## IMPROVEMENT OF MICROCONTROLLER BASED FIRE ALARM MONITORING SYSTEM IN THE DEPARTMENT OF INDUSTRIAL ENGINEERING AND TECHNOLOGY

Undergraduate Design Project
Submitted to the Faculty of the
College of Engineering and Information Technology
Cavite State University
Indang, Cavite

In partial fulfilment of the requirements for the degree of Bachelor of Industrial Technology major in Electronics Technology

SANMER A. SANTORIAS RHOLLAND R. ROSARDA May 2017

## **ABSTRACT**

SANTORIAS, SANMER A. and ROSARDA, RHOLLAND R., Improvement of Microcontroller Based Fire Alarm Monitoring System in the Department of Industrial Engineering and Technology. Undergraduate Design Project. Bachelor of Industrial Technology, major in Electronics and Electrical Technology. Cavite State University, Indang Cavite. May 2017. Adviser: Mr. Danielito R. Escano.

The designed project was developed and constructed at the Department of Industrial Engineering and Technology, College of Engineering and Information Technology, Cavite State University, Indang, Cavite from August 2016 to February 2017. Generally, the study aimed at the improvement of microcontroller based fire alarm monitoring system in the Department of Industrial Engineering and Technology for the safety and security of the students and faculty occupying the building.

This study was a great contribution for the fire alarm systems' improvement of the department as well as to the whole college. The Improvement of Microcontroller Based Fire Alarm Monitoring System in the Department of Industrial Engineering and Technology was a project design conduct to help in the major rehabilitation of electrical supply in fire alarm system of the department. It also provides an opportunity to the researchers to fully conducted rewiring, installing and improving such system that gave knowledge and hands-on experiences to the operations in fire alarm system

The design project system in terms of its functionality, workability, durability and safety were computed. The study met all the objectives and was confirmed as a successful one.

## TABLE OF CONTENTS

	Page
BIOGRAPHICAL DATA	iii
ACKNOWLEDGMENT	iv
ABSTRACT	vi
LIST OF TABLES	viii
LIST OF FIGURES	X
LIST OF APPENDIX FIGURES	xii
INTRODUCTION	xiii
Statement of the Problem ······	2
Objective of the Study······	2
Significance of the Study······	3
Scope and Limitation of the Study······	3
Time and place of the Study······	4
Definition of Terms·····	4
REVIEW OF RELATED LITERATURE	6
Fire Detection and Alarm Systems	6
Control Panel	6
Fire Detectors	12
Alarm Output Devises	15
Fire Sprinklers	17

MATERIALS AND METHODS	19
Materials	19
Methods	20
RESULTS AND DISCUSSION	23
Structure of the design project	23
The Prototype	24
Evaluation and Testing	26
Cost Computation	28
SUMMARY, CONCLUTION AND RECOMMENDATION	30
Summary	30
Conclusion	31
Recommendation	31
REFENCES	32
APPENDICES	33