

## EE3 17S Final Report

**Written Report:** The final report is also due at 11:55 PM Saturday, December 3.

- Only one report (in PDF) should be submitted per team.
  - Submit it to CCLE in Week 10, under “Final Report Submission”.
  - 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.
  - NOTE: This report is your intellectual property. If you wish me NOT to show it to other students, please put “Copyright Pending” under the title on the title page.
  - 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, or NOR gates, etc.). Chip outline is OK for microcontroller only.**
  - It consists of the following sections.
- 1) *Introduction and Background (10%)*: 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 (40%)*: Briefly describe the procedures you followed to verify the operation of the components and the complete design. Include schematics (NOT CAD diagrams; see **red** above) of the circuits you used. This should include brief discussions of designs you tried and abandoned.

Specifically, you will be graded on showing, for one of your project tests (pick one):

[a] your ability to design experiments (how you figured out the test setup);

[b] your ability to conduct tests (the actual steps you went through when conducting the tests);

[c] your ability to analyze the data from the test (how you observed, recorded, plotted or put into a table, and applied equations to the data); and

[d] your ability to interpret the results of the analysis in [c] (your thought process, and conclusions that you drew from the analysis).

You must provide this information under headings entitled,

“How We Designed the Test” for [a],

“How We Conducted the Test” for [b],

“How We Analyzed the Test Data” for [c], and

“How We Interpreted the Data” for [d].

- 3) *Results and Discussion (25%)*: Provide graphs and tables of your testing results, as applicable, with discussion of their interpretation. This discussion should be quantitative (meaning that the numbers obtained in your test results should be discussed; if same as in Testing Methodology, then just refer back to that part of your report). Photos of your project are fine.
- 4) *Conclusions and Future Work (5%)*: 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%)*: ALL illustrations must be credited, unless you have developed them

yourselves. Illustrations from Wikipedia should be credited to the illustration author.

- 6) *References (10%)*: If you used software from the web, or consulted some books or articles (or online designs), 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*: Your Arduino code: submit a separate code file with the report. You can submit up to 3 files.