UNIVERSITI TEKNOLOGI MARA

RULA ASSESSMENT RISK ON MUSCULAR PAIN AND PREVENTION EXERCISE: WELDING PRACTICAL WORK ON LEARNING PROCESS AT UITM BUKIT BESI

AHMAD AMIRUL HAZIQ BIN MOHD BURHAN
2019232474

Diploma

March 2022

ACKNOWLEDGEMENT

First and foremost, I want to express my gratitude to Allah for providing me with the chance to pursue my diploma and for successfully finishing this long and difficult road. Dr. Shukriah Binti Abdullah, my supervisor, deserves my appreciation and thanks.

Furthermore, I dedicate this dissertation to my father and mother, who had the foresight and desire to educate me. This triumph is dedicated to you, Mohd Burhan Bin Ramli (father) and Rahayu Binti Abu Bakari (mother).

ABSTRACT

UiTM Campus Bukit Besi is well-known for its engineering campus, with engineering majors accounting for the vast majority of its students. Musculoskeletal problems are typical in any workshop activity where students labor in inappropriate postures, such as welding. The study's aims are to identify musculoskeletal discomfort among Mechanical Engineering students at UiTM Bukit Besi. RULA is an ergonomic method for looking at posture, forces, and muscular activity that have been linked to repetitive strain injuries. It is called the Rapid Upper Limb Assessment (RULA). The RULA approach can detect the severity of pain or musculoskeletal diseases suffered by UiTM Bukit Besi engineering students. The ergonomic assessment gives a risk score that ranges from one to seven, with higher values indicating more risk. This means that it is important and necessary to change work postures as soon as possible.

TABLE OF CONTENTS

		Page
CONFIRMATION BY SUPERVISOR		**ii**
AUTHOR'S DECLARATION		**iii**
ABSTRACT		**iv**
ACKNOWLEDGEMENT		**v**
TABLE OF CONTENTS		**vi**
LIST OF TABLES		**viii**
LIST OF FIGURES		**ix**
LIST OF ABBREVIATIONS		**xi**
CHAPTER ONE : INTRODUCTION		**1**
1.1	Background of Study	1
1.2	Problem Statement	2
1.3	Objectives	2
1.4	Scope of Work	3
1.5	Significance of The Study.	3
CHAPTER TWO 3: LITERATURE REVIEW		**4**
CHAPTER THREE : METHODOLOGY		**13**
3.1	Introduction	13
3.2	Flowchart	14
3.2.1	Interviewing and observing	15
3.2.2	Determine Body Position Selections	15
3.2.3	Determine postural angles of body positions	15
3.2.4	Do Muscle Use & Force/Load Analysis	15
3.2.5	Calculate Results	15
3.2.6	Implemented Ergonomic Improvements and do prevention exercise	16

CHAPTER FOUR : RESULTS AND DISCUSSION **17**

4.1 Introduction 17

4.2 Musculoskeletal pain on welding activity 17

4.3 RULA analysis 17

18

4.3.1 Arm and Wrist Analysis 19

4.3.2 Neck, Trunk and Leg Analysis 23

4.4 Identify Musculoskeletal Pain 26

4.5 Discussion 27

CHAPTER FIVE : CONCLUSION AND RECOMMENDATIONS **28**

5.1 Conclusions 28

5.2 Recommendations 28

5.2.1 Prevention Activities 28

CHAPTER SIX REFERENCES **34**

APPENDICES **40**