exercise in identifying the most important and pertinent information and presenting it in a very clear and concise manner. We suggest you look at many scientific posters (google images, prior years teams, the halls of Holmes Hall and POST are also good sources) to determine what they look like, what looks good, what formats and images communicate most effectively, etc. We recommend you maximize the use of pictures and other figures in conjunction with lists and tables and minimize any body text. However, there could be some great posters that have paragraph styling. It is up to you to decide which format convey your project in its entirety and in a concise manner. You just need to clearly capture the Purpose, Importance, Impact, Results, and Major Contribution of your project.

   **Rubric:**
   - Quality, conciseness, effectiveness, visual appeal, references, acknowledgements, all text readable from the appropriate distances, etc. 20
   - Purpose, Importance, Impact fully captured 20
   - Clear image, picture, diagram or solid model of the system (Big Picture of Design) that contributes to the understanding of the project, operational concept, etc. 20
   - Most important governing physics and/or analysis covered to sufficient detail to be clearly understood 20
   - Testing/Results/Contributions 20

II. **Final Hardware Demonstration:** During the FRMDC or as arranged with your instructor

   The goal of this demonstration is to prove the final ability of the system 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 concise demonstration that shows this functionality.

   **Rubric:**
   - Fit, finish, appearance: 30
   - Quality interest of the demonstration: 30
   - Ability to meet functional requirements: 40

III. **FRMDC:** 6 May, 2022 (12 – 6 PM in HIG 110)

   For details see the “FRMDC Student Information” given to you by your instructor. Be aware your team abstracts for the FRMDC are due by Noon on 2 May, 2022 to nejhad@hawaii.edu (copied your instructor).
IV. **Final Presentation:** FRMDC on 6 May, 2022 (12 – 6 PM in HIG 110)

- 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, design details, summary analyses, 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.
- **Final Presentation Slides Due to Your Instructor by 5:00 PM on 11 May, 2022**

V. **Final Report: 5:00 PM on 11 May, 2022 to your instructor.** Softcopy emailed to your section instructor.

Below is a description of the general final report expected. 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, impact, results, and contribution.
  - Operational/Users manuals (as appropriate)
  - Close your feedback loop on technical, modeling, team dynamics, time management, and financial management.
- **Generic Outline (50 pages max)**

The general instructions concerning format, page numbering, etc., are the same as for the CDR report. Note that this is a technical report, and not a journal paper like the Mid-Term Report, so use the proper format.

- 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)
    - Additional supporting material
    - Reflections – 2 pages per person

• Rubric

  - General Stuff
    - Quality, Concision Effectiveness 10
    - Introduction/Background/Motivation/Big Picture (Make sure you tie your as-tested results to the big picture) 10
  - Technical Details
    - Design and Analysis 15
    - Manufacturing and Testing description, and Comparison of the models and final prototype results 15
    - Technical suggestions for improvement (including identifying the limiting factors) 20
  - Project Management
    - Final Budget 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 to your instructor: 5:00 PM on 11 May, 2022. Delivered to your section instructor per their instructions.

VII. Peer Reviews: Google form will go live the week of 9 May (link on course website: http://rip.eng.hawaii.edu/courses/me-481482-design-project-iii/). Must be filled out by Noon on 12 May, 2022.