**PROJECT TITLE**

Team# and Names

Submission Date

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**Abstract**

A 100-200 word technical summary of the project is expected. Rest of the report can be divided into sections and sub-sections as you deem appropriate for your project. This template provides guidelines, and can be modified to suit your approach. This report should not be a series of disparate sections stapled together. Instead, think of it as a report to the VP of Product Engineering, providing the design, manufacturing, and cost information necessary for them to make a decision with regard to how and where to make the product. The project report pdf should be submitted in Moodle (no hard copies).

1. **PRODUCT DESIGN AND SPECIFICATIONS**

A section describing the motivation and background of your chosen product design, its important functional features, rationale behind design and tolerances selected, and any other important engineering considerations that went into your design.

3D CAD models can be included in this section if it helps to explain your design, but detailed 2D drawings complete with engineering specifications should be in the appendix. All figures and tables throughout the report should be numbered in sequential order, and cited and discussed within the main body.

1. **PROCESS PLANNNING AND MANUFACTURING**

This section should explain in detail, all aspects related to the part’s manufacturing. The detailed process plans should be included in the appendix and not in this main body, but this section should discuss the rationale behind the operations selected and their sequence, any alternative process that could have been used but were not etc. For each operation, there should also be a discussion about setup, tooling and other necessary non-value added activities. The focus should be on all operations, not just machining. These might include fixturing and clamping, refixturing in a different orientation, cleaning, assembly etc.

Important aspects of your Fusion360 programming and actual manufacturing should also be described in this section. For the process plans, toolpaths and machining times can be used directly from your programs (no need for stepwise calculations) and actual times measured during the operation in the lab; detailed time calculations are not required unless the machining operation was performed manually. Pictures taken during the machining operations, clamping/fixturing etc. can also be included in the process plans and discussions to aid your explanations.

1. **PRODUCT INSPECTION PLAN AND DATA**

This section should describe the inspection plan including inspection methods and instruments to be used, gage designs etc. The rationale behind the steps involved should be explained. Actual measurements of your parts according to the inspection plan should also be presented in a systematic manner.

1. **PRODUCT MANUFACTURING ECONOMICS**

This section should describe the economics of manufacturing your product in the US and Mexico. Various components of the cost equation should be discussed and their rationale justified. Any assumptions should be clearly stated. All reference sources should be cited.

1. **CONCLUSIONS**

This section should serve to tie up any loose ends and discuss alternative designs and methods you may have considered during the project, any difficulties encountered, lessons learned, and suggestions for future improvements of your product design and mass manufacturing.

**APPENDIX A**

**REFERENCES**