



**A SIWES REPORT OF THE STUDENT  
INDUSTRIAL WORK EXPERIENCE SCHEME  
(SIWES)**

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**DEDICATION**

This Siwes work is dedicated to Almighty Allah the sources of  
my wisdom the Alpha and Omega.

## ACKNOWLEDGMENT

All glory and adoration are due to Almighty Allah for His protection over me throughout my academic program to this effect your name will be forever be praise.

My immeasurable gratitude goes to my lovely parent **MR AND** <sup>Yusman</sup> ~~MRS. ABDUL WAHEED~~ for their parental c-are throughout my academic program.

My special appreciation also goes to my able departmental lecturers for impacting knowledge in me.

My appreciation goes to my friends well-wishers and also to my course mate, thank you all.

## **PREFACE**

The student industrial work experience scheme (SIWES) comprises of knowledge I gained during the training programme. The programme is enhanced from Higher Industrial of training to expose the student to the practical aspect of their field.

However, this programme makes student to have good orientation on their course of study improve them practical through the experience gained.

More so, more companies and industries should be asset to create room for those that are unable to get a place to attach themselves for the training because it will promote the technological activities in the country.



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## **CHAPTER ONE**

### **1.1 INTRODUCTION**

The students industrial work experience scheme (SIWES) is a skills training programme designed to expose and prepare 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 also affords students the opportunity of familiarizing and exposing themselves to the needed experience in handling equipment and machinery that are usually not available in their institutions. It is a cooperative industrial internship program that involves institutions of higher learning, industries, the Federal Government of Nigeria, Industrial Training Fund (ITF), and Nigerian Universities Commission (NUC).

**The Objectives of the Scheme are to:**

- (i) Provide avenues for students to acquire industrial skills and experience during their course of study.
- (ii) Prepare students for industrial work situation they are likely to meet after graduation.
- (iii) Expose students to work methods and techniques in handling equipment and machineries that may not be available in the university;
- (iv) Provide students with the opportunities to apply their educational knowledge in real work situations, thereby bridging the gap between theory and practice.
- (v) To make the transition from the schooling to world of work easier through enhancing students' contact for later job placement.

### **1.2 OBJECTIVES OF SIWES**

Specifically, the objectives of the students industrial work experience scheme are to:

- i. Prepare students for the work situation they are likely to meet.
- ii. Provide an avenue for students in the Nigerian Universities to acquire industrial skills and experience in their course of study
- iii. Make the transition from the university to the world of work easier, and thus enhance students contacts for later job placements;
- iv. Enlist and strengthen employers' involvement in the entire educational process of preparing university graduates for employment in industry.



- v. Provide students with an opportunity to apply their theoretical knowledge in real work situation, thereby bridging the gap between university work and actual practices; and
- vi. Expose students to work methods and techniques in handling equipment and machinery that may not be available in the universities.

### **1.3 IMPORTANCE OF SIWES**

- i. It provides students with an opportunity to apply their theoretical knowledge in real life situations.
- ii. It exposes students to more practical work methods and techniques.
- iii. It strengthens links between the employers, universities and industrial training fund (ITF)
- iv. It also prepares the students for the labour market after graduation

### **1.4 THE ROLE OF FEDERAL GOVERNMENT**

- i. Make it mandatory for all ministries, companies and government parastatals, to offer attachment places to students;
- ii. Make it a policy to include a clause in every major contract lasting over six to nine months being awarded for contractors to take student on attachment
- iii. Make adequate funds available to the federal ministry of industry to fund the Scheme.

### **1.5 ROLE OF THE CO-ORDINATING AGENCY (NUC)**

- i. In collaboration with ITF, compile lists of employers for institution's placement lists;
- ii. Establish SIWES coordinating units
- iii. Evolve a minimum national guide programme for supervised industrial training activities for approved SIWES courses;
- iv. Appoint full —time industrial co coordinators to operate the scheme at agency level;
- v. Vet and approve SIWES master and placement lists and forward to ITF.

### **1.6 ROLE OF THE INDUSTRIAL TRAINING FUND (ITF)**

- i. Organize bi-ennial conference and seminars on SIWES
- ii. Provide logistic material needed to administer the scheme;
- iii. Compile lists of employers and available training places for industrial attachment and forward such lists to the co-ordinating agencies (i.e NUC, NBTE, NCCE).



