A TECHNICAL REPORT ON STUDENT INDUSTRIAL TRAINING WORK EXPERIENCE SCHEME [SIWES]

UNDERTAKEN AT:

THE OFFICE OF THE SURVEYOR GENERAL OF KWARA STATE iis located at:

COMMISSIONER'S LODGE WAY,GRA ILORIN,KWARA STATE.

PRESENTED

By

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ND/23/SGI/FT/0038

SUBMITTED TO THE DEPARTMENT OF SURVEYING AND GEO- INFORMATICS

FACULTY OF ENVIRONMENTAL STUDIES, KWARA STATE POLYTECHNIC, ILORIN KWARA STATE.

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF ORDINARY

NATIONAL DIPLOMA (OND) IN SURVEYING AND GEO- INFORMATICS.

MARCH, 2025

CERTIFICATION

I, **IBRAHIM OLAMIDE RUKAYAT** with Matric number **ND/23/SGI/FT/0038** hereby certify that the information contained in this SIWES report were obtained as a result of my experiences during my 4 month SIWES programme at **THE OFFICE OF THE SURVEYOR GENERAL OF KWARA STATE i**n accordance with survey rule and regulations and departmental instructions. I therefore submit the report as a partial fulfillment of the requirements for the student work experience scheme requirements for KWARA STATE POLYTECHNIC ILORIN, KWARA STATE, student work experience scheme.

_____ _____

DATE

(SIWES SUPERVISOR)

_____ _____

DATE

(SIWES COORDINATOR)

_____ _____

DATE

(HEAD OF DEPARTMENT)

_____

_____

DATE

DIRECTOR, DIRECTORATE OF

INDUSTRIAL LIAISONS PLACEMENT

DEDICATION

This Siwes report is dedicated to my lovely parent

MR AND MRS IBRAHIM

ACKNOWLEDGEMENT

Praises and thanks to the Almighty GOD for his showers of blessing throughout my Industrial Training period and for a successful completion. I would like to express my deepest and sincere gratitude to my training supervisor and management of **THE OFFICE OF THE SURVEYOR GENERAL OF KWARA STATE**

Nevertheless, my profound acknowledgement will extend to my Head of Department of Surveying and Geo- informatics,KWARA STATE POLYTECHNIC ILORIN and all other departmental lecturers for the advice, support and correction made to me while in the classroom, during practical and every time I need their assistance. I pray you all continuous to leave in good health and more promotion on your field sir and ma.

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CHAPTER ONE

1.0 INTRODUCTION

THE OFFICE OF THE SURVEYOR GENERAL OF KWARA STATE is a multi-disciplinary establishment, comprising of professionals and technical staff in surveying, Geo-information, Photogrammetary, Cartography, Printing, Photography, Carpentry and electrical works. It is responsible for the formulation and / or execution of policies and projects of the State on issues relating to Surveying, Mapping, Geo-Spatial information and General Land Administration and Management. It was upgraded and restructured into an Extra- Ministerial Department consisting of four (4) Departments namely; Mapping and Boundaries, Cadastral and Special Surveys, Geo-Spatial Information Systems and Administration and Finance in October 2009. The staff strength of the office is seventy made up of: Registered Professionals 07 Survey Officers 09 Technical Officers 19 Technical Assistants 02 Foremen (Chainmen) 10 Administration and Finance Personnel.

1.1 INCEPTION OF STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME

The Students Industrial Work Experience Scheme (SIWES) is a program that was established in Nigeria to bridge the gap between theoretical knowledge acquired in the classroom and practical skills required in the workplace. SIWES was initiated in Nigeria in 1973 by the federal government as a response to the need for practical exposure of students in higher institutions to real work environments. Its relevance in the education system cannot be over emphasized as it develops the student to become skilled and experience professionalism in the various disciplines. It enables students to appreciate the basic concept involved in their field of study. SIWES, which involves the university authorities and the industrial sector, runs for 24 weeks for students in the fourth academic year in the universities. The scheme was organized by the federal Government and jointly coordinated by the Industrial Training Fund (ITF) and the Nigerian Universities Commission (NUC). The importance of the training scheme is justified as it is a research field, which enables students to be totally in- depth in finding the working culture, practice and tools in their various areas of specialization.

