

**A Study on the Queuing System of the Laboratory Department
of Las Piñas General Hospital and Satellite Trauma Center,
Las Piñas City**

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Applied Mathematics**

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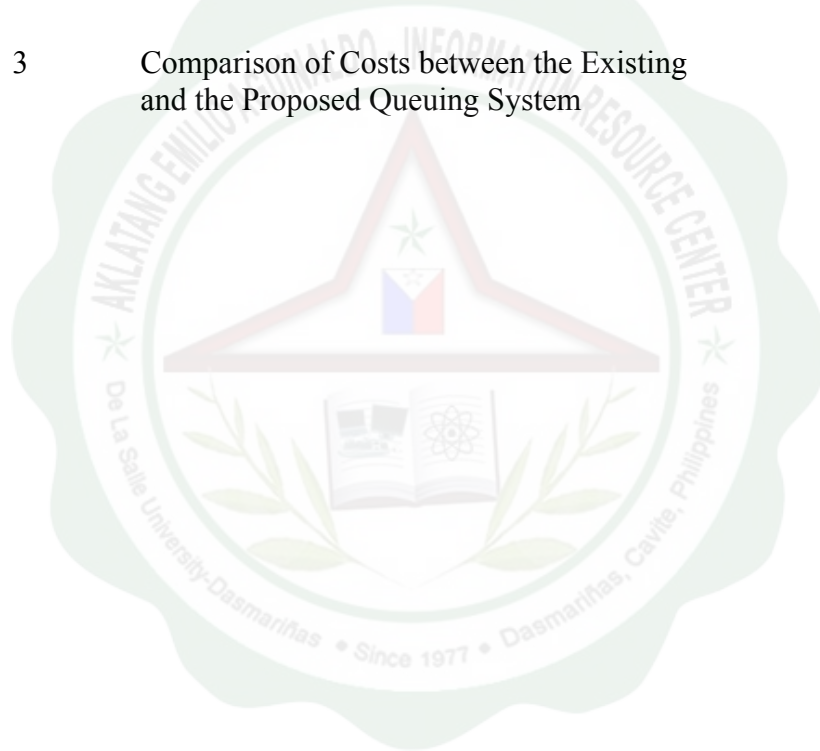
CONTENTS

TITLE PAGE	1
APPROVAL SHEET	2
ACKNOWLEDGEMENTS	3
TABLE OF CONTENTS	5
LIST OF TABLES	7
LIST OF FIGURES	8
ABSTRACT	9
1 Introduction	
1.1 Background of the Study	11
1.2 Theoretical Framework	13
1.3 Statement of the Problem	13
1.4 Significance of the Study	14
1.5 Scope and Limitation	14
1.6 Definition of Terms	15
2 Review of Related Literature	
2.1 Theoretical Literature	17
2.2 Related Literature	18
3 Methodology	
3.1 Research Design	21
3.2 Time and Place of the Study	23
3.3 Research Method	23

3.4	Process of Requesting	24
3.5	Formulation of New Queuing Model	24
3.6	Software Used for the Computation	25
3.7	The Formulas that will be used	25
	Formula for determining the cost in the queue	26
	Formula for determining the server cost	26
	Formula for determining the total cost	27
4	Presentation, Interpretation, and Analysis of Data	
4.1	Presentation of Data	28
5	Summary, Conclusion, and Recommendation	
5.1	Summary	31
5.2	Conclusion	32
5.3	Recommendation	32
	BIBLIOGRAPHY	34
	APPENDICES	
A	Existing manner of service in the Laboratory of LPGHSTC	36
B	Actual figures collected for the computation of λ and μ	37
C	Data used for the costs in the queuing system	38
	CURRICULUM VITAE	39

LIST OF TABLES

Table		PAGE
1	Existing Costs in the Queuing System	29
2	The improvements in the queuing system with the addition of staffs	29
3	Comparison of Costs between the Existing and the Proposed Queuing System	30



LIST OF FIGURES

Figure		PAGE
1	Paradigm of the Study	13
2	Research Design	21
3	Total number of requests and requesters in the laboratory from August 9, 2008 to September 9, 2008	28



ABSTRACT

This study aimed to minimize the waiting time in the queuing system and craft an improved queuing model that will yield efficiency and better feedback of the clients in the Laboratory Department of Las Piñas General Hospital and Satellite Trauma Center in Las Piñas City (LPGHSTC). The goal of this study is to minimize the costs spent by the customers while waiting for their turn to be attended.

This study used the Single-channel queuing mode with costs computations in formulating a new system. The Quantitative Management (QM) for Windows v.2 Software was used by using Single-channel queuing model, Poisson-distributed arrivals with exponentially distributed service times. The Single-channel queuing model with computations of costs did not cover the waiting capacity of clients. On the average, a regular and common staff earns Php39.75 per hour. With the present minimum wage, according to a study, a typical Filipino should earn Php43.75 per hour. These figures were the backbones in the computations of the costs.

This study found out that the actual average cost of waiting in the queue is Php159.21. If a staff will be added, the total cost will be Php198.88. In addition, an increase of Php39.72 in the total cost is expected per additional staff. The researchers conclude the following: the present Queuing System is optimal, improvements are not needed anymore and the cost in the queue can be decreased by adding staff members.

Based on the results, the researchers recommend that decreasing the waiting time and cost in the queue can lead to the loyalty of clients. Future researchers may study the queuing system of other establishments.

