

FINAL YEAR PROJECT REPORT  
DIPLOMA IN MECHANICAL ENGINEERING  
SCHOOL OF ENGINEERING  
MARA INSTITUTE OF TECHNOLOGY

SHAH ALAM

SELANGOR

DESIGN AND FABRICATION OF A DUSTER CLEANER

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DIPLOMA IN MECHANICAL ENGINEERING

NOVEMBER 1988

## ACKNOWLEDGEMENT

The success of this project would not be achieved without the support and help given by those who have contributed to it. This project has been a rewarding experience. Whatever knowledge and experience gained shall always be treasured.

I wish to extend my appreciation and gratitude to all staff of Mechanical Workshop for unreserved assisting and giving me various ideas for the completion of the project.

A special word of thanks goes to Tuan Haji Ahmad Suhaimi, the project advisor, who has guided, supported and inspired me to forge ahead during difficult periods.

Once again, I must apologise for any careless mistakes which may be encountered during the progress of the project.

I am always ready to receive any corrective or constructive criticism regarding the art and technique of planning the construction of the machine.

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## PREFACE

Generally, the main objective of taking Final Project-MEN 380 (Design and Fabrication) is to inculcate students ability to select the material and best shapes, compute the dimensions on the basis of strength and specify the manufacturing requirements. In other words, it is the application of Mathematics, Kinematics, Mechanics of Machine, Mechanics of Materials and Engineering Drawing. It may also involve the application of other subjects which are not mentioned above.

This report focusses on the design and fabrication of a Duster Cleaner. The main aim tries to describe and explain as clearly as possible to readers or would-be manufacturers about the design of the machine right from the beginning till the machine functions perfectly.

In designing of the machine and the preparation of this report, I have been greatly benefitted from the many works listed in the Bibliography. The diagrams, tables, charts and other materials that are attached to this report may help to give a clear explanation to the report. I would always welcome any helpful suggestions or corrections to improve this report.

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## 1.0. INTRODUCTION

### 1.1). Design Process

The design process is not a rigid or fixed series of steps which can be prescribed. The design approach varies with individual requirements which are determined by the size of the project. However, a logical sequence of steps, usually common to all design projects, does exist. These steps, illustrated in figure (1), are interrelated and interdependent, each reflecting on and affecting all the others. As a whole this project (Design and Fabrication of a Duster Cleaner) is designed with the guidance of the design phase diagram in figure (1) below.

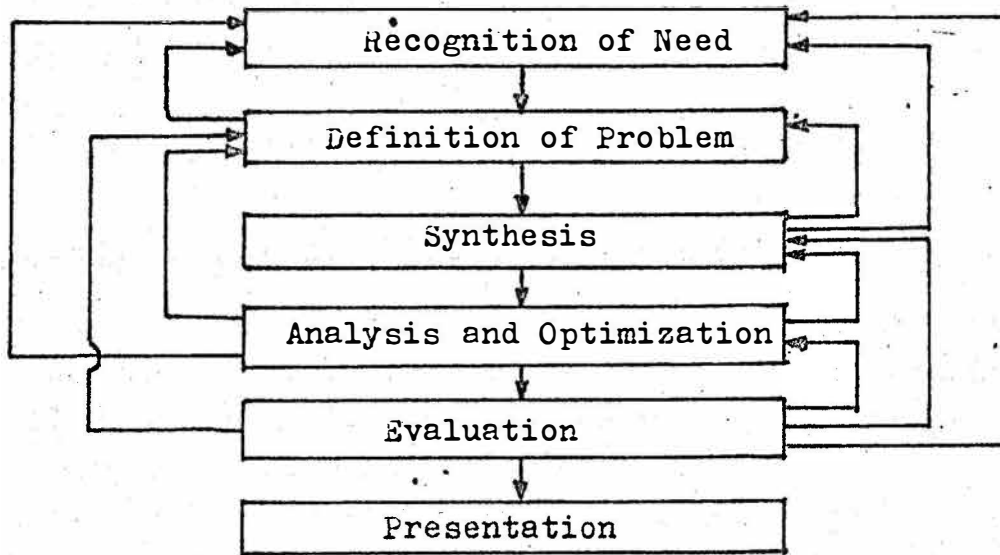


Figure (1)

### 1.2). Recognition of Need

In our daily lives, especially in the teaching profession, teachers, Lecturers, tutors or students or even kindergarten children while using chalk may or may not realise what happens to the chalk particles if they try to clean the duster after erasing the blackboard.