### **1.7 ROLE OF EMPLOYERS**

- i. Control and discipline students like permanent staff.
- ii. Accept students and assign them to the relevant on-the-job training
- iii. Provide medical care for students within the limits of the employers conditions of service during attachment
- iv. Attach experienced staff to students for effective training and supervision. Supervisors should not handle more than ten students at a time;
- v. Pay students monthly allowance as and when due

### **1.8 ROLE OF POLYTECHNICS**

- i. Prepare and submit master and placement lists to the respective coordinating agency and IT.
- ii. Place students on attachment w.th employers
- iii. Establish SIWES coordinating units and appoint department, faculty SIWES coordinators within the institutions;
- iv. Organize orientation programmes for students to prepare them for industrial training. ITF representative may be invited to give a talk to the students during the orientation programme
- v. Appoint full-time industrial coordinators to operate the scheme at industrial level

### **1.9 ROLE OF STUDENTS**

- i. Comply with the employer's rules and regulations
- ii. Arrange their own living accommodation during the period of attachment
- iii. Be regular and punctual at respective place of attachment
- iv. Arrange their own living accommodation during the period of attachment

## **CHAPTER TWO**

### **2.0 HISTORICAL BACKGROUND OF MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT**

#### **2.1 VISION AND MISSION STATEMENTS**

To position Kwara as the leading and most efficient food producing State in Nigeria and West Africa by harnessing her enormous agricultural resources, human capital potentials and strategic geographical location in order to ensure food security, create wealth, decent employment for the teeming youths and women, provide raw materials for secondary production sector as well as produce for domestic and international consumption, thereby leading to Rural development increased IGR of the State and ultimately improving the standard of living of Kwarans.

#### **2.2 POLICY THRUSTS**

To see agriculture as a sustainable business through the promotion of Commercial Agriculture, provision of enabling environment for peasant and small holder farmers to profitably engage in farming activity beyond subsistence level and put mechanism in place for the promotion of all-season farming through irrigation.

#### **2.3 AIMS/OBJECTIVES OF THE MINISTRY**

The aims and objectives of the Kwara State Ministry of Agriculture and Rural development include:

- the achievement of self-sufficiency in basic food supply and the attainment of food security;
- increased production of agricultural raw materials for industries;
- increased production and processing of export crops, using improved production and processing technologies;
- generating gainful employment;
- rational utilization of agricultural resources, improved protection of agricultural land resources from drought, desert encroachment, soil erosion and flood, and the general preservation of the environment for the sustainability of agricultural production;
- promotion of the increased application of modern technology to agricultural production;
- and,
- improvement in the quality of life of rural dwellers.

#### **2.4 MANDATE OF THE MINISTRY**

The Ministry is responsible for the formulation and implementation of government policies on agriculture in the state.

The development and expansion of agricultural potentials to ensure food security, create wealth, employment and provide raw materials for industries and produce for domestic consumption and export.



The Ministry is also responsible for clearing and cultivation of farm land including irrigation and land reclamation.

Dissemination of data collected in relation to agriculture to individuals (student, researchers) and institution such as University and Central Bank of Nigeria.

The provision of enabling environment for peasant farmers and citizens to engage profitably in mechanized agriculture and promote all-season farming.

In addition to the above, you will find attached useful relevant documents that provide additional information on the mandates of the Ministry, its departments and agencies.

## CHAPTER THREE

### 3.0 EXPERIENCE GAINED

#### HOW TO USE THE GRINDING MACHINE

Carefully plunge the cutting disc into the metal at an angle and move the grinder in a circle to cut the hole. For larger holes, start by drilling pilot holes, then use the cutting disc to connect the holes. Be very careful when cutting holes, as the metal piece may become unstable.

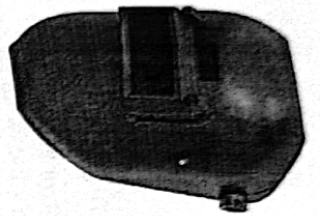
Fabrication and Welding are two essential processes in metalworking. But if you are in the industry, you'll know there is a difference between the two. To put it simply, Fabrication is the whole cycle in which a component or structure goes through. Welding is part of that cycle.

