TECHNICAL REPORT ON THE STUDENTS' INDUSTRIAL WORK EXPERIWENCE SCHEME (SIWES)

HELD AT

KWARA STATE MINISTRY OF WORKS

Ahmadu Bello Way, Ilorin, PMB 1384, Ilorin Kwara State.

BY

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SUBMITTED TO:

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DEDICATION

I dedicate this report to Lord for His Unlimited Grace, Consistent Love, Immeasurable Faithfulness, and for sparing my life throughout the period of my SIWES programme.

Secondly, I dedicate it to my parents **Mr & Mrs AJIBOYE** for their undiminished support and unquantifiable assistance throughout the whole exercise and beyond.

ACKNOWLEDGEMENTS

First and foremost, my deepest acknowledgement goes to God Almighty for His overwhelming love upon my life throughout the Scheme.

I appreciate my parents Mr. and Mrs AJIBOYE and friends for their constant help and support.

I also appreciate all staff members of Kwara State Ministry of work, especially my supervisor Engr. Kolawole Taiwo who gave out of his tight schedules to attend to me.

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CHAPTER ONE

1.0 INTRODUCTION TO SIWES

In 1974, the federal government of Nigeria introduced the National policy on industrial training called the student industrial work experience scheme (SIWES).

This program is under the umbrella of the ministry of education through the Industrial Training Fund (ITF), was design to help student acquire the necessary practical education experience in their fields of study and other related professions.

The program was established basically to impact elaborate practical understanding to student with respect to their various discipline. It is also intended that the student through a process of relation to academic knowledge and practical industrial application would understand the underlying principle and become better focused and acquire the practical application toward excellence in his/her discipline.

The student are expected to develop occupational competence that would facilitate their fitting into the world of work after graduation.

1.1 AIM AND OBJECTIVE OF SIWES

The student industrial work experience scheme (SIWES) has it major aims and objective of establishment. The following are the aim and objective of the program.

i. To provide student an opportunity to apply their theorical knowledge in really work situation, thereby bridging the gap between theory and practical.

ii. To expose student to working method and techniques in handing equipment and machineries that is not available in their various institutions.

iii. To make the transition from the institution to the world of work easier and thus enhance student contact for later job placement

iv. To prepare student in skill development by participating in field works, particularly in writing report in their fields of works.

1.2 HISTORICAL BACKGROUND OF THE ORGANIZATION ATTACHMENT

The Kwara State Ministry of Works and Transport is a government agency in Ilorin, Nigeria that manages road and transport infrastructure. The ministry's headquarters is located at PMB 1384, Ahmadu Bello Way, Ilorin.

What the ministry does

- Constructs and rehabilitates roads, bridges, and flyovers
- Improves connectivity and ease of movement
- Promotes economic growth and development
- Creates new economic opportunities
- Attracts investments
- Improves the quality of life for residents

