

**UNIVERSITI TEKNOLOGI MARA**

**ASSESSMENT OF BIOAEROSOLS IN STUDENT  
HOSTEL OF ANGSANA AND CASUARINA AT UiTM  
PUNCAK ALAM CAMPUS**

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**Project submitted in fulfilment of the requirements for the degree of**

**Bachelor (Hons.) of Environmental Health and Safety**

**Faculty of Health Sciences**

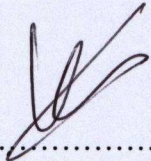
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## DECLARATION BY STUDENT

The project entitled “**Assessment of Indoor Bioaerosol in Student Hostel of Casuarina and Angsana at UiTM Puncak Alam**” is a presentation of my original final project in partial fulfilment of the requirement for the Bachelor in Environmental Health and Safety (Hons.). I hereby declare that this project is fully written by me and also is my own effort; I’m sure that it is no part has been plagiarised without citations. Wherever contribution of others are involved, every effort is made due reference to the staff, lecturers, literature, discussions and was done under the guidance of **Prof Rodziah binti Ismail** as a project supervisor.

Student’s Signature:



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## ACKNOWLEDGEMENT

In the name of Allah, the Most Gracious and the Most Merciful

Alhamdulillah, all praises to Allah for the strengths and whom with His blessing giving me the opportunity to complete this Final Year Project. This final year project was prepared, basically, it is for the student in final year to complete the undergraduates program that leads to the degree of Bachelor of Environmental Health and Safety (Hons.).

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## TABLE OF CONTENTS

<b>APPROVAL BY SUPERVISORS</b>	
<b>DECLARATION BY STUDENT</b>	
<b>ACKNOWLEDGEMENT</b>	i
<b>TABLE OF CONTENTS</b>	ii
<b>LIST OF TABLES</b>	vii
<b>LIST OF FIGURES</b>	ix
<b>LIST OF PICTURE</b>	x
<b>LIST OF ABBREVIATION</b>	x
<b>LIST OF APPENDICES</b>	xi
<b>ABSTRACT</b>	xii
<b>CHAPTER ONE: INTRODUCTION</b>	
1.1 Background of information	1
1.2 Problem Statement	3
1.3 Study Justification	4
1.4 Objective of the study	5
1.4.1 General Objective	5
1.4.2 Specific Objective	5
1.5 Study Hypothesis	6
1.6 Conceptual framework	7



## ABSTRACT

### Assessment of Indoor Bioaerosol in Student Hostel of Casuarina and Angsana At UiTM Puncak Alam

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**Introduction:** Indoor air quality is influenced by various factors including microbiological contaminants. Microbiological contamination in indoor air environment becomes a vital issue recently, as microorganisms including bacteria and fungi act as form of biological pollutant. Indoor airborne bacteria and fungi are two parameters in determining the level of microbiological contamination in indoor buildings. As exposure to certain species of airborne bacteria and fungi may cause certain diseases and also allergy symptoms to human, therefore it is significant to determine the level of microbiological contamination in Casuarina and Angsana hostel. **Methodology:** Data collection was carried out at student rooms in Casuarina and Angsana hostel. Air sampling had taken using open-plate method in determining total bacteria count and total fungal count  $\text{cfu/m}^3$  together with physical measurement. Health symptoms data was collected by using Checklist Health Survey by using the questionnaire that take from the Industry Code of Practice of Indoor Air Quality 2010. **Results:** Data was recorded in Microsoft excel 2207 and SPSS Version 23.0 for data analysis. Mean of relative humidity (%), temperature ( $^{\circ}\text{C}$ ), total bacteria count  $\text{cfu/m}^3$  and total fungal count ( $\text{cfu/m}^3$ ) in Casuarina are 71.9%, 23.6  $^{\circ}\text{C}$ , 317.9  $\text{cfu/m}^3$  and 977.3  $\text{cfu/m}^3$  respectively while in Angsana are 74.3%, 22.7  $^{\circ}\text{C}$ , 347  $\text{cfu/m}^3$  and 1244.2  $\text{cfu/m}^3$  respectively. High level of bacteria contamination occur at 1 Casuarina and 3 at Angsana while high level of fungi contamination occur at 2 rooms at Casuarina and 4 at Angsana. Type of bacteria and fungi which mostly colonized in classrooms and staff's rooms is *Staphylococcus sp* (gram-positive cocci), *Neisseria sp* (gram-negative cocci), *Bacilli sp* (gram positive rod) and gram negative rod bacteria, *Aspergillus sp*, *Penicillium sp*, *Alternaria sp*, *Cladosporium sp*, *Stachybotrys sp*. and *Botrytis sp*. There is correlation between the relative humidity, temperature with the total bacteria count ( $\text{cfu/m}^3$ ) and total fungi count ( $\text{cfu/m}^3$ ) and the p-value is lower than (0.05) that is (0.042). Relationship between Total Fungi Count ( $\text{cfu/m}^3$ ) with the Health Symptom in Angsana (A4) is significant because the p-value is lower than 0.05. **Conclusion:** In conclusion, bacteria and fungi contamination occurs at both Casuarina and Angsana. High level of contamination of fungi had obviously affected toward occupant's health, so that this condition should be prevented before become worse in future.

**Keywords:** *Microbiological contamination, bacteria, fungi, Casuarina, Angsana, health symptoms*