Cutting and grinding machines are used to shape, sharpen, and remove material from workpieces. They are used in metalworking, woodworking, and other industries

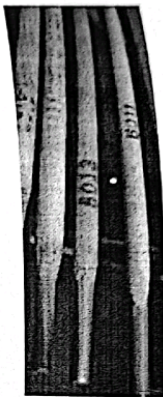


Welding shields, also known as welding helmets, protect the eyes and face from the intense light, radiation, and sparks produced during welding.





An electrode is an electrical conductor used to make contact with a nonmetallic part of a circuit (e.g. a semiconductor, an electrolyte, a vacuum or air).



### 3.4 FOUNDATION:

The type of foundation to be used in construction determine on what kind of load the foundation is going to carry and the type of land dealing with.

Types of foundation:

- Strip foundation
- pad foundation
- raft / mat foundation

### 3.5 BACKFILLING

This can be done by filled back the soil that is removed during the excavation of foundation, ground bearing slab or other groundwork to support and strengthen a structure so that it can withstand the earth pressure.

### 3.6 COMPACTION

This is done by the use of roller to compact the soil together for maximum density for the stability of the soil.

### 3.7 WALL CONSTRUCTION

In frame structure generally brick walls are constructed for partition purpose while providing safety and protection. The outer wall (also referred to as exterior wall) in a building for protection while inner wall (also referred to as interior wall) divide the enclosure into the needed numbers of rooms. This is also known as Foundation wall or Retaining wall.

### 3.8 COLUMNS

Columns are defined as vertical load-bearing members supporting axial compressive loads. Columns are a structural element that transmits through compression, the weight of the structure above to other structural elements below, and it contain reinforcement.

Beams are used to support the weight of floor, ceiling and roofs of a building and to transfer the load to a vertical load bearing element of the structure which is column.

### Types of beams

- **Canilever** – these beams have one end that is fixed and one end that is freestanding.
- **Fixed** – these are beams that two ends are integrated or attached into the wall.
- **Hidden** – these are beams that are concealed within concrete slab thickness.
- **Overhanging** – these beams extend beyond support when their end portions extend beyond the support.
- **Simply supported** – these are beams that rests freely on both ends on its supports is known as a simply supported beam.

### 3.9.2 SLAB

Slab is a structural element, made of concrete that is used to create flat horizontal surfaces such as floor, roof deck and ceiling, it transfer the load to the beam.

**Staircase** – this is a number of steps leading from one level to another and its function is to provide mean of movement between floor to floor in story buildings.

### PART OF STAIRCASE

- **Flight** - describes an uninterrupted series of step between floor or between floor and landing
- **Steps** – it is a combination of tread and riser which permits ascent and descent from one floor to another
- **Tread** – the upper horizontal portion of the step over which foot is placed during ascending or descending.

- Riser – the vertical height between two consecutive treads
- Nosing – it is the projecting part of the tread beyond the face of the riser
- Landing – it a horizontal platform between two successive flight of a stair.

### 3.9.4 CONCRETE

Concreting – this is a process involves mixing cement, water, fine aggregates (such as sharp sand) and coarse aggregates (such as crushed stone)

#### OPERATION OF CONCRETE MIX PRODUCTION

- **BATCHING:** The process of measuring different concrete materials such as cement, coarse, aggregate, sand and water for making of concrete is known as batching.

Batching is done in two ways which volume and weight.

- **MIXING:** The process of mixing various ingredient of concrete (cement, fine and coarse aggregate with water) in a specified proportion is known as mixing.

There are two method of mixing

- Manual mixing (hand mixing)
- Mechanical mixing (mixer machine)

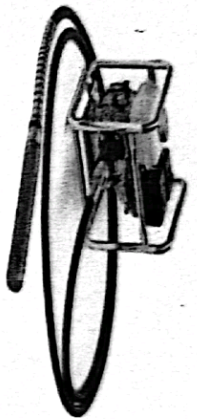
- **TRANSPORTATION:** When a mixing is done properly, the freshly made concrete is then transport to the construction site, this process is known as Transportation. And this is done in two ways which are

- Manual transportation
- Mechanical transportation.

- **PLACING:** After the concrete is brought to the construction site, it is placed in form work that defines its final position and shape. This process is refers to as placing of concrete.

- **COMPACTION:** This is the process in which the air bubbles are eliminated from the freshly placed concrete. Its required to increase the ultimate strength of concrete by enhancing the band with reinforcement and to avoid a void.





