



اَوْنِوَرَسِيْتِي تِي كُونُوْمِي مَارَا
UNIVERSITI
TEKNOLOGI
MARA

FACULTY OF MECHANICAL ENGINEERING(EM110)

MEC332 - MECHANICAL ENGINEERING DESIGN

PROJECT TITLE: FOLDING DOOR FOR MODERN HOME

GROUP A2

PREPARED BY:

NAME	STUDENT ID
ALLEISTER JUGAH ANAK UNJAH	2018419988
ALDRIAN ZAHRIUS ANAK ADRICK	2018269786
GABRIEL JOHNSON ANAK ORLANDO	2018269392
HANS HERALD JEWASTEN	2018212058
MAURINE SHASA ANAK MORRISON	2018419118

PREPARED FOR:

SIR AHMAD FAIDZAL KHODORI

SIR AB AZIZ MOHD YUSOF

TABLE OF CONTENTS

CONTENT	PAGE
1.0 INTRODUCTION	4
1.1 Overview of Project	4
1.2 Project Objectives	5
1.3 Scope of Project	5
1.4 Significance of the Project	6
1.5 Project Planning	7
2.0 PROBLEM DEFINITION	9
2.1 Problem Statement	10
2.2 Problem Identification	10
2.3 Customer Requirement	12
2.4 Product Design Specification	16
3.0 LITERATURE REVIEW	18
4.0 CONCEPT GENERATION AND EVALUATION	20
4.1 Concept Generation	20
4.2 Concept Evaluation	28
5.0 EMBODIMENT OF DESIGN	32
5.1 Product Architecture	32
5.2 Configuration Design	34
5.3 Parametric Design	37
5.4 Layout Plan	40
5.5 Engineering Calculation	41
5.6 Engineering Analysis	47

6.0 DETAIL DESIGN	
6.1 Finalized Design	48
6.2 Part Drawing	50
6.3 Assembly Drawing	60
6.4 Cost of Analysis	61
6.5 Break Even Analysis	63
7.0 PROTOTYPING	64
7.1 Manufacturing Detail	64
7.2 Product Manual	66
7.3 Product Testing	67
8.0 CONCLUSION AND RECOMMENDATION	68
8.1 Conclusions	68
8.2 Recommendation of Future Work	69
REFERENCES	70
APPENDICES	71

1.0 INTRODUCTION

1.1 Overview of the Project

A project overview is a short explanation of the project that the customer would like to walk over before going through further specifics. Nowadays, people are searching new alternative exterior door for their property aside from using sliding door. Folding doors make the common sliding doors as a brilliant alternative. Thanksto their chic styling and space-saving versatility, they are becoming increasingly popular. This project of folding door is specifically for modern home who have troublewith space, flexibility, and security of the family members. Many people feel that theydo not have the interior space accessible for sliding door to open inside. With bifold doors, for inside opening, many find it easier to make the limited amount of interior space available. Giving more options when choosing how to open doors is certainly apro.

1.2 Project Objectives

The project aims are to increase space in room. Compared to that of a regular single door, this unique type of folding action ensures that the door needs only half the opening area. If space is limited in home, maximizing the amount of space is the key. This folding door is a great option when buying or replacing door in home to add some space.

Besides that, to make it safe and secure due to operational of the mechanical door is different than the normal door is one of the project objectives. This is because safeness and security are one of the main considerations when selecting a door. This is to make sure families with young children, wheelchair users or people with disabilities can use and operate them safely.

Last but not least it to improve the folding door mechanical reliability. When selecting its mechanical component such as hinges and door lock mechanism, these steps need to be considered if wanting a long-lasting folding door. This provides maximum efficient performance to the door.

1.3 Scope of Project

This project focuses on building a folding door for modern homes. This project produces a better choice than sliding door or French door where it can save space, more secure and improvement on mechanical reliability. Besides, the scope of folding door is targeting the customer needs for big space in their home. This prove that the project needs to focus on their development and design phase to produce desired form of output