1.2 OBJECTIVES

The Students' Industrial Work Experience Scheme (SIWES) was created with the goal of fostering and supporting the development of skills in business and industry in order to create a pool of qualified native workers sufficient to meet the demands of the economy. Any industrial organization's most valuable resource depends on the technical proficiency of its workforce to operate and maintain its non- human assets and resources, which is why SIWES is required. According to the program's operational norms and guidelines, students are assigned to a structured environment (private or public), whose operations are related to their course of study. The purpose of this training time is to help students at different levels connect the theory they learn in class to real- world applications. According to the government's education policy,

CHAPTER TWO

2.0 **DESCRIPTION OF THE ESTABLISHMENT OF ATTACHMENT**

In recognition of the role of surveying to all facets of human endeavors, the Kwara State Governor approved the upgrading and restructuring of the State Surveys Department of the former Ministry of Lands and Housing to an extra Ministerial Department as the Office of the Surveyor General of Kwara State in October 2009 in line with what obtains at the Federal level. The Department had earlier enjoyed Executive support of the State Government with the provision of the following among others; employment of several young graduates to boost the declining manpower situation of the Department; procurement of appropriate state of the art Digital Surveying Equipment and refurbishing of analog ones; establishment of a well furnished and equipped Geo Spatial Information Systems Labortory (GIS) in the Surveys Department; reconstitution of the Land Use and Allocation Committee with the Surveyors General as a member; production of Digital Topographic and other thematic Maps of Kwara State and acquisition of satellite imagery for three towns; fencing of the Premises of Surveys Department' renovation of the Office of the Surveyor General; purchase of a utility vehicle for Survey field operations and revision of State and Local Government Maps. It is hoped that the new status of the Department would enhance its performance, efficiency and service delivery.

Facilities and Equipment

The Office of the Surveyor General of Kwara State has a well-equipped office with state-of-the-art surveying and geospatial equipment, including:

- Total stations
- GPS receivers
- GIS software (ArcGIS, QGIS)
- Surveying software (Autodesk, Carlson)
- Computers and laptops

Services Offered

The company offers a range of services, including:

- Topographic surveys
- Boundary surveys
- GIS mapping
- Geospatial consulting
- Project management

2.1 LOCATION AND BRIEF HISTORY OF ESTABLISHMENT

THE OFFICE OF THE SURVEYOR GENERAL OF KWARA STATE is located at:

COMMISSIONER'S LODGE WAY,GRA ILORIN

Brief History Of Establishment

THE OFFICE OF THE SURVEYOR GENERAL OF KWARA STATE was established in 2021 by Surv. BABATUNDE KABIR a seasoned surveyor with eleven years of experience in the industry.

The company started as a small surveying firm providing services to local clients but has since grown to become a leading provider of surveying and geospatial services in [Region/State]. Over the years, the company has built a reputation for delivering high-quality services and has worked on numerous high-profile projects in Industry

THE OFFICE OF THE SURVEYOR GENERAL OF KWARA STATE is a public Survey firm. The company was established and legal registered under C.A.C corporate commission in the year 2021, the firm name has been in existences since seven year back. And the firm has fully involved in both government and privates survey job both in the state and outside the Kwara State.

The mandate of the ministry is primarily to formulate and implement the policies, programmes and projects of the Federal Government of Nigeria (FGN) with respect to road transport, highway construction and rehabilitation; highways planning and design monitoring and maintenance of federal roads and bridges nationwide.

2.2 OBJECTIVES OF ESTABLISHMENT

The primary objective of establishing **THE OFFICE OF THE SURVEYOR GENERAL OF KWARA STATE** is to provide innovative and cutting-edge surveying and geospatial services to clients in various industries, including:

Infrastructure Development : To support the development of infrastructure projects, such as roads, bridges, and buildings, by providing accurate and reliable surveying and mapping services.

Land Administration: To assist in the management and administration of land resources by providing services such as land surveying, mapping, and GIS analysis.

3. Environmental Monitoring: To support environmental monitoring and management efforts by providing services such as GPS tracking, GIS analysis, and remote sensing.

4. Professional Development To provide training and development opportunities for surveying and geospatial professionals, promoting capacity building and skills development in the industry.

aims to become a leading provider of surveying and geospatial services in the region, known for its excellence, innovation, and commitment to delivering high-quality services.