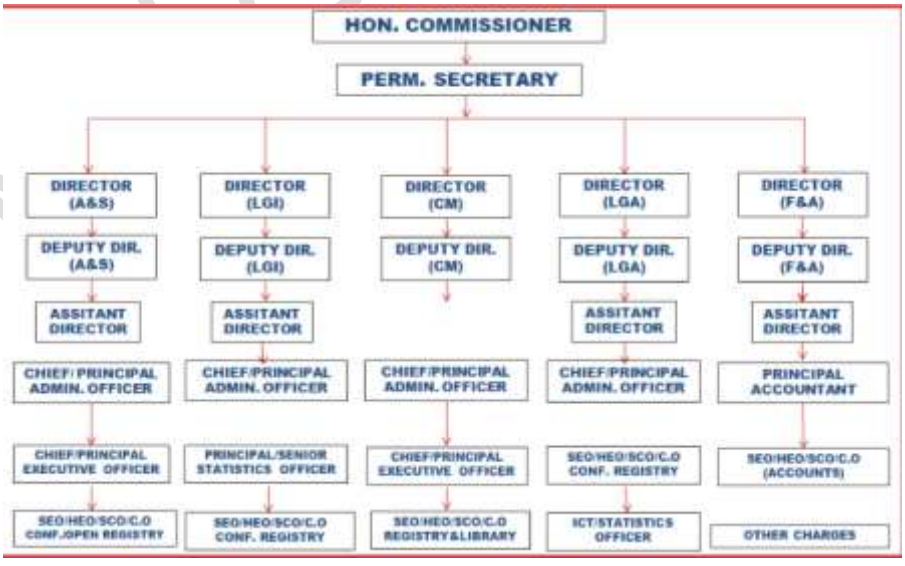
Recent projects

- Construction of a flyover at Unity Roundabout
- Rehabilitation of Ibrahim Taiwo Road
- Stone base work on Tunde Idiagbon Flyover, Tanke Ilorin
- Construction of General Babatunde Idiagbon Flyover
- Emergency repair works on Gaa–Akanbi Road Junction

Leadership

Abdulquawiy Abdulganiyu Olododo is the Commissioner for Works and Transport in Kwara State. He was appointed to the role by Governor AbdulRahman AbdulRazaq in early 2024.

1.3 ORGANIZATION CHAT OF THE ORGANIZATION



1.4 MAJOR ACTIVITIES OF THE ORGANIZATION

Ministry of works have different sections but I was involved in two sections which include:

i. Automobile Section

ii. Production section

I. **Automobile section**:- They deal with the repairing of cars

II. **Production section:-** They deal with the manufacturing of various component part of a particular by use of machine tools

1.5 WORKSHOP SAFETY

Safety is the preventive measure timely taken to guide against any form of hazard injury or accident in our daily activities in the workshop. Workshop safety is particularly focusing on ways of preventing danger particularly accident, injury a times death to personnel or other things around the operator while doing work. The following are the basic work shop safeties that must be comply with these include:

I. Always clean the machine and check the condition of the machine before working on it

II. Do not use the hand to stop the working machine

III. Do not play with any machine

IV. Know where the emergency stop buttons are positioned in the workshop in case of accident.

V. Always listen carefully to the supervisor and follow the instructions.

CHAPTER TWO

2.0 BASIC WORKSHOP HAND TOOLS AND EQUIPMENT WITH THEIR FUNCTION

The following are the basic workshop hand tools and equipment used in mechanical workshop:

1. **Spanner: -** spanner are use in tithing a bolt and nut they are of different type's e.g flat, ring and socket e.t.c.
2. **Hammer: -** Hammer is mainly use in hitting, driving, and pulling some part of the machine or work piece. They are of different types which include: cross pane hammer, ball pane hammer, straight pane hammer and double face sledgehammer.
3. **Hand file:-** file are used for smoothing the surface of the work piece. They are different type of hand file:- Rough file, smooth file etc.
4. **Hack saw: -** it is use for cutting metal.

Spanner

Hammer

Hand File

Hack saw

2.1 SECTION OF THE ORGANIZATION AND THEIR SPECIFIC FUNCTION

The section of the organization include:-

- Fabrication section
- Production section
- Automotive section

a. FABRICATION SECTION

This section deals with cutting, bending and assembling of metal to form a given structure. Different methods are used in doing this include - grooving, welding, casting and machine e. t. c.

