EE3 18S Final Report

Written Report: The final report is also due at 11:55 PM Saturday, December 15.

- Only one report should be submitted per team.
- Submit it to CCLE under "Finals Week" | "Final Report and Code".
- There is no page limit. To paraphrase Einstein's quote on simplicity, the report should be long enough to tell the whole story, and no longer.
- Your target audience is not your instructor, but students in the next instance of EE3. Make it understandable to them.
- The more figures, graphs, and pictures, the better. Schematics must be electronic; no hand-drawn schematics. Suggest Scheme-It at the Digi-Key site. There are others. Do NOT use Eagle or other CAD software to generate schematics. Do not use chip outlines; use symbols for what is inside the chips (i.e., symbols for op amps). The outline of the Nano or LaunchPad with pinout is OK.
- It consists of the following sections.

1) *Introduction and Background (10 pts):* In one to two paragraphs, briefly describe the project goals, and the design that was selected. Then describe the basic theory required for understanding each of the components that you used (e.g., prose description of operation, curves, and any equations needed for interpreting responses).
2) *Testing Methodology:* Briefly describe the procedures you followed to verify the operation of the components and the complete design. Include schematics (NOT CAD diagrams; see red text above) of the circuits you used. This should include brief discussions of designs you tried and abandoned.
   a. *Test Designs (10 pts):* Describe your test setups: the physical and electrical characteristics.
   b. *How the tests were conducted (10 pts):* Describe your test procedures. Show the data that you collected.
   c. *Data Analysis (10 pts):* describe the analyses that you conducted on your test data. Provide graphs and tables of your testing results, as applicable
   d. *Test Data Interpretation (10 pts):* discuss the meanings that you associated with the analyses you conducted. This discussion should be quantitative (meaning that the numbers obtained in your test results should be discussed).
3) *Results and Discussion:*
   a. *Test Discussion (10 points)* Interpret the graphs and tables of your test results.
   b. *Race Day Discussion (15 points)* Discuss how well your vehicle performed on Race Day. Provide links to videos, if any. Discuss how the vehicle's performance could be improved. You can also have photos of your components/final design.
4) *Conclusions and Future Work (5 pts):* Provide a brief discussion of how well your design met your goals. Briefly describe what you learned in doing your project. Describe some extensions you would like to do if you had more time, and how you would go about testing them.
5) *Illustration Credits (10 pts):* ALL illustrations must be credited, unless you have developed them yourselves. Illustrations from Wikipedia should be credited to the illustration author. If you use a schematic code, you must credit the provider of the code.
6) *References (10 pts):* Remember: some of your work may be original, but some is surely not. If you did not think up an idea or a concept totally on your own, then you owe an acknowledgement to the source of the idea or concept. If you used software from the web, or consulted some books or articles (or online designs), or talked to others, then you must, in the main report, note that usage through a reference number inside square brackets (e.g., [1]) and include the corresponding reference in this section. If you are using one of the circuits supplied for the class (e.g., the motor

drive circuit), you should note that in your report along with the diagram, but you don't need to cite a reference.

7) *Code*: Submit a zip file to CCLE (under "Finals Week") with the code and report files.