

**UNIVERSITI TEKNOLOGI MARA**

**PRODUCTION DEVELOPMENT OF CATAMARAN  
SPORT FISHIG VESSEL**

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## **ABSTRACT**

This study focuses on the development of a production of catamaran sport fishing vessel, taking advantage of the stability and advantages of a catamaran design compared to a traditional monohull. Traditional ship modeling faces challenges such as complexity, time inefficiency, human error, and high cost. To address this, this project aims to use 3D printing for accurate and cost-effective model fabrication. Key objectives included developing detailed CAD drawings and construct scaled-down models using PolyCAD and Rhino 8 software. A systematic methodology was used, beginning with problem definition, customer needs identification through surveys, and detailed design specifications. This also was followed by concept generation, evaluation using Pugh charts, and the fabrication process. The model was designed through the puzzle method, splitting the components for 3D printing and manual assembly. The results showed the model was successfully completed but revealed defects such as brittle surfaces and layer lines due to the print resolution and thin hull structure. Post-processing coatings and design adjustments mitigate this issue. This project highlights the potential of 3D printing in maritime prototyping, offering efficiency and design flexibility. Recommendations include refining CAD designs, hybrid manufacturing techniques and exploring advanced materials. This work contributes a practical framework for integrating modern technology into marine engineering, promoting innovation in ship production.

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