Topographic Surveying

Geographic Information System Analysis

Digital Mapping and Street Guide Mapping

Drone Mapping and Analysis

Hydrographic Surveying

2.3 Departments and Units in the Firm

The following departments/section were operated and function well, they are:-

ii. Managing Director

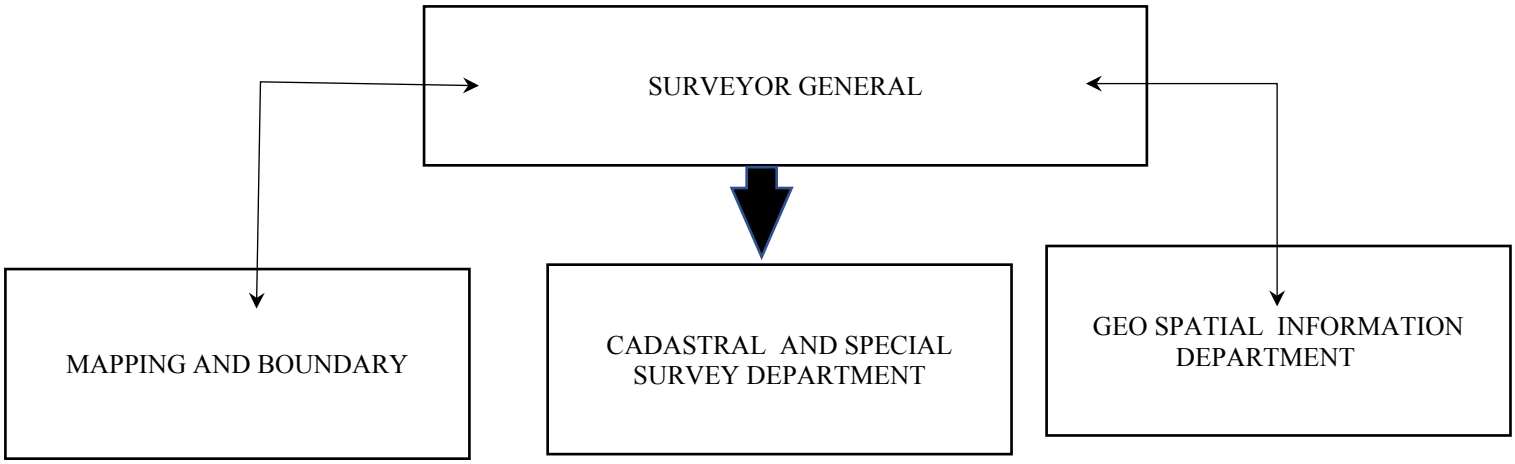
iii. GIS Section

iv. Admin. Section

v. Finance and Accounting Section

vi. SIWES/IT Student Section

ORGANOGRAM OF THE OFFICE OF THE SURVEYOR GENERAL OF KWARA STATE



CHAPTER THREE

INTRODUCTION TO SURVEY INSTRUMENTS

1.1 WHAT IS SURVEY?

A survey is the process of collecting data and information about a particular area, object or phenomenons through observation, measurements, and mapping.

1.2 WHAT IS INSTRUMENT?

An instrument is a device used to measure and record data related to the position, distance, angle and direction of an object or points on the Earth's surface.

1.3 WHAT IS SURVEY INSTRUMENTS ?

Survey instrument is a tools or a device used In a survey research study.

1.4 SURVEY INSTRUMENTS AND THEIR USES

Here are some common instruments used in surveying, along with their uses:

1. **Theodolite**

- Measures horizontal and vertical angles between reference points.
- Used for triangulation, traversing, and angle measurements.

2. **Total Station**

- Combines the functions of a theodolite, electronic distance measurement (EDM), and data storage.
- Used for topographic surveys, layout, and as-built surveys.

3. **Electronic Distance Measurement (EDM)**

- Measures distances between points using laser or infrared signals.
- Used for distance measurements, especially in inaccessible areas.

4. **Level**

- Measures the difference in elevation between two points.
- Used for leveling, grading, and elevation measurements.

5. **Tape**

- Measures distances between points using a physical tape.
- Used for short-distance measurements, especially in dense vegetation or urban areas.

6. **Compass**

- Measures directions and bearings between reference points.
- Used for orienting maps, determining directions, and measuring bearings.

7**. GPS Receiver**
- Uses satellite signals to determine precise locations and elevations.
- Used for geodetic surveys, mapping, and navigation.

8. **Laser Scanner**
- Creates high-density point clouds of objects and environments.
- Used for 3D modeling, surveying, and mapping.

9. **Dumpy Level**
- Measures the difference in elevation between two points.
- Used for leveling, grading, and elevation measurements.

10. **Clinometer**
- Measures the angle of inclination or slope of a surface.
- Used for measuring slopes, inclinations, and vertical angles.

11. **Alidade**
- Used for measuring angles and directions.
- Used for triangulation, traversing, and angle measurements.

