

UNIVERSITI TEKNOLOGI MARA

**DYNAMIC CONTROL OF ROBOTIC
ARM MANIPALUTION FOR
EDUCATION PURPOSE**

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ABSTRACT

Autonomous robots have been introduced to numerous industries in this era to aid with transportation, production, and simple task handling. Robotic arms are used in the manufacturing sector in the automobile, assembly, and lifting of heavy objects. However, we still need to learn how to operate and program the robotic arm in order to meet future demands. In real time, students can be exposed to various learning types through practical or physical simulations. Students must conduct educational study on the robotic arm for this assignment.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Education is the most important thing that everyone needs to have in this new, modern era. Knowledge gained through education can help someone learn new things and improve their skills in the future. There are lots of ways to gain knowledge or pick up new skills, including attending theory classes, working on practical or hands-on projects, and prototyping [1].

The main reason I choose to make robotic arm for education purpose is because to make process learning about robotic is more efficient. It is because the process learn that we have are not practical to student to understand the application. Also the robotic arm for education in market are to expensive to buy for student.

This project's main objective is to provide educational opportunities by showcasing the equipment used in robotic arm manipulation [3]. The objective in designing and developing the machine is to produce a working prototype that can be an effective teaching instrument. By studying the kinematics, materials, and joint configurations of the arm, students and learners will obtain insights on automation, control, and robotics [4]. This project also has larger industrial application implications. Our work has generated ideas and directions that companies and employees may use to improve their manufacturing processes through creative robotic arm solutions.

1.2 Problem Statement

Today, industry is moving to industrial revolution 4.0, so now we have to learn a new skill, mostly in robotics. Because robots are dominant in many industries, like automotive. The first problem students are facing is the cost to buy. In the market, many suppliers sell at a higher price, and students are not affordable.

Second, choosing the best robotic arm made completely of steel can be difficult in and of itself. These arms are made by many manufacturers and are so heavy that it