Critical Design Review Grading Guidelines (Report)

Group Assignment (See Technical Communications Guide for formatting guidance on an Executive Summary)

Due at the beginning of Lab 13C

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<td>Report Body</td>
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**Executive Summary:**
Think of this as an abstract of your Critical Design Report. Refer to the section on Executive Summary provided in the Technical Communications Guide for content, format and suggestions. Provide an overview of the AEV project. Develop a conclusion from the results of Performance Tests 1-3 and defend your group’s selection on your final design.

**Introduction:**
Clearly define the purpose of the AEV project. Address the scenario, why the project is important, the operational objectives and requirements, and how an AEV will be used to meet the objectives and requirements.

**Preliminary Design Phase:**
Provide a brief description of the group’s two AEV initial concepts. Include the figures within the body of the report and ensure that the figures are labeled and formatted properly.

**Experimental Testing and Analysis:**
Discuss the objectives, strategies taken, and results from the design cycle and energy optimization during the performance tests.
Final Design:
Defend the group’s final design decision. Support the group’s decision with experimental results. Include an engineering drawing (3 orthographic views and one isometric view) of the group’s final AEV design and utilize it within the discussion.

After the defense of the design, describe the programming strategies the group used and the results of these strategies. Discuss how the team determined the best way to move forward in order to meet the operational objectives consistently while improving the AEV’s efficiency.

Lastly, what observations did the group make during final testing? How did the AEV behave? How efficient was the vehicle? How did it balance on the track? This is where you discuss the scores on your final test score sheet. Include your team’s scoresheet in the Appendix.

Create a figure of power (Watts) vs. time (seconds) for the final AEV track testing and a table (similar to System Analysis 1 and 2) consisting of the following:

1. Phase
2. Arduino Code
3. Distance
4. Total Energy Used for each phase

Use this table to aid in the group’s final discussion. Incorporate the figure and table into the conversation and reference appropriately.

Conclusion and Recommendations:
Develop a conclusion from the results obtained from the Performance Tests. Summarize the report contents and the group’s findings throughout the project. Also, provide a few recommendations for improvements to the AEV project.

Writing Style
Grammar: See Technical Communication Guide for guidelines
Organization and Progression: make sure the summary has natural breaks, ideas are properly separated by paragraphs, and ideas are fluently connected
<table>
<thead>
<tr>
<th>Appendix</th>
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<tbody>
<tr>
<td>Provide an AEV Final Design Assembly and Working Drawing Package. Include an isometric with parts identified with a Bill of Materials, and detailed orthographic drawings of any non-standard (not in the kits) parts.</td>
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<tr>
<td>Group Grade</td>
<td>200</td>
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Note: 4 POINTS will be deducted if the Grading Guidelines are not attached.

10 POINTS will be deducted if the Lab Participation Agreement is not attached in the Appendix.