

**UNIVERSITI TEKNOLOGI MARA**

**DESIGN AND FABRICATION  
FOLDABLE WELDING CART**

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## **ABSTRACT**

In the contemporary age, the utilization of a welding cart is imperative in various sectors such as manufacturing, construction, and automotive. A welding cart serves as a transport vehicle used by welders to store and transport a variety of welding tools and materials. Numerous issues have been reported by users of this product, including inconveniences, inadequate storage, and improper tool arrangement. Therefore, based on the reported problems, it can be inferred that addressing these concerns is crucial. The primary goal of the project is of significant importance, as it determines the desired outcomes to be achieved upon its completion, ultimately dictating its success or failure. The objectives that we aim to accomplish include ensuring safety, incorporating aesthetically pleasing designs, and providing accessibility to tools. The methodology employed in this project involves outlining a systematic approach to investigating key focal points. This entails determining the applications utilized in designing the product, establishing a budget, and setting an estimated project completion time. The anticipated results of the project refer to the expected outcomes that the test designer envisions upon the correct execution of the test case. The desired results for this project include ensuring the mobility of the wheels, adjust ability, fold ability, and a product that possesses sufficient strength to withstand heavy loads.

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# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of Study**

In the current technological era, many manufacturers still rely on welding for processes in the manufacturing and construction industries. Consequently, their progress is hindered as they are required to transport heavy welding machinery and tools to different locations. The increasing demand for a specialized cart to efficiently transport welding materials and equipment arose with the advancement and growth of welding technology. As a result of this persistent issue, some engineers have devised a solution in the form of a welding cart for the effective transportation of machinery and tools.

The primary concerns associated with this project revolve around the welding cart's inefficiency. This inefficiency leads to instability in supporting heavy loads, such as machinery and various tools, causing hindered mobility due to the lack of stability. Moreover, most cart designs lack sufficient storage capacity to accommodate welding equipment like welding rods, helmets, and gloves. It is essential to assess the current storage needs and consider incorporating shelves, hooks, or compartments to address this issue.

To mitigate these challenges, engineers must develop a suitable cart that addresses the current problems. Ensuring proper welding of the cart is crucial to maintaining stability while incorporating wheels for easy mobility. The inclusion of compartments within the cart is vital to enable users to organize their welding tools effectively, promoting safety and efficient work practices.

Therefore, the development and fabrication of a foldable welding cart are imperative. The objective of this endeavor is to design a cart that alleviates challenges faced by welders and professional engineers during welding processes in manufacturing and construction settings. The design process and chosen concept will be modeled using SolidWorks in 2020. As part of the proof of concept, a prototype will be constructed by the culmination of the final year project.