STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME

(SIWES)

HELD AT

OLA_IDIAGBON ELECTRICAL ENGINEER

BY

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DEDICATION

I dedicate this report to god almighty for sparing my life and showing his blessing and mercy upon me throughout the student industrial work experience scheme program (SIWES).it also dedicate to my parent MR and MRS SALMAN for their immeasurable assistance and unwavering support throughout the duration of the program.as well as my mentor,my role model who always trigger me and encourage me to be strong and keep focus.

ACKNOWLEDGMENT

I would like to express my sincere gratitude to the management of Ola_Idiagbon electrical engineering for siwes for giving me the opportunity to undergo my siwes training in their esteemed establishment.My heartfelt appreciation goes to my supervisor for their invaluable guidance,patience and support throughout my industrial training.

I am also grateful to the entire member at Ola _ Idiagbon electrical engineering for their warm reception,encouragement and willingness to share their knowledge with me.their contribution played a significant role in enhancing my understanding of practical application in my field of study.furthermore i extend my appreciation to my department starting from the head of department (HOD) and all the esteemed lecturer and the siwes coordinator for facilitating this program ensuring a smooth transition from theoretical knowledge to real world experience.

ABSTRACT

This report provides a detailed account of my student industrial work experience scheme (SIWES) at Ola_Idiagbon electrical engineering which took place from 29th of july 2024 to 23rd of Nov 2024.the industrial training was an essential part of my academic program,aimed at bridging the gap between theoretical knowledge and practical application in real world work enironment.

During my training i was expose to the industrial standards,.professional ethics, and workplace procedure,enhancing my technical and problem solving skills,.this report cover an introduction to SIWES,the objctives of the program,a detailed description of organization,the various task performed and the knowledge gained. Additionally recommendation for improving the siwes experience are provided.

Overall the industrial training was a valuable experience that improve,my practical skills and prepare me for future professional endeavors in the field of electrical.

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CHAPTER ONE

1. INTRODUCTION

Students Industrial Work Experience Scheme (SIWES) is a Skills Training Program designed to prepare and expose Students of Universities, Polytechnics, Colleges of Technology, Colleges of Agriculture and Colleges of Education for the Industrial Work situation they are likely to meet after graduation. The Scheme affords Students the opportunity of familiarizing and exposing themselves handling equipment and machinery that are usually not available in their institutions.

1.1 BACKGROUND

The student's industrial work experience scheme (SIWES) was introduce in 1973 by the industrial training fund (ITF), and the institution establish by federal government of nigeria to carry training programmed to student in institution the country.

student`s industrial work experience scheme (SIWES) is under the national board for technical education (NBTE).it was establish by ITF(industriual training fund) to solve the problem of lack of adequate skills preparatory for employment in industries by migeria graduate of tertiary institution.

1.2 AIM AND OBJECTIVES OF SIWES

The program students Industrial qork experience scheme (SIWES) is design for student's most especially technical students to expose them to the industrial technical require in the various field of studies.

- To help student gain practical experience and skills
- To make the transition from school to work easier
- To bridge the gap between theory and practice.
- To expose student to different work methods and techniques.
- To help student develop technical and allied skills for self employment.
- To enhance qualified education in all tertiary institutions.
- To make student practically oriented

CHAPTER TWO

1. DESCRIPTION OF ESTABLISHMENT OF ATTACHMENT

I did my four months student's industrial work experience scheme (SIWES) at Ola _Idiagbon Electrical contractor that deals with electrical installation and wiring such as:

• Surface wiring system

• Full and half conduit wiring system

• Trunking wiring system

• Electrical maintenance

• Installation of power distribution on a specific substation.

2.1 LOCATION AND BRIEF HISTORY OF ATTACHMENT.

Ola _ Idiagbon electrical engineering located at gbako Street along kaima road okolowo Ilorin,kwara state.Ola_ Idiagbon electrical engineer has been a private engineering sector since last 10 year's ago for making his progress on this electrical engineering to change or help people find solution to their problem or wants and been a reliable in their professional on his aspect and people are working under him as joint man,learner,apprentice, and industrial training students.

So far Ola _ Idiagbon electrical engineer has achieved a good Measure of success on this electrical installation and wiring and have several projects to their credit.

2.2 OBJECTIVES OF ESTABLISHMENT

- To provide outstanding service for the customer
- To be s pro active.
- To live excellent personal life.
- To sacrifice his time and effort by helping other to succeed.

CHAPTER THREE

3. ELECTRICAL HANDTOOLS

Electrical handtools are portable, handheld devices used to perform various tasks related to electrical work, including cutting, stripping, gripping, twisting, driving, measuring, testing, and diagnosing electrical systems, circuits, and equipment.such as plier, screw driver,tester, wire strippers E.t.c.

Pliers: Pliers are handheld tools used to grip, bend, and shape objects, such as wires, cables, and small parts. They typically consist of two metal jaws that can be opened and closed by a handle.

Screwdriver:A screwdriver is a handheld tool used to drive screws and other fasteners.

Tester: tester is a tool used to check the presence of voltage in a circuit or through a connected wire.

Wire Strippers: Wire strippers are handheld tools used to remove the insulation from electrical wires, exposing the conductor underneath. .

3.1 SOME COMMON ACCESSORIES/ MATERIAL IN ELECTRICAL

WIRE: is a single conductor, usually made of copper, that is used to transmit electrical current from one point to another,it is typically covered in insulation to prevent electrical shock and maintain proper separation between conductors. .

SIZES OF WIRE USED IN ELECTRICAL INSTALLATION

S/N	SIZES OF CABLES

1	1mm
2	1.5mm
3	2.5mm
4	4mm
5	6mm
6	10mm
7	16mm.

