

**THE EFFECTIVENESS OF BUS SYSTEM IN
UNIVERSITI TEKNOLOGI MARA**

By


DAYANGKU SALMA BT AWANG ISMAIL

Report is submitted as
the requirement for the degree of
Bachelor Engineering (Hons) (Civil)

**UNIVERSITI TEKNOLOGI MARA
NOVEMBER 2005**

DECLARATION BY CANDIDATE

I (Dayangku Salma Binti Awang Ismail, 2003286846) confirm that the work is my own and the appropriate credit has been given where references has been made to the work of others.

()

20 NOVEMBER 2005

ACKNOWLEDGEMENT

In the name of Allah the Almighty, the Most Merciful and Gracious, Nabi Muhammad S.A.W., I would like to my deepest sense of gratitude to Him, because giving me strength in order to complete my final project 'THE EFECTIVENESS OF BUS SYSTEM IN UNIVERSITI TEKNOLOGI MARA'.

First of all, I would like to give special thanks and my appreciation to my final project supervisor, Miss Tey Li Sian for her constant support, encouragement, and invaluable assistance at all stages and advise throughout the preparation and completion of this final project.

Secondly, I would also like to express my highest appreciation to the respondents that have given me cooperation to complete my research. I also would like to express my gratitude to the management and staff of Unit Kenderaan UiTM, where without their cooperation and information I would not have been able to carry out this research. I would like to give special thanks to my research partner, Khairulnizam Kamarulzaman, who had sincerely helped regarding this project.

I also would like to give special thanks to my parents for their encouragement, moral support, inspiration and motivation throughout my period study in UiTM Shah Alam. Lastly, I would like to thank all my friends and those parties that have been involved directly or indirectly for the laughter and tears that made the best experience of all.

May Allah bless all of us. AMIN.

Author,

Dayangku Salma Binti Awang Ismail

2003286846

TABLE OF CONTENTS

CHAPTER		PAGE
1	INTRODUCTION	
1.0	General	1
1.1	Problem Statement	2
1.2	Objectives	2
1.3	Scope of Study	3
1.4	Significant of Study	3
2	LITERATURE REVIEW	
2.0	Introduction	4
2.1	Bus System	5
2.2	Types of Buses Networks	5
2.3	Types of Buses	8
2.3.1	Minibuses	8
2.3.2	Midsized Buses	9
2.3.3	Standard City Buses	9
2.3.4	Long-distance Buses	9
2.3.5	Double-decker Buses	10
2.3.6	Articulated Buses (Artics)	10
2.3.7	Tractor-trailer Buses	11
2.4	Bus Stops/Shelters	12
2.5	Geometry Design	14
2.5.1	Loading Spaces and Turnouts	14

2.5.2	Bus Stop Location and Design	15
2.5.3	Bus Lay-By Design	17
2.6	Priority for Bus	18
2.6.1	Bus Lanes	18
2.6.2	Busways	21
2.6.3	Bus Signal and Preemption	22
2.7	Bus terminals	22
2.8	Maintenance and Storage Yards	23
2.9	Bus Services	24
2.10	Managing Passengers in Bus Services	25
2.11	Factors Affecting the Effectiveness of Bus Service	26
3	RESEARCH METHODOLOGY	
3.0	Introduction	27
3.1	Preliminary Observation	28
3.2	Data Collection	28
3.2.1	Distribution of questionnaires to students	28
3.2.2	Bus stop survey	29
3.2.3	Running bus survey	30
3.3	Analysis of Data	32
4	RESULTS AND ANALYSIS OF DATA	
4.0	Introduction	33
4.1	Data of Questionnaires Survey	33
4.1.1	Sample Size	33