ENGINEERING DESIGN PROJECT
DELIVERABLE E – PROJECT PLAN & COST ESTIMATE
TASK 04: PROJECT RISK ANALYSES & MITIGATION PLANNING
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1. Abstract

This Document comprises the 5th and Final Task of Deliverable E, which contains elements that are somewhat derived from the content of Task 04, The Prototype Testing Plan that outlined what test our team would employ in order to identify the potential structural strengths and weaknesses of our design (and therefore informing us on where to improve and where to abandon, where to integrate or merge, and so on). Once this Document is finished, our Objectives for Deliverable E would have been met.

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2. Introduction

Our project is one that presents any risks, and this must be met with well-formulated plans and proactive analyses that can ensure that success is still possible for each deliverable through even the most grave of risks, and independent of the frequency of the risks that the team faces as the project evolves through its many design and prototype phases. This document will outline the major analyses that we, as a team of Engineering Students and competent Team Project Members, have performed on the outlook of our project timeline from now (our submission of Deliverable E: Project Plan & Cost Estimate), the subsequent Deliverable submissions (F to H), up to Design Day (November 29th), and through until we successfully complete the Design Project by submitting Deliverable K: The User Manual, on December 10TH. This document will summarize the risks that we have identified from each deliverable's completion, and it outlines the plans that we have developed, as a team, to mitigate the effects of these potentially-detrimental disruptions to the trajectory of our project to its successful completion.

With the nature of our project being unknown at certain points (such as modifications to budgets and design specifications/preferences being revealed at certain parts of the project that would have been beneficial to know closer to when the project began), it is difficult to guarantee that the analyses and accompanying mitigation planning outline will be exhaustive or completely indicative of the risks associated with the deliverable's (and, by extension, the project's) completion. The analyses performed and the mitigation measures we have extrapolated from these risks properly and accurately reflect the uncertainties that we have identified from our experience through the completion of Deliverables A through D, and our team's at-present completion trajectory.

3. Background on The Analyses & Mitigation Planning Summary

The need for this deliverable to demand the inclusion of this kind of analysis and accompanying outline in its Project Plan portion is extremely crucial to the success of our project completion, and the occurrence of the demand for this analysis and plan are timely, with this Deliverable being in the exact halfway point of the overarching project, and also acting as a bridge between the Design Phase, that our prepared for in Deliverable A and completed in Deliverables B through D, and the Prototyping and Feedback Phase, that we are preparing for in this Deliverable and will comprise our cumulative progress through Deliverables F through H. The risks we have encountered in the project so far have informed us on the both the risks we may face in the near or distant future (for example, a plethora of risks ranging from ones associated with our completion of our first prototypes, to the successful delivery of our solution presentation). This type of planning, though informed and evidence-based, is not infallible, because of the nature of the source of our information and supporting evidence. We are only performing these analyses and constructing appropriate measures to mitigate these risks based on the knowledge and experience that we have gained while working on this project so far (from our completion of Deliverable A until now); there are no other Engineering Projects that we been a part of that will inform us on what risks to expect in this project, therefore we must solely rely on our present experience as a tool to predict what risks may transpire in the future.

4. Project Risk Analysis & Associated Mitigation Strategy (From Deliverables F to K)

The risks associated with the completion of our project can be divided into two general categories: Prototyping Deliverable Risks, and Design Presentation Deliverable Risks. Prototyping Deliverable Risks are associated with Deliverables F through H, and involve our construction of the three prototypes we need for our client's feedback on our Design Implementation. Design Presentation Risks are associated with Deliverables I through K, and involve our presentation of our final product, and what our project timeline and completion will look like or head towards during that critical time period.

Risk Category	Associated Risks	Mitigation Strategies
Prototyping Deliverables (F through H	• Not purchasing Materials on time • Not assembling different parts of a prototype on time • Not taking into account the time spent auto-assembling a prototype (such as a 3D printer), which might affect task dependencies • Lack of required approval of material purchases for the prototype • Not acquiring feedback from client in time, disrupting the overall flow from prototype to client feedback and back again • Not implementing aspects of client's feedback	• Include material purchase in task plan updates • Make sure to assemble all parts of the prototype as soon as possible, preferably on day of fabrication • Always indicate length of each task in the task plan to prevent a backlog • Always ask Tas/PMs what needs to be approved • Include client feedback in task plan timeline, to ensure that this is not skipped over, especially during available times • Record all feedback and post to Team Communication System immediately after meeting. Mark this as important
Design Presentation Deliverables (I through K)	• Not having final product ready • Not having presentation ready on time • Lack of proper visuals • Lack of proper elements of the presentation or user and product manual • Not including important or required elements of the milestones of the project	• Make sure to stay on track to finish the final product on time • Make sure to include proper visuals • Review what needs to be included in the Presentation and Manuals • Record all milestones on Team Communication System regularly. Mark as imprtant