MXET 375 Final Project

Report Grading Rubric

Please Carefully Review all the grading requirements set forth within this rubric, as failure to follow them could result in a reduction in points during grading.

The grading for the final reports will be similar to the grading for the lab reports due throughout the semester. However, since this is a final project, there are a few things to keep in mind:

- The objective of your final report is to provide technical insight into the design, implementation, modeling, simulation, and experimentation of your final project. The report should be structured in a professional technical writing style. Thus, any informal or unprofessional writing will have points deducted. Additionally, avoid personal pronouns or references, as these are not appropriate for technical reports. Just be clear and to the point in your writing. Examples of this include: 'us', 'I', 'our', 'we', 'as you can see', 'the students', 'the team',
- Assume the readers (the graders) have little to no background knowledge on the topics related to your project. That is, don't just show your results or a generic diagram and assume it's well understood what your project is doing or supposed to achieve. Rather, be sure to adequately describe the background information, equation derivations, software flow charts, experimental setup, etc. In past reports, a significant portion of points deducted was due to a lack of clear explanation of the background info, process, and analysis of your project.
- Pay special attention to describing the dynamic nature of your experiment (after all, this is a dynamics course). Be sure to thoroughly describe the quintessential dynamics involved with your systems. Go into the background theory of your system. Create free body diagrams, discuss your system's inputs and outputs, degrees of freedom, etc. This is especially important given most of the projects will have many degrees of freedom. Any formulas derived from external resources or publications must have appropriate references. Also, avoid handwritten equations (Word, OneNote, LaTex, etc) that can all be used to type out your equations.
- It's highly recommended that you include a diagram of your systems, as this could help the reader understand how your system works. Avoid just taking a cellphone picture of setup and using that to describe what your project did. Also, avoid hand-drawn diagrams (Draw.io is a great resource for making professional diagrams).
- Be sure to go in-depth into your Simulink/Simscape diagrams. Describe the blocks you utilized, estimated parameters, unknown parameters, etc. Example: Imagine a Simulink model of an Electric Car. How would the mechanical references of the car's body be connected to the rotational references of the electric motor and tires?
- All figures, tables, plots, etc., must be properly formatted and organized. Please avoid stacking all your images in one portion of the report, as this is unorganized and hard to follow when you reference the images within the main body of the text. All plots or graph axes should be clearly named/labeled appropriately.

Criteria	Ratings				Pts
Section 1 – Introduction **Please write a thorough** introduction to introduce your reader to the project, why this project was chosen, concepts applied from the course, expectations, etc.	**20 Pts – Excellent**	**15 Pts – Good** Overview Some contents are missing or unclear to the reader	**5 Pts – Need** Improvement Significant contents are missing or are unclear to the reader. Objectives of the section are ignored.	**0 Pts – Missing Work** All aforementioned guidelines were ignored.	**20**
Section 2 – Background and Dynamics Modeling Provide a thorough technical explanation of the dynamics of your project. This includes all derivations of dynamics equations, free body diagrams, system-level diagrams, etc.	**20 Pts – Excellent**	**15 Pts – Good** Overview Some contents are missing or unclear to the reader	**5 Pts – Need** Improvement Significant contents are missing or are unclear to the reader. Objectives of the section are ignored.	**0 Pts – Missing Work** All aforementioned guidelines were ignored.	**20**
Section 3 – Simulations and Experimental Setup Describe the setup used to simulate the dynamic systems as well as the steps taken to demonstrate a working prototype of these systems. Include all simulation block diagrams and pictures of your working prototypes.	**20 Pts – Excellent**	**15 Pts – Good** Overview Some contents are missing or unclear to the reader	**5 Pts – Need** Improvement Significant contents are missing or are unclear to the reader. Objectives of the section are ignored.	**0 Pts – Missing Work** All aforementioned guidelines were ignored.	**20**
Section 4 - Evaluate Experimental Results Using the dynamics models, simulations, and experimental results, analyze your results. Determine how accurate/inaccurate your experimentation was and determine what caused this?	**20 Pts – Excellent**	**15 Pts – Good** Overview Some contents missing or are unclear to the reader	**5 Pts – Need** Improvement Significant contents missing or are unclear to the reader. Objectives of the section are ignored.	**0 Pts – Missing Work** All aforementioned guidelines were ignored.	**20**
Section 5 – Conclusion Provide an executive summary of the project. What were the challenges faced throughout this project? What could be adjusted in the future? How could what you learned be applied in the future as an engineer?	**10 Pts – Excellent**	**7.5 Pts – Good** Overview Some contents are missing or unclear to the reader	2.5 Pts – Need Improvement Significant contents are missing or are unclear to the reader. Objectives of the section are ignored.	0 Pts – Missing Work All aforementioned guidelines were ignored.	**10**
Section 6 – Report Writing and Formatting The report is written in a professional, technical way. The report should includes: a cover page, page numbers, section titles, figures have captions and are explained in the test, professional formatting, block diagrams are organized and labeled, axis labels with appropriate units, legends, and titles.	**10 Pts – Excellent**	**7.5 Pts – Good** Overview Minor formatting mistakes or errors. Minor errors in technical writing.	**2.5 Pts – Needs** Improvement Significant formatting errors or mistakes. The report was not written in a technical manner. Significant Grammer/spelling errors	**0 Pts – Missing Work** All aforementioned guidelines were ignored.	**10**
				Total:	**100**