12. **Planimeter**
- Measures the area of a plot or shape.
- Used for calculating areas, especially in cadastral surveys.

13. **Chain and Pin**

- Measures distances between points using a physical chain.
- Used for short-distance measurements, especially in dense vegetation or urban areas.

14. **Staff and Level Rod**
- Measures the difference in elevation between two points.
- Used for leveling, grading, and elevation measurements.

15. **Gyrotheodolite**
- Measures the orientation of a point or line.
- Used for determining directions, especially in tunnel surveys.

These instruments are used in various surveying applications, including:

- Topographic surveys
- Cadastral surveys
- Engineering surveys
- Geodetic surveys
- Mapping and GIS
- Construction and layout
- Monitoring and deformation analysis

CHAPTER 4

INTRODUCTION TO AUTOCAD

4.1 **WHAT IS AUTOCAD?**

AUTOCAD is a computer-aided design (CAD) software used for creating, modifying, and analyzing digital models of physical object and environment.

4.2. **HISTORY OF AUTOCAD**

AUTOCAD was first released in 1982 by Autodesk inc, and has since become one of the most widely used CAD software in various industries.

4.3. **TYPES OF AUTOCAD**

1. **AUTOCAD (FULL VERSION):** The standard, Full featured version of autocad suitable for most user.

2. **AUTOCAD CIVIL 3D**: A specialized version for civil engineers with features for infrastructure design, analysis and simulation.

3. **AUTOCAD MAP 3D:** A version for geographic information systems (GIS) and mapping professionals

4. **AUTOCAD PLANT 3D:** A version for plant design and engineering, with features for 3D plants design and documentation.

5. **AUTOCAD ARCHITECTURE:** A version designed for architecture with features for building design documentation and visualization.

4.4 **BENEFITS OF USING AUTOCAD**

1. Improval accuracy
2. Increased productivity
3. Enhance collaboration
4. Cost-effective

4.5 **PROCEDURE FOR PLOTTING AUTOCAD**

STEP 1: **HOW TO SET PRIMARY SETTING**

* Go to format
* Click on unit
    * Lenth - decimal
    * Precision - 3 decimal places
    * Unit of scale - METER
    * Angle type - deg/min/sec
    * Precision - 0°00'00"

* Then click on clockwise
* Click direction - NORTH
* Click "OK"

STEP 2: **HOW TO SET BEACON SIZE**

* Go to format
* Click on point style
* Point scale/style
* Scale - 1:500 = 1.2
  1: 1000= 2.4
* Invalid input: click on "set size in absolute unit"

STEP 3: **HOW TO SET TEXT STYLE SETTING**

* Go to format
* Click on text style
* Click on Font name : Time New Roman
* Click on Font style: Regular
* Click on height: 1.2
* N.B: the height depends on the scale you see
* Click on Apply
* Then close

Now we can start picking our point by input coordinate.

CHAPTER FIVE

5.0 Summary of attachment activities

5.1 Problem Encounter during the program

The Student Industrial Work Experience Scheme (SIWES) is undoubtedly a crucial program for bridging the gap between classroom learning and practical experience. However, despite its many benefits, SIWES is not without its challenges. These challenges can significantly impact the overall effectiveness of the program and the experiences of the students involved.

Placement Issues

One of the most significant challenges of SIWES is securing relevant placements for all students. This issue is particularly pronounced in regions with limited industrial activities or specific industries. Students often struggle to find organizations that are willing to take them on for their industrial training. This can be a source of immense frustration and anxiety, especially for students who are eager to gain experience in their specific field of study.

Financial Constraints

Financial constraints pose another significant challenge for many students. The cost of transportation, accommodation, and other expenses during the industrial attachment can be burdensome. While some institutions or companies provide stipends, these are often insufficient to cover all expenses, leaving students to bear the additional costs.

5.2. Suggestions for the improvement of the scheme

Based on my experience during the SIWES program, I propose the following suggestions to improve the scheme:

Better Supervision and Mentoring
- Assign experienced supervisors/mentors to guide students throughout the program.
- Regular meetings and feedback sessions to ensure students are meeting program objectives.

Enhanced Orientation Program
- Conduct a comprehensive orientation program for students before the commencement of the SIWES program.

5.3 Recommendation
There is no doubt that some students during their Industrial Training do not have the opportunity of being exposed or intentional do not attend SIWES PROGRAMED.Those external supervisors should be sent to the various industrial training attachment areas and centers to find out if the Industrial Training is suitable and functional.