



## MEC291 MECHANICAL ENGINEERING DESIGN LAB

**PROJECT NAME:**

**MULTIFUNCTION BOOKSHELF**

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### **A. PROPOSED PROJECT**

**1. PROJECT TITLE: Multifunction Bookshelf**

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## **1.0 Introduction**

### **1.1 Background of study**

Bookshelf is a place used to store books. It been used in many locations as library, public, and house. The main objective of this bookshelf design project is to make the bookshelf can be seated so people can read book comfortable. This project also necessary to help users to save some spaces in their houses and provided various uses which can be enjoyed by the user.

### **1.2 Problem Statement**

Nowadays there is a lot designs of the bookshelf people can get from the furniture store. Even though there is a lot of designs, it is only used to store books and nothing else. People always looking the place for a seat to read book comfortably. In libraries, chairs and tables are provided because the libraries are spacious, but it is different with the room with small space.

### **1.3 Objective**

- I. To design a bookshelf that can be used for multiple purpose using Solidworks software
- II. To test the weight that can be lift by table.

## **1.4 Scope of the study**

The project Objectivity is to produce a multifunction bookshelf that can be used easily and comfortably. This project is deliverable because the bookshelf is made for multipurpose and included with the chairs as seats. The bookshelf must meet with the design in solidworks and the top of the bookshelf need to be modified to make a table. It is high maintenance because there are a few complex mechanisms used in this project. The dimension of the chosen bookshelf is  $15 \frac{3}{4} \times 41 \frac{3}{4}$

## **1.5 Significance**

In producing a bookshelf, it requires a variety of materials, due to that, various studies have been done through various sources. Engineering software such as SolidWorks is used in this multifunction bookshelf project where it is used to make engineering analysis, 3D drawing and assembly drawing. This multifunction bookshelf project should help user generate creative ideas from each other's imagination. This is shown when producing sketch drawings to find a suitable design for this bookshelf.

## 1.6 Expected Result

The design analysis and engineering of this bookshelf make this design bookshelf need to be an alternative design for every household, especially for households and libraries. The design should fulfill all the user requirements and give solutions to the problem that faced by engineer. Figure 1.6.1 is the expected result we got from this project



**Figure 1.6.1 Multifunction Bookshelf**

# **Literature Review**

## **2.1 Introduction**

This section will explain the review from various previous research which related to this Final Year Project. There were previous studies about bookshelves which involve about design, strength, and materials.