



اَبُو سَيِّدِي تَيْكُو لُو كِي مَارَا
UNIVERSITI
TEKNOLOGI
MARA

MEC332 – MECHANICAL ENGINEERING DESIGN

FINAL YEAR PROJECT (FINAL REPORT)

MULTI-PURPOSE FURNITURE

FACULTY:

FACULTY OF MECHANICAL ENGINEERING

(J4EM1105L/GROUP 5)

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EXECUTIVE SUMMARY

The main purpose of this report is to propose on our final year design project. Every single aspects and details of the project were explained in this report in line with the requirements in the checklists provided by the lecturers. The major highlight of this report is the design of our project, from multiple design sketches to select the final design to the final rendered design in solidworks software.

This report also highlights the design details such as design dimensions, engineering calculations and engineering analysis which calculates the strength and maximum force that a part could withstand. Morphological Chart and Pugh Chart were also used in determining the final selected design of our project.

The most challenging part in preparing this report is rendering the model in solidworks software. Some parts in the final sketch had to be improvised when converting the sketch into 3D rendered model in the solidworks software. The cost analysis is also shown in this report so that the calculations on the selling price can be made.

Finally, a conclusion is also made which concludes the overall objectives of the project. It also states the problems encountered while completing the project. In the recommendation section, a few suggestions on how to improvise the product and overcoming the problems for future reference have been made. This would help us to improvise and be more creative if the product were to be sell and manufactured for real.

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1.0: INTRODUCTION

1.1 Overview of the Project

The idea of the innovation of this multi-purpose furniture came into mind as the teammates relates the problem encountered relating to the pandemic situation. While working throughout this project, a lot of brainstorming and teamwork are required for every aspect and details of the design project. The main idea of this project is to save space by combining the furniture such as study table, wardrobe and book shelves into one furniture, hence the name multi-purpose furniture. As the target market is for the less-affordable people, the material used are also taken into consideration as it will determine the cost of the final product.

1.2 Objectives

The objectives of this innovation project are listed as follows:

- To make a room or space less crowded by combining the features of wardrobe, working table, book rack, chair storage and stationeries organiser into one furniture.
- To design a multi-purpose furniture with an affordable price for the customers. To reduce energy consumption through the wheels and easy-to-assemble features which makes it portable when moving or disassembling the furniture