LAMPHOLDER: Is a component that securely holds a light bulb within a fixture, acting as the connection point between the electrical wiring and the bulb itself, allowing the bulb to be screwed in and receive power to illuminate when switched on .

types of lampholder

i. pin lampholder

ii. threading lampolder

iii. both pin and threading lampholder

classification of lampholder

i Straight lampoholder

ii Angle lampholder

iii Droping lampholder

SWITCH: Is a component that breaks or closes an electric circuit.

common types of switch

i. one gang switch

ii. two gang switch

iii. three gang switch

iv. four gang switch.

ELCB (EARTH LEAKAGE CIRCUIT BREAKER): is a safety device in electrical systems designed to automatically cut off the power supply when it detects a leakage of current to the ground, effectively preventing electrical shocks and potential fires caused by faulty wiring or equipment.

CHANGING OVER: refers to the act of switching an electrical load from one power source to another. E.g from grid power supply to generator.

CIRCUIT BREAKER: is an electrical safety device that automatically interrupts the flow of electricity in a circuit when it detects an overload or short circuit, preventing damage to electrical components.

DISTRIBUTION BOARD : is a crucial component of an electrical system that takes the incoming main power supply and divides it into multiple smaller circuits, each protected by a circuit breaker called (main switch),allowing for controlled distribution of electricity to various outlets and appliances within a building.

3.2 WIRING SYSTEM

When choosing a system of wiring from a building,the following point must be put into consideration:

- Neatness of the final work

- cost of installation
- the installations of durability
- future augmentation
- future addition and modification.

3.2 TYPE OF WIRING SYSTEM

i.Surface wiring system

ii. Conduit wiring system

iii.trunkimg wiring system

Surface wiring system: is a method of electrical installation where wires are run along the surface of walls or ceilings.

MATERIAL USE IN SURFACE WIRING SYSTEM

• Clip

• nail

• Patress (3/3,3/6)

• ceilings rose

• Junction box

• Meter board (base on different size).

CONDUIT WIRING SYSTEM

A conduit wiring system is a type of wiring system where wires and cables are installed inside pipes which are buried underground,embedded in concrete or hidden behind walls or ceilings.

MATERIAL USE IN CONDUIT WIRING SYSTEM

• Knockout box

• Stopending box(one way box)

• U box (Two ways box)

• T box (three way box)

• Looping box

• Pvc pippe.

TRUNKING WIRING SYSTEM

Trunking wiring system is a cable management system that uses enclosed pathways, typically rectangular or square shaped with a removable cover, to protect and organize electric cable.

CHAPTER FOUR

4. POWER DISTRIBUTION FROM SUBSTATION TO VARIOUS HOUSES

Power distribution from substation Is the process where power is transferred from substation or where power is stepdown using stepdown transformer and transfer the power through the conductor wire to the service wire of various

Material needed for the distribution

- **Poles (line support)** : are vertical supports that carry electrical wires.

Type of pole use within the substation and distribution

i. Concrete pole

ii.wooden pole

- **Conductor wire** : conductor wire is an aluminum core that made in spand that allow the flow of Electrical current to pass easily through it.

Size of conductor wire

1. 16mm conductor wire
2. 35mm conductor wire
3. 50mm conductor wire
4. 75mm conductor wire
5. 100mm conductor wire
6. 125mm conductor wire

E.t.c.

- Complete stay such as stay block,stay rod,stay wire, barrel insulator.
- Complete Diron include shackle,speedle, cutter pin.
- Pin insulator
- Service wire such as 6mm or 16mm services wire

CHAPTER FIVE

5.0 SUMMARY,CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

This report provides a comprehensive account of my Students Industrial Work Experience Scheme (SIWES) training, detailing my practical exposure and technical knowledge gained in the field of electrical and electronic engineering.

The report begins with an introduction to SIWES, explaining its purpose in bridging the gap between theoretical learning and real-world industrial applications. It highlights the aims and objectives of the program, emphasizing skill acquisition, technical proficiency, and hands-on experience.

Following this, I describe my industrial attachment at Ola Idiagbon Electrical Contractor, a company specializing in electrical installation and maintenance, including surface wiring, conduit wiring, trunking wiring, and power distribution systems. The report provides details on the location, history, and objectives of the establishment, outlining its contributions to professional electrical services.

Additionally, I elaborate on the various electrical hand tools and materials used during my training, including pliers, screwdrivers, testers, wire strippers, cables, circuit breakers, and distribution boards. I also cover different wiring systems, such as surface, conduit, and trunking wiring, and list the essential materials used in each system.

Furthermore, the report discusses power distribution from substations, highlighting the materials and components required for efficient electricity transmission, such as poles, conductor wires, insulators, and service wires.

Overall, my SIWES experience has significantly enhanced my practical skills, deepened my understanding of electrical systems, and provided me with hands-on knowledge crucial for my future career in electrical engineering. This training has prepared me for

real-world challenges and improved my ability to solve technical problems efficiently.

5.2 CONCLUSION

Through my learning and exposure training in electrical and electronic engineering, I have gained valuable knowledge and a significantly benefiting from the SIWES program. This program has strengthened my ability to apply theoretical concepts from the classroom to real-world professional settings. Furthermore, it has enhanced my critical thinking and problem-solving skills, which are essential in tackling challenges within the electrical engineering field. Moving forward, it is important to continue developing a practical and analytical approach to problem-solving in this discipline.

5.3 RECOMMENDATION

All polythecnic and university student should be require to participate in the siwes program.as it provide a balance between the theoretical knowledge and practical application.this program plays a crucial role in exposing student to real world industry practices helping them gain hands on experience with tools,equipment and techniques that are relevant to their field of study.

By improving and enforcing the siwes progream,student will be better prepared for the work force,making them more skilled,competent and ready for career opportunities in their respective fields.