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UNIVERSITI
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MEC 300

**HULL DESIGN AND STABILITY ANALYSES OF A JET
SKI BOAT ATTACHMENT**

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SEMESTER OCT – FEB 2024

ABSTRACT

The final year project involved the designing and stability analysis of the boat's hull. The major aim of completing the project is to identify the problem faced by people nowadays when attempting to have a recreational activity related to water activities that requires transportation. This project requires the remodeling of existing hull design while considering factors such as vessel size, cargo capacity, and anticipated operational requirements. The objective of this project is to design a suitable hull design that suits the purpose of helping people to have a recreational activity and to analysis the stability of the designed boat. The stability of the boat is crucial as the safety of people should be the first factor of consideration in boat designing. The method used throughout this project in designing 3D models are by using CAD softwares such as Maxsurf, Solidworks, Rhino and others. The stability analysis was done by going through various calculation programs which would then give the most crucial data that can be used to examine the stability of the boat. This analysis involves calculating various stability parameters, including metacentric height, righting arm curve, and stability curves. The hull form used in this project is catamaran as the breadth of catamaran hull is wider and can generally accommodate more people as the spaces increases. The findings in this project shows that the attachment can operates as the stability of the attachment met the minimum requirement of the standard by analyzing the data obtained from the softwares. Improvement can be made to the boat by doing more research in the center of gravity of the boat and the center of buoyancy of the boat. In overall, the objective of the project is achieved as the boat designed is completed and the analysis done to the design indicates that the attachment is stable.

ACKNOWLEDGEMENT

I extend my sincere gratitude to all those who have been instrumental in the completion of my final year project. Firstly, I want to express my appreciation to my project supervisor, Ts Mohd Azahari Bin Johan, for their invaluable guidance and support. Their expertise and insightful feedback have been crucial in shaping the project and navigating its complexities.

I would also like to acknowledge the collaborative effort of my classmates and friends who, through their encouragement and shared perspectives, have contributed to the project's overall richness. Their camaraderie has made this academic journey more enjoyable and rewarding.

Additionally, I extend my thanks to the research participants, library staff, and anyone else who directly or indirectly played a role in the success of this project. Your contributions have not gone unnoticed, and I am truly grateful for your involvement. Finally, I want to express my deep appreciation to my family for their unwavering support and understanding. Their belief in my abilities has been a driving force, and I am thankful for the love and encouragement they have provided throughout this academic endeavor.

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