

Milestone #11 – Wrapup, Reflection, and Learning

DUE: 14 May (After the final competitions are over)

DESCRIPTION:

Congratulations, you've made it! This is the last milestone of the course, and it is a chance for you to look back upon the work you did this semester and assess how it made an impression on you. Think about what your experience with design was before this semester, and consider everything you learned while designing and building your vehicle, running in the final competition, as well as watching the machines of your peers do the same. Here are some questions that you might find worthwhile answering for yourself.

- **Assessment of your machine's performance.** Consider the differences between your design calculations and the actual performance. How did your machine work (e.g. handle, accelerate, turn) in your head while you were designing it vs. how it performed in real life. Describe what real-life factors might have influenced the machine and how witnessing it gave you a better model by which to judge future designs. Use pictures and/or diagrams to describe parts of your machine which you would have gone back and changed if you had time or another chance.
- **Comparison to other machines and designs.** If there was another vehicle of your same general type (e.g. scooter, go-kart, etc.), what made your machine stand out? Was there another machine which had some design element which you found particularly well-executed? Promising but not very well-executed? (Exclude names, only describe the design element). What was the single best idea (of any machine) you witnessed this term?
- **Gauge your own learning.** What was the biggest takeaway for you this semester from a learning perspective? How does seeing the design process and outcomes of your peers influence how you will design systems in the future? Compare and contrast how confident you are in the following areas before and after this term:
 - Mechanical power transmission design using CAD software, analyzing mechanical systems for torque, speed, power, etc. with first-order math
 - Understanding, designing, and fabricating low-voltage electrical systems
 - Ability to read product specifications and gauge their usefulness to your design
 - Correlating design calculations and specifications to existing parts in a catalog and making design compromises based on that.

FORMAT OF DELIVERABLE:

- **3-4 pages** in your notebook holistically describing your experiences this semester, using the above guidelines if needed.
- Alternatively, a blog/journal entry on your website with the equivalent content. (Email charlesg@mit.edu the link).
- Pictures are heavily encouraged in either case – hold the essays!

OPTIONAL - ADDITIONAL CLASS FEEDBACK

This section is a trial run of a potential future EV-focused design and manufacturing lab class at MIT. Your participation is valuable, but your honest feedback is even more so. A supplementary “class feedback” form will be uploaded **after the competition** with specific questions pertaining to the course material, timeline, and other elements. It is fully optional is not counted towards any part of the course grade, but it would help greatly if you would complete it!