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UNIVERSITI  
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**UNIVERSITI  
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**MEC299**

**PRODUCTION DESIGN OF GRP PAYANG POTONG  
BELAKANG**

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## **Abstract**

This project is about the Production Design of a GRP Payang Boat with a mounted motor engine. Payang Boat is a traditional open fishing boat that originated from the east coast part of Malaysia. With the accomplishment of this project, it will help in fulfilling the daily activities of people who utilize Payang Boats on daily occasions especially fishermen. One of this project aim is to replace the original raw materials of a Payang Boat to a much more modern one. Other than that, the chosen raw material and method of construction is determined by using a method called Pugh chart where every item is given a score of -1, 0 or 1 depending on whether they suit the criteria given or not. At the end of this project it is expected to achieve the suitable method of construction and a detail drawing of the result which will be made on FYP2.

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## Chapter 1: Introduction

### 1.1 Background of Study

One of Malays' finest traditional boats in terms of design is Payang Boat. It is mainly used in open-water sea due to its rigid bow-shaped hull. Payang boat is one of the largest traditional fishing boats in Malaysia alongside Bedar Boat and Anak Bedar Boat. Commonly found utilized amongst fishermen from the coast of Setiu down to the north of Pahang, this boat is said to be able to carry from 15 to 20 passengers at a time. Some sources say that it was classically named 'Payang' as the fishermen onboard use a type of net that is named 'Payang' while others claim that it is because it originated from a village named 'Payang' from Setiu. In terms of its size, The boat ranges in length from about 10m - 13.7m with a beam of 1.8m - 2.1m. Its most striking features are mostly focused on its bow and stern. The bow is usually decorated with a 'Bangau' or 'Okok' while its stern is equipped with a 'Sangga'. A traditional Payang boat is generally expected to last from 20 up to 30 years and this is due to it being made up of various types of high-quality woods such as chengal for its keel and bottom plank, and serayah woods for its top plank.

A few researches on the history of this boat suggests that its decorative aspects were heavily influenced by numerous past beliefs such as power and luck. For example, the bow is carved into stork-like motif called 'Bangau' because the stork is a highly efficient animal catching fish and can lead to profit and safety at sea. The 'Bangau' is said to be the sail guard of the boat due to its striking appearance at the frontmost part of the boat. This striking appearance gives the 'Bangau' an impression of the guardian of the boat. Other than that, it is also used for the crewmembers to hang their sails when not in use so that it does not roll into the water.



Figure 1: The structure of the decoration components of Payang boat

1. Kepala

4. Bangau

7. Sangga Tengah

10. Ekor

- |           |                |                          |                |
|-----------|----------------|--------------------------|----------------|
| 2. Okok   | 5. Kong        | 8. Koyang                | 11. Papan Edek |
| 3. Caping | 6. Papan Leper | 9. Sangga Kemudi / Cagak | 12. Papan Tua  |

## 1.2 Problem Statement

Most traditional boats are made by traditional boat makers that uses traditional materials and is maneuvered using outdated equipment such as paddles and sails. Payang boats are not exceptional. It is equipped with two rectangular sails on two masts, 13 or 14 oars, 4 or 5 paddles, and one large main oar used for steering. These are all traditional equipment that massively depend on the condition of the weather. Thus, the mobility of the boat has been one of its major concerns especially in the rising age of modern boats as its competitor. In general, a Payang boat is already a rigid and robust boat due to its structural design, but this takes away its ease of handling especially when it comes to controlling the speed of the boat.

Despite being well-known for its craftsmanship, this almost-perfect boat may still be modified to give it a more modernized approach. Its materials that traditionally consists of cengal woods and serayah woods are getting much more expensive in todays world. Its means of navigation has also become tedious as it requires the paddles when there is too little wind power for the usage of sails.

## 1.3 Objectives

- To produce a detail drawing of a Payang boat with a mounted motor engine
- To determine the proper method of construction of a Payang boat with a mounted motor engine

## 1.4 Scope of Work

- Produce a detail sketch of Payang boat
- Make an analysis to obtain the optimal method of construction for a Payang boat

## 1.5 Significances of project

1. To design a cost-efficient product by replacing the wooden parts of Payang boat with Glass Reinforced Plastic
2. To ease the manoeuvrability of a traditional Payang boat by mounting a boat engine at the stern of a Payang Boat