Various machine such as:-

ROLLING MACHINE

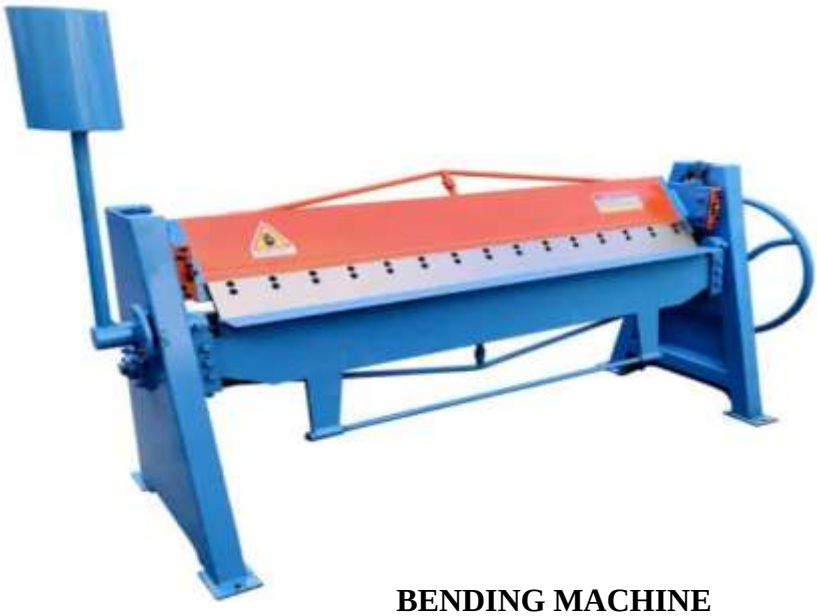
ROLLING MACHINE:- It is use for rolling a metal in to a circler part e.g production of a metal drum.

ARC WELDING MACHINE

ARC WELDING MACHINE:- For joining two or more metals together with the help of electrode.

GUILLOTINE MACHINE

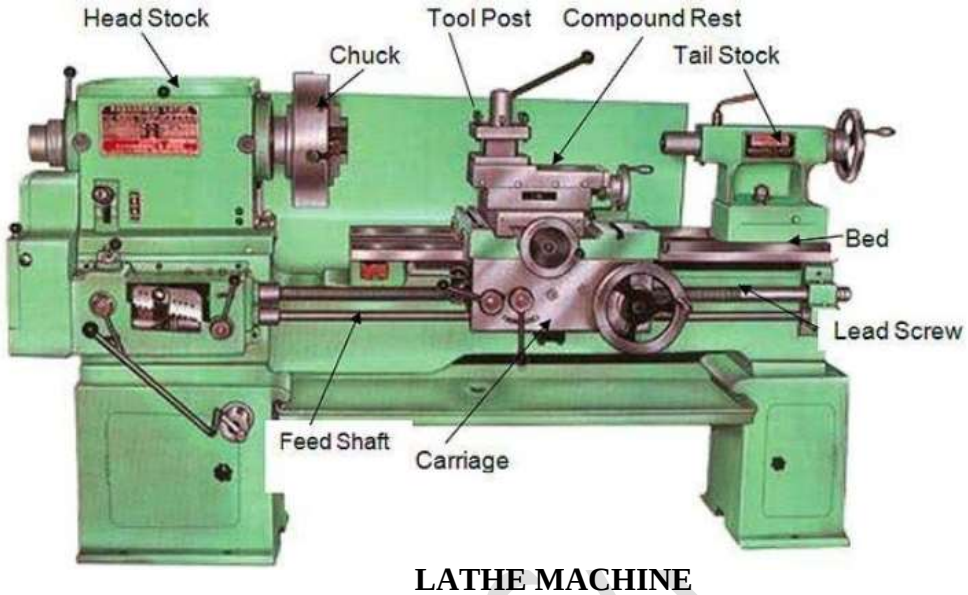
GUILLOTINE MACHINE:- It is use to cut sheet metal into straight edged pieces.



BENDING MACHINE

b. PRODUCTION SECTION

The production section makes use of machine tools such as:-



LATHE MACHINE

MILLING MACHINE

SHAPING MACHINE

DRILLING MACHINE

GRINDING MACHINE

Drilling machine, grinding machine and shaping machine e. t. c. In producing part of an object with desire a good surface finish.

