

Kentucky Derby

MCHE 201: Introduction to Engineering Design
Spring 2019 – Final Project

Presentation: ~~Friday, April 5th, 5pm~~ Monday, April 8th, 5pm
Report: ~~Friday, April 5th, 5pm~~ Monday, April 8th, 5pm

Assignment: Each team will report on the selection of a conceptual design for the Kentucky Derby contest. This should include a review of problem understanding and presentation and evaluation of alternative designs.

The concept evaluations should be reported in no *more* than 5 pages of text, excluding figures. In addition, one presentation reporting on this part of the project will be given.

Submission: The report and presentation should be submitted via email:

- to joshua.vaughan@louisiana.edu
- with subject line TeamX-MCHE201-FP2 where the X in TeamX is your team number, and
- all team members copied on the submission email.

The email should include:

- a single pdf of the report with file name TeamX-MCHE201-FP2.pdf where the X in TeamX is your team number, and
- a link to your team's presentation on vimeo.

Note: Submissions with incorrect filenames or submitted as multiple images/pdfs will be rejected.

1 Introduction

Each team will report on the selection of a concept for competition in the Kentucky Derby contest. There will be both a presentation and a written report. A review of the team's problem understanding should also be presented, as it is needed for your reader to be able to understand your design process. In addition, at least two alternative designs should be presented (for a total of three concepts) and the alternative concepts evaluated.

2 Presentation

This presentation should discuss the selection of a conceptual design for the Kentucky Derby contest. Because of our large class size, you will create a video presentation and post it online. The chosen design should be presented and support for its selection given. This support includes reporting on the House of Quality, the Specification Sheet, the Function Tree, and Evaluation Matrices. At least 2 alternative concepts should be presented and evaluated, using the Evaluation Matrices, along with the chosen design. This presentation is limited to 5 minutes per team.

All presentations must adhere to the specifications for the video submission posted on the class website.

3 Report

For this reporting period, the chosen concept for entry into the Kentucky Derby contest should be presented. The discussion should focus on the final, full design, not the current week's build activities. This report should present the chosen design, then provide support for its selection. A brief review of the problem understanding is also needed support the chosen the design. In addition, two alternative concepts should be presented and evaluated, along with the chosen design, using Evaluation Matrices. The report should be no *more* than 5 pages of text, excluding the abstract and figures.

A suggested outline for the report is attached to this document. You may also refer to Chapters 10–13 of the textbook and/or the **C.R.A.W.LAB** Style Guide, found at:

http://shared.crawlab.org/CRAWLAB_StyleGuide.pdf

Formatting requirements and a report template, including a L^AT_EX source file, can also be found on the class website.

Suggested Outline and Tips

Title Page

Abstract – Standalone summary of the report’s contents, on a separate page

I. Introduction

- Introduce the problem and its challenges
- End with a “roadmap” sentence outlining what is in the remainder of the report

II. Final Design

- Present the functionality of the final conceptual design
- Start with a complete system discussion and work toward detail
- Use computer-generated sketches to support your description
- Label key parts in the sketches, matching labels to the text description
- Do *not* use only pictures. You may include pictures, but they should supplement your figures, *not* replace them.

III. Problem Understanding

- Give concise presentation of the problem understanding process followed
- As support, include and discuss:
 - House of Quality
 - Specification List
 - Function Tree
- Be sure to make the revisions suggested on the Problem Understanding Report and update the tools reflecting your current understanding of the design problem.

IV. Concept Evaluation

- Present two alternative designs in enough detail so that the reader can understand their functionality. (So, the report should include three total designs.) This almost certainly requires at least one, and likely multiple, figures of each alternative concept.
- Support the selection of your final design via a Third-level Evaluation Matrix

V. Conclusions

- Summarize what was presented in the report
- *No* new information is presented here

VI. References (if needed)