

Faculty of Mechanical Engineering

**UiTM Cawangan Johor Campus Pasir Gudang**  
MEC332 Mechanical Engineering Design  
Final report and video presentation submission form

**Submission form:** Final report and video presentation

**Due date:** Week 14

**Final year project detail**

Group/Team	Final Year Project Title	Submission Date
J4EM1105I (1)	STAIRS-2-ELEVATOR	1 <sup>st</sup> FEBRUARY 2021
<b>Supervisor</b>	EN. NORHISYAM BIN JENAL	

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**Instruction for submission**

1. Please **upload your final report and video presentation** for evaluation to google drive.  
*\*The link will be provided by MEC332's lecturer*
2. Please **copy link of your group folder and paste in the table below** before submitting this form to your supervisor
3. Supervisor will **check the contain of the folder and sign the submission form** as a prove he/she received the final report and video presentation

**Google drive link for final report and video presentation**

Final report and video presentation (Google drive link)
<a href="https://drive.google.com/drive/folders/118KD_o2CVv3lTUuWhhpDwK3LaZjMoBLa?usp=sharing">https://drive.google.com/drive/folders/118KD_o2CVv3lTUuWhhpDwK3LaZjMoBLa?usp=sharing</a>

I confirm that I already received the materials as in link provided and the link can be assessed

**Supervisor's signature:**

**Date:**

Note: Please submit this form to your FYP supervisor and return back to MEC332 lecturer for the record (In PDF format)



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MARA

**MECHANICAL ENGINEERING DESIGN**

**FINAL YEAR PROJECT (FYP)**

**MEC332**

**TITLE: STAIRS 2 ELEVATOR**

**GROUP: J4EM1105I**

**SUPERVISOR: ENCIK NORHISYAM BIN JENAL**

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## **1.0 INTRODUCTION**

In this section, we will introduce our project in terms of overview of the project, design objective scope of the project, significance of the project and the project planning.

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

As we know, this task is for the final year project of this subject which is Mechanical Engineering Design, MEC 332. In this project, each team have to provide a design that can bring benefits to the people. Besides that, there are five team members and a supervisor for each team. The purpose of having a supervisor is to guide the team and see how the progress going. In order to do that, we did a meeting once a week with the supervisor so, we can discuss about the project. After that, this project has been carried out for 14 weeks.

For our team, each of our member has provided their idea for this project. After that, each of the member and the supervisor voted for the product that they like the most. The product that get the most vote is the one that we use for this project and the name of that product is the Stair 2 Elevator.

The Stair 2 Elevator is a heavy duty ladder that can turn into flat at a certain angles when people want to transfer loads from high to low places and can turn back to normal ladder when people want to climb from low to high places. We have come out with some design that suitable for this ladder and the most suitable design that we choosed is the design that have good criteria for each aspect.

Besides that, we used an engineering software which is Solidwork to design our product. Each of the member has designed their part for the product. After that, we assemble the part and make it a complete product. In order to do this, we worked as a team so it can be done properly. When all of the design process has been done, we have to make a presentation to explain about our product to the panel. The panel gave us the final marks for the project.

## **1.2 Design Objective**

When we want to design a product, we have to know the objective of the design. For our project, we have some objective that relevant to design our product. One of the objectives is to design a 3-Dimensional drawing of a portable ladder using Solidwork Software.

Besides that, the objective of the design is also to simulate the mechanism of the portable ladder. The purpose of the simulation is to show how the product will function and operates when people using it. In order to do that, we will show the simulation using Solidwork software.

Last but not least, the design objective of this project is to analyse the mechanical properties of the ladder. Mechanical properties are the physical properties that a material exhibits upon the applied forces. For example, the strength of the product, hardness and many more. For our project, we will show the mechanical properties of the Stair 2 Ladder.

## **1.3 Scope of the Project**

Scope of the project is the requirement, function and the features of the product. Scope is also defined as getting information required to start a project and the features that the product would have to meet its requirements. For our product, we have some features and requirements that suitable with the function.

For your information, we are not allowed to use any electrical element or component for this project. In that case, we have designed a product that only use mechanical elements and components. In the beginning, it was hard for us to gain the idea on how to design a product that only use mechanical element but after doing some research, we have successfully produced and create a design that suitable for the requirement of this project.

Besides that, we use 27 types of components that are available in the market. For example are the screw, bolt, handle, heavy duty adjustable bracket and many more. After that, the maximum height of our product which is Stair 2 Ladder is 2 meters. This is to make it easier for the user to climb to a high place.