ENGINEERING REPORT INSTRUCTIONS

FOR COMPETITION PROJECTS

**REPORT TEMPLATE**

The following is a template students may use to provide structure/outline to their engineering report. It is a good place to start, but really should not be used for the actual, final report. The final report should resemble an actual written project, complete with a title/cover page, and bibliography if necessary.

1. **(a) Identify the Need (5 points):**

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**(b) Define the Problem (5 points):**

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1. **(a) Identify and Discuss Constraints (5 points)**

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| (i) Time allocated to project: |
| (ii) Personnel (i.e. students assigned to project and special skills): |
| (iii) Organization of team (i.e. division of labor, roles, if any; and plan for team completing project i.e. when, where, and how will team work to complete the project?): |
| (iv) Materials needed and their availability: |
| (v) Material properties that must be considered: |
| (vi) Other constraints: |

1. **Identify and Discuss Criteria for Success (5 points)**

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| (i) Performance standard for determining the winning team (refer to the rules): |
| (ii) Human factors (for example: the art of rowing, stabilizing the boat in the water while entering, measuring the vertical distance traveled by the rocket, etc.): |
| (iii) Craftsmanship (for example, neatness, symmetry, cutting straight lines, thoroughness, etc.): |
| (iv) Durability of material and consequently the project, given the performance environment): |
| (v) Safety and affects on the surrounding (i.e. consider potential hazards and damage to property): |
| (vi) Other criteria for success: |

1. **Draw or Cut and Paste in 2 Project Designs (use pencil, pen or a computer program). (20 points)**

**(a) Preliminary Design Options (10 points).**



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| Why is Design 1 being considered? Explain: |



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| Why is Design 2 being considered? Explain: |

**(b) Select a Preliminary Design from the 2 Designs. Explain why the design was selected (10 points).**

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| Design selected: |
| Explanation: |

1. **Construct Preliminary Project (points accounted for in next section)**
2. **Test and Evaluate the Preliminary Project (30 points)**

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| **(a) Document the performance outcome:** focus on what team members learn from testing the project. Did the project perform according to plans? Why did it or why didn’t it perform according to plans? |
| **(b) Improving performance:** What can the team do to improve the project’s performance? |
| **(c) Improving the project’s design:** How will recommendations to improve performance impact the design of the project? Can the project’s design be improved? Document your recommendations. |

1. **Repeat Steps 1 – 4 by (30 Points):**

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| 1. Identifying new needs, and redefining the problem as needed. |
| 1. Identifying any new constraints or criteria for success as needed. |
| 1. Based on performance observations, develop a final project design. Provide a drawing of the final design, using pencil, pen or computer program. Feel free to cut and paste in the design using scissors and paste, or a computer program.   New Project Design: |
| Why was the new project design selected? |