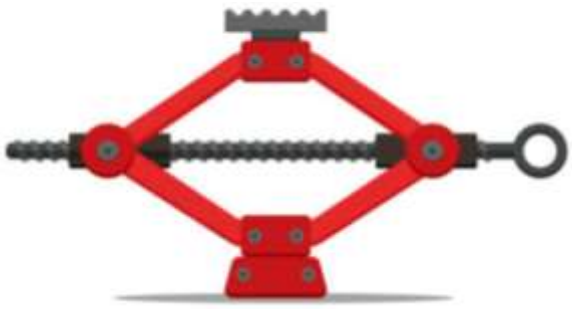
The machine tool in production section can perform various matching operation due to their r versatility, operation like.- Drilling, Boring, Teaming, Counter sinking, Counter boring, Turning operation, Knurling and facing e. t. c.

C. Automobile section

1. **A jack's** function is to lift heavy objects using mechanical or hydraulic power. Jacks are used in many industries, including construction, engineering, and vehicle repair.

How jacks work

- **Mechanical jacks**: Use a screw thread to lift heavy loads.
- **Hydraulic jacks**: Use hydraulic power to lift heavy loads. Hydraulic jacks use a pump to move oil into cylinders, which creates pressure that lifts the load.
  Types of jacks
- **Car jacks**: Used to lift vehicles for maintenance.
- **Floor jacks**: Also known as garage jacks, these are used to lift vehicles.
- **Toe jacks**: Compact jacks that can be used in tight spaces.



Engine Assembly

Assembly of engines requires cleanliness and attention to detail. Lab studies shown that it takes no more than two tablespoons dirt to spoil an engine. That is for grit ingested through the air filter, imagine how much less dirt. It takes to wear our a power plant when the dirt is built right in to the

engine. Engine assembly must be done under clean condition. Besides cleaning the parts of the engine. The workshop area must be clean and the engineers must be clean dirty benches, tools, rags and hands all leaves grit in an engines. Whenever an engine under assembly is not being worked on it should be covered with plastic bag. This will keep out general.

2.2 LUBRICANTS, GASKET AND SEALER

Information provided about lubricant, gasket and sealers is often overworked. These items provided the various parts and components with the protection and sealing power they needed

LUBRICANTS

When assembling an engine lubricant must be applied to those component because when an engine first started it will suffer extreme damage if oil is not applied when assembling to an engine prevent Rust and corrosion from forming while the engine is in storage

GASKETS AND SEALERS

Gaskets and sealers fill the minute voids between parts keeping our dirt or sealig in liquid and gases

GASKETS

A gaskets is mainly used to sealed non-moving component together there are cylinder head gasket, crank case gasket and other. Gasket are made of Asbestos or metal, or thin sheets of soft metal, are generally used on today's head gasket while hole are cut out of each gasket to allow for the bolts, values, cylinder, and water passages in the head and block.

2.3 CRANKSHAFT

The crankshaft in conjunction with the connecting rod, convert the reciprocating motion of the piston to the rotary motion needed to drive the engine. It is usually made from carbon steel which is alloyed with a small proportion of Nickel.

CHAPTER THREE

3.0 STUDENT SPECIFIC INVOLVEMENT AT VARIOUS SECTIONS

I was involved in two section which is production section and Automobile section section

