ME 482 Midterm Report

General Instructions

For the midterm report, each team should identify a reputable journal in the field, which is interested in your project topic, and prepare a draft technical paper according to the journal’s format and guidelines and a cover letter addressed to your section instructor that justifies your selection, i.e. why should the targeted journal want to publish your work? Why does your work fit within the journal’s aims and scope?

Some teams can substitute their competition report for their journal. Some teams will need to produce both as their Midterm Report. Discuss with your section instructor for your team’s requirements.

Finding a Journal

To find an appropriate and reputable journal, check the journal’s:

- Impact factor and the community publishing to the journal
- Stated scope(s)
- Recent issues for similar topics or articles (i.e. does your article reference material in this journal)
- Editorial board and their background
- Author resources

Any of the mechatronic or robotic projects should first consider one of the IEEE transactions (and the IEEE transactions template). The aerospace projects should first consider one of the AIAA journals. SAE and ASME journals are also good candidates for specific projects. You are not limited to journals from these organizations, but regardless, you must justify your selection in a cover letter addressed to your section instructor.

Discuss your journal choice with your section instructor as soon as possible.

Formatting and Submission

All the manuscript submission preparation and formatting instructions (e.g. figures, tables, captions, references, text spacing, single or double column, etc.) must be followed. Most reputable journals provide a template and instructions on how to create your manuscript (e.g. IEEE transaction template, which is a good resource regardless of your target journal). The page limit for the main report is 20 pages. Appendices are supplemental material and do not count in the page limit.

A physical bound report is due **Friday, 27 March 2020 by 5:00 p.m.** at locations designated by your section instructor. By the same deadline, email an MS WORD or a LaTeX (include ALL source files) copy to your section instructor.

Content and Outline

We will not provide a formal outline since you should follow all journal specific requirements. In fact, you should look at recent articles in your chosen journal to understand what a typical article
contains (i.e. Introduction, Prior Art, Discussion, Results, etc.). In general though, a journal article should essentially follow the formula:

1. What is your problem or question or hypotheses and why should anyone care?
2. How have other people solved the problem and what are the advantages and disadvantages of those solutions?
3. How have you solved the problem and why does your solution represent an advancement over existing solutions (i.e. higher performance, less expensive, solves one of the disadvantages of existing solutions)? Include detailed technical information including models and analysis sufficient to reproduce your solution.
4. What are the results of your solution?
5. Discussion of results and summary of solution and future directions.

Even though you only have 20 pages you still must fully capture in detail every aspect of your project. The journal manuscript (report) should be accompanied by supporting materials (journals often call appendices supporting materials) that includes more details about your contribution including derivation, codes, drawings, other relevant results, etc. Oftentimes the appendix will be much longer than the manuscript itself since the manuscript often has page limits (e.g., 20 pages for many IEEE Transactions) and you will definitely need to include the details in the appendix. **However, this does not mean that your manuscript can be unclear and incoherent, neither does this mean that the appendix is not important.** A general rule of thumb is: (1) non-expert readers should understand the significance of your work by only reading the manuscript; (2) experts should understand your technical contributions and limitations by only reading the manuscript; (3) practitioners should be able to reproduce all of your results by following both the manuscript and the appendix.