#### METHOD OF COMPACTION

- i. Hand compaction, which are:
  - rodding
  - tamping
- ii. Compaction by vibrating:
  - needle or poker vibrator
  - screed board vibrator
  - platform vibrator
  - table vibrator.

- Workability
- Durability
- Maximum nominal of aggregate

#### 3.9.5 ROOF

This is the top most of the building that exclude air. it prevent both dead and live load in the building from an unfavourable condition such as Rain, too much sunlight and many other things cause by harsh weather, and it is supporting by Trusses.

Roof is design by an architect and they are meant to show how the water will flow on it during the roof plan.

### 3.9.6 FINISHING

This is the last in construction and it serve as an aesthetic purpose. There are different classification of finishes

- **WALL FINISHING:** This is done to internal and external part of a wall in the building,

#### Type of Wall Finishing

**SCREEDING:** This serve as a water proof to the wall so that it wouldn't allow water to penetrate inside, and its specifically for the outer part of the building but inner part can also be screed.

**PLASTERING:** this is the process by which a cement mortar is being apply to the wall, and this is known as plastering. The mixing ratio for the plastering is: 1:4 for inner part and

1:6 for outer part of the building.

- **FLOOR FINISHING:** This is also done to inner and outer part of the floor in the building, and there are many ways of designing wall, this include: plastering, tiling etc.

### 3.9.7 DRAINAGE

Drainage – this is the removal of surface water from a particular and be repurposed elsewhere to river to avoid saturation of land and damage to homes, commercial property and farm land. Is also a process of allowing or giving access for water to flow.

- **EXCAVATION OF TRENCHES:** this is process of excavating a trenches using excavator or hand tools in a specific dimension.
- **REINFORCEMENT STEEL:** This is also call Bar Bending Schedule, is a process whereby the steel for reinforcement is bend with a specific dimension and will form the shape of that particular drainage and also installing it inside the trenches before blinding. Most time the reinforcement is in U shape.

- **BLINDING:** A process of spraying and compacting the base of trenches excavated and also it will cover the base of the reinforcement so that it will be align.
- **FORM WORK:** The form work is a temporary structure use to form a desire shape before casting, and it will be vertical in Rectangular Drainage construction.
- **CASTING:** There are many procedures in casting which including mixing concrete vibrating while casting using poker vibrator

## CHAPTER FOUR

### 1. SUGGESTION AND RECOMMENDATION

- The supervisor supposed to be visiting the student at least twice while during the program to inspect them well.
- Their supposed to be a token for the student and supposed to be paid on time.
- I would recommend that the Kwara State polytechnic should improve the school by assisting the SIWES student with computer and modern technology and it would lead to create development of the school

- I would recommend that the department of Civil Engineering in Kwara State should expose student to practical skill and allow them to practice until they understand it perfectly well.

## CONCLUSION

- Student Industrial Work Experience Scheme is very Essential for all student to be able to understand what their course of study will present to them after graduation and also learn beyond what they will be able to learn in school.

## CHAPTER FIVE

### 5.0 PROBLEM ENCOUNTERED DURING THE ATTACHMENT AND SOLUTION

But the general problem that most student encountered before and during attachment are as followed:

- Lack of available industry in the location of some student.
- High cost of transport fare from student resident to the location of the attachment.
- Laziness of some student during the attachment.

#### 5.1 POSSIBLE SOLUTION

- Government should increased their investment on establishing companies for SIWES student.
- Their should be a certain amount to be paid to the student during the attachment program.



- Their should be a monthly check on the student during the attachment program.

## **5.2 CONCLUSION**

Student Industrial Work Experience Scheme (SIWES) is a scheme that improved the technical knowledge of student in the Nigerian institution. The scheme expose student to work method and techniques in handling equipment and machinery that may not be available in their institutions. It is a good process that every science oriented course must undergoes.

As for me, the SIWES I underwent at Kwara State Ministry of Agriculture and Rural Development exposed me to the practical aspect of Agricultural Technology. It widening my knowledge and skill on the discipline the scheme equips student properly to fact any future challenges pertaining to Agricultural Practices.

Lastly, a big thanks to the Industrial Training Fund (ITF) for the establishment of SIWES which now serves as an opportunity for we students of the Nigerian Institution.