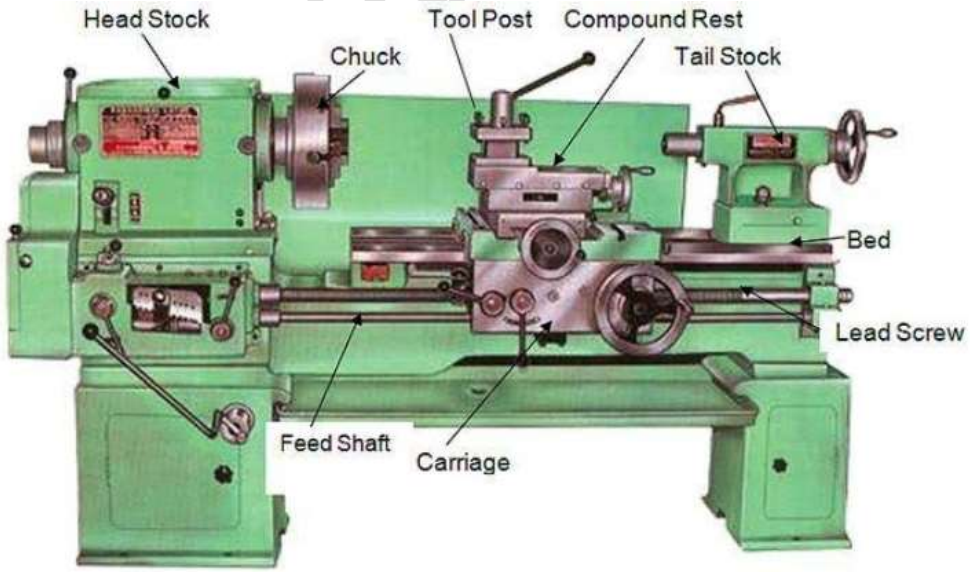
3.1 PRODUCTION SECTION

The production section also known as machine workshop, it is a section that makes use of machines tool in performing any metal removing processes.

Machining is any various processes in which piece of raw materials is cut into desired final shape and size by controlled material removal process. The machining is done by the use of machine tools. Machine tools are machine for shaping, cutting, boring, grinding and shearing or other form of deformation. Example of machine tools include the lathe machine, milling machine, shaping machine, drilling machine and grinding machine.

LATHE MACHINE

The lathe machine is known as the father of all machine tool due to it versatility i.e ability to perform different operations e.g Turning, morning, Knurling, drilling and facing operation e.t.c.



DRILLING MACHINE

Drilling is the process of originating the hole on the works piece

Drilling machine is the machine tool used in accomplishing the task of originating hole, dreaming, boring, counter boring and other drilling operation.

Pillar Type Drilling Machine

MILLING MACHINE

These are machine in which multi-tooth tools (cutter) are employed to perform metal removing operation, sometimes single tooth are used e.g fly cutter.

I also learn on how to perform basic operations e.g

- I learning how to remove and install parts
- I learning how to make precise adjustments to mechanical parts
- I learning how to troubleshoot and solve complex problems
- I learning how to repair different systems and components of a vehicle.

CHAPTER FOUR

4.0 EXPERIENCE GAINED

During the four months program, I gained a lot especially in the Automobile section where by we remove an engine block from a vehicle, cleaning of the mechanical parts of the engine using petrol and brush and finally Re-assembly of all engine components. I also learn how to repair the radiator to configure the Colling system of a car. All this gives me the knowledge of constructing and designing a project.

Also in production section, I learnt how operate various types of machine in the production workshop e.g lathe machine, shaping machine, grinding machine, milling machine and Drilling machine.

4.1 INTERPERSONAL RELATIONSHIPS WITH THE ORGANIZATION

My four month SIWES program has equipped me the knowledge of mechanical engineering design in term of fabrication and production of a particular Project

During the course of staying with the coordinator in the various section has turn a new movement in my course of study like the production section in person of Engr. Kolawole Taiwo.

4.2 SUGGESTION FOR IMPROVEMENT OF THE PROGRAM

The Industrial training Fund should have up and hold a committee on inspecting the student in their various organization that they are attached to as this will improve the level of seriousness of the student to the program. Also the federal government in collaboration with the Industrial training Fund (ITF) to increase the student allowance for the program as this will encourage them in active participation.

CHAPTER FIVE

5.0 CONCLUSION

I found it interesting and I fully participated in it which in turn yields a successful result indeed it prepares me for future challenge in my chosen field. This SIWES program has turn out to be more interesting education due to the nature of the program itself.

5.1 RECOMMENDATION

The experience I gained during my SIWES program cannot be over emphasized I was practically oriented I humbly recommend that the SIWES program should be made compulsory for student of engineering, fields in order to gain more experience in their course of study.