

DESIGN AND ANALYSIS OF HUMAN POWERED VEHICLE

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**This report is submitted in
fulfillment of the requirement for the award
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SUPERVISOR DECLARATION

" I have checked this report and the report can now be submitted to JK-PSM to be delivered back to supervisor and to the 2nd examiner"

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DECLARATION

" I hereby declare that the work in this report is my own except for summaries and recommendation which have been duly acknowledged."

Signature :.....
Author : TAN CHEE NIAN
Date :.....

SPECIAL DEDICATION

TO

My Beloved Parents

Mr.Tan See Boon @ Tan Peng Boon (Deceased)

Mdm.Wong Yuet Choo

Also My Beloved Siblings

Tan Chee Ling

Tan Chee Chee

Tan Chee Li

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ABSTRACT

A human powered vehicle is one of the common products with the function as a mean of transportation or recreational use and etc. This project mainly to produce a new design of human powered vehicle with 4 wheels and its main purpose is for recreational use. Computer Aided Engineering (CAE) method is been used for analyze the safety of the critical part which is the chassis. In order to design the human powered vehicle with high safety and comforts, morphological chart, design selection method, weightage methods were used to choose the final concept design. The outcome of this project is to design a vehicle with highly comfort but not to forget the importance of safety for the riders and passengers.

ABSTRAK

Sebuah kenderaan berkuasa manusia adalah salah satu produk yang sama dengan fungsi sebagai pengangkutan atau kegunaan rekreasi dan lain-lain. Tujuan utama kertas ini adalah untuk menghasilkan reka bentuk baru kenderaan berkuasa manusia dengan 4 roda. Perisian CAE telah digunakan untuk menganalisis keselamatan bahagian kritikal iaitu casis. Dalam usaha untuk mereka bentuk kenderaan berkuasa manusia dengan keselamatan yang tinggi dan keselesaan, carta morfologi, kaedah pemilihan reka bentuk dan kaedah pemberat digunakan untuk memilih reka bentuk konsep akhir. Hasil projek ini adalah untuk mereka bentuk kenderaan yang selesa tetapi tidak melupakan kepentingan keselamatan untuk penunggang.

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LIST OF ABBREVIATION/ SYMBOLS

| | |
|-------|--|
| PSM | Projek Saujana Muda |
| HPV | Human Powered Vehicle |
| CAD | Computer Aided Design |
| CAE | Computer Aided Engineering |
| CAM | Computer Aided Manufacturing |
| CATIA | Computer Aided Three Dimensional Interactive Application |