



اُونِيُوَرَسِيْتِي تِيكْنُوْلُوْجِي مَارَا  
UNIVERSITI  
TEKNOLOGI  
MARA

**MECHANICAL ENGINEERING DESIGN**

**(MEC332)**

**Final Year Project**

**Multi Level Moving Storage Rack**

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## **1.0 Introduction**

### **1.1 Overview of the Project**

The purpose of this project is to design an industrial storage system that mostly takes up vertical space without the need of ladders and forklifts. Various engineering concepts and methods are put into this project in order for it to have the optimum strength, durability, performance and safety so that it can achieve its purpose. This project consists of several individual parts which are the internal mechanism, the platforms, the fram, the belt system, the motor and the external body. Each of the parts has its own important role in order for the product to achieve it's main objective with high efficiency and safety

### **1.2 Design Objective**

The objectives of the project is stated below :

- I. To design an industrial storage system that mostly takes up vertical space
- II. To eliminate the need for ladders and forklifts.
- III. To implement the use of computer aided process in a project such as Solidworks

### **1.3 The scope and limitations of Project**

The project has several scope and limitations which are shown below :

- To have the adequate amount of ergonomics in terms of body posture while standing.
- The maximum amount of load a platform can withstand is 30 kilograms.
- Maximum height of the movement of the platform is 230 centimeters.
- A minimum of 5ft x 3ft area is needed for the product to operate properly.

### **1.4 Significance of the Project**

This project has a lot of significance which is all show below :

1. UITM Bukit Besi is mostly a campus that revolves around the Faculty of Mechanical Engineering. Because of this, it is only logical to focus on a problem that is related to our industry
2. To help us gain knowledge in soft skills in designing. These soft skills include problem identification, 3D design using computer aided programs, design evaluation, cost analysis and design prototyping.
3. To work together as a team online. As this project is done during the movement control order. Students are required to do all their teamwork online. Because of this, students are required to adapt to online platforms in order to do discussions, group work and also manage time for meetings
4. To work and manage time under pressure. High levels of problem solving and workloads are required to be done in a limited amount of time to meet the given due date of the project