

UNIVERSITI TEKNOLOGI MARA

**DEVELOPMENT OF A MOTORIZED
SKATEBOARD**

NURZARIFAH ATHIRAH BINTI ZAMANHURI

Dissertation submitted in partial fulfillment
of the requirements for the degree of
Diploma
(Mechanical Engineering)

College of Engineering

FEB 2024

ABSTRACT

From this project the safety and environmental effect of motorized skateboards were investigated. According to findings, many individuals in the community are concerned about the safety of these skateboards, which may reach high speeds and are sometimes difficult to manage. It is also discovered that motorized skateboards have a detrimental influence on the environment since they run on batteries and energy. To address these issues, a novel motorized skateboard was proposed so that it can be more closely controlled, if not outright outlawed, in order to safeguard the safety of riders and pedestrians while also reducing their environmental effect. Hence, the idea that has been made for doing this project is design and fabrication of motorized skateboard. It was made through a lot of machining process to make it happen. Such as . Welding, drilling and cutting. Besides, the method that use for this project is motorized skateboard with remote control.

ACKNOWLEDGEMENT

Firstly, I wish to thank God for giving me the opportunity to embark on my diploma and for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor, DR Kamariah Binti Md Isa because she has been helping me a lot through this 2 semester of final year project. I can't describe how much sacrifices that she has done for helping me in giving an idea and find a way to solve my problem in this final year project.

Other than that, this dissertation is dedicated to my father and mother for the vision and determination to educate me. This piece of victory is dedicated to both of you. Alhamdulillah, your guys appearance make me always not to forget that you guys is my inspiration to keep on and not giving up in this journey.

I would also like to thank Puteri Nor Azwina , Syahirahtul Nabihah , Nurul Shaira for their assistance and support. Their help and contribution were greatly appreciated and played a crucial role in the success of this. Without their help, this dissertation would not have been possible.

Last but not least, I wanna thank me, I wanna thank me for believing in me, I wanna thank me for doing all these hard work, I wanna thank me for having no days off, I wanna thank me for never quitting , I wanna thank me for always being a giver and trying to give more than I receive. I wanna thank me for trying to do more right than wrong. I wanna thank for just being me all time

TABLE OF CONTENTS

	Page
CONFIRMATION BY SUPERVISOR	3
AUTHOR’S DECLARATION	4
ABSTRACT	5
ACKNOWLEDGEMENT	6
TABLE OF CONTENTS	7-8
LIST OF TABLES	9
LIST OF FIGURES	10
LIST OF ABBREVIATIONS	11
 CHAPTER ONE : INTRODUCTION	 12
1.1 Background of Study	12
1.2 Problem Statement	13
1.3 Objectives	13
1.4 Scope of Study	13
1.5 Significance of Study	14
 CHAPTER TWO : LITERATURE REVIEW	 15
2.1 Benchmarking/Comparison with Available Products	15 - 17
2.2 Review of Related Manufacturing Process	18 - 19
2.3 Patent and Intellectual Properties	20 - 23
2.4 Summary of Literature	24 - 25
 CHAPTER THREE : METHODOLOGY	 24
3.1 Overall Process Flow	24 - 26
3.2 Detail Drawing	27 - 32
3.3 Engineering Calculation and Analysis	33 - 34
3.4 Bill of Materials and Costing	35

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

A motorized skateboard is one that has a motor and can be moved by humans without the need of any force. This invention was made for those who enjoy skating, but in a unique fashion in which the skateboard can go on its own and the user simply needs to put their feet on the deck and move about with it. Furthermore, the skateboard is often controlled by a wireless hand-held throttle remote or by the rider changing body weight between the front of the board for forward speed and the back for braking. A skateboard, on the other hand, is a short board placed on small wheels that is used for coasting and doing athletic tricks.

As a result, motorized skateboards are fairly fresh to those who have never heard of them, and they are something that people should try. Because kids only know the skateboard is just a deck, they need to push their feet on the ground to move the skateboard. Anyway, this autonomous skateboard comes with cruise control and a motor that allows the skateboard to go from one location to another. Cruise control is a useful function seen in many automobiles, and it is easy to put it on a motorized skateboard to make the experience even more comfortable. This will allow individuals to drive at a consistent speed in their little vehicle.

Because the battery is a finite source of energy, the possible distance travelled is determined by the amount of energy spent when riding on the skateboard. Whereas reduced energy consumption offers for extended battery life on a single charge. As with many other equipment, this is desirable for economic and environmental reasons, therefore how the cruise control impacts energy usage is of importance.