

FINAL YEAR PROJECT REPORT

**BACHELOR OF ENGINEERING (HONS) MECHANICAL
FACULTY OF MECHANICAL ENGINEERING
UiTM SHAH ALAM**

**'TO STUDY THE WORK DESIGN OF A SMALL
MANUFACTURING INDUSTRY IN ORDER
TO IMPROVE ITS PRODUCTIVITY'**

BY

**AZLI BIN MOHAMED
(98027665)**

**ZURAIMI BIN BORHAN
(98027951)**

APRIL 2001

ACKNOWLEDGEMENT

We would like to thank our project advisor, Haji Md Fuad bin Bahari, for his valuable guidance and supervision through out this project.

We also wish to thank En. Nukman Yusuff and the staff of CAD/CAM unit, Faculty of Engineering, University Malaya, Prof. Madya Seti Mariam Ayob (Timbalan Dekan Fakulti Senibena, Perancangan dan Ukur UiTM) and her staff.

We would also wish to express our gratitude to the staff of Extra Built (M) Sdn. Bhd, especially En Mohd Fadzhil Abd Rashid (Managing Director), En Ahmad Sahikin Khamid (Manager of R&D, Machining and Coating Department), En Abdul Razak Yassin (Human Resource Executive), En Azmi Ahmad (Production Supervisor), En Rosli Hassan (Production Planner and Die Setter), all supervisor, Clerks and operators for their cooperation throughout the project.

Our deepest appreciations are also extended to our parents, family, members and those who had given us the support throughout our studies in UiTM. Above all, we are grateful to ALLAH s.w.t for giving us the strength and good health in completing the final year project and our studies.

Azli Bin Mohamed
Zuraimi Bin Borhan
April, 2001

ABSTRACT

This project is basically to study the work design in a small manufacturing industry which includes flow process, bar chart, work sampling, standard time, material handling, health and safety, and job design. Data that were collected from observation and information provided by the company give some guidelines to improve the company's productivity.

In this study, various considerations had been taken in order to achieve an optimal solution to the problems. This report had shown the method on how to apply work design concept into actual production at the company. Conclusions are presented with the view of conforming the objective of this study.

There are four phases of study which have been done in the production line which include study of the existing conditions and related problems. This report provides a case study, which gives some recommendations on how to improve the company's productivity and efficiency in the production line.

TABLE OF CONTENTS**PAGE**

ACKNOWLEDGMENT		i
ABSTRACT		ii
LIST OF FIGURES		iii
LIST OF TABLES		v
CHAPTER 1.0	INTRODUCTION	
1.1	Background of the Study	1
1.2	Study Objective	2
1.3	Scope and Limitations	4
1.4	Strategy and Approach	5
CHAPTER 2.0	FLOW PROCESS CHART	
2.1	Introduction	6
2.2	Definition of Flow Process Chart	6
2.3	Objective of Flow Process Chart	7
2.4	Flow Process Chart Analysis	8
2.5	Existing Condition and Problems of Flow Process Chart	9
2.6	Recommendations	9
CHAPTER 3.0	PRODUCTION BAR CHART	
3.1	Introduction	17
3.1	Objective of Production Bar Chart	17
3.2	Production Bar Chart Analysis	18
3.3	Recommendations	19

CHAPTER	4.0	STANDARD TIME	
	4.1	Introduction	24
	4.2	Allowance of Standard Time	24
	4.3	Objective of Standard Time	25
	4.4	Standard Time Analysis	26
	4.5	Recommendations	28
CHAPTER	5.0	WORK SAMPLING	
	5.1	Introduction	30
	5.2	Objective of Work Sampling	30
	5.3	Work Sampling Analysis	31
	5.4	Recommendations	35
CHAPTER	6.0	MATERIAL HANDLING	
	6.1	Introduction	39
	6.2	Objective of Material Handling	40
	6.3	Existing Conditions and Problems	41
	6.4	Recommendations	45
CHAPTER	7.0	HEALTH AND SAFETY REGULATIONS	
	7.1	Introduction	47
	7.2	Objectives	47
	7.3	Existing Condition and Problems	48
	7.4	Recommendations	48
	7.5	7.4.1 Manual Material Handling	49
		7.4.2 Noise Analysis	50