



A TECHNICAL REPORT ON

**STUDENT INDUSTRIAL WORK EXPERIENCE
SCHEME (S.I.W.E.S)**

UNDERTAKEN

**NIS/APPSN SECRETARIT, IKOYI AVENUE, OFF NEW YIDI ROAD ILORIN
KWARA STATE.**

BY

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DEPARTMENT OF SURVEYING AND GEO-INFORMATICS

**IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF
NATIONAL DIPLOMA (ND) IN SURVEYING AND GEO-INFORMATICS
KWARA STATE POLYTECHNIC**

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PREFACE

The industrial training experience is organized to introduce student to the practical aspect of their chosen course of study in their profession.

This programme is of immense importance to engineer student because it will give them a foresight of what will be encounter in their various investment in future, it is the moral aspect, creativity, level of attitude to work, relationship with other student, industrial work experience take care of all these.

DEDICATION

This report is dedicated foremost to God Almighty for his favor, mercy and grace upon my life especially during my 4 month siwes programme at Nis/Appsn Secretariat, Ikoyi Avenue, Off New Yidi Road Ilorin Kwara State.

I would also like to dedicate this report to my Parent **Mr. & Mrs. Oladipupo** and My siblings for their love and support and everyone else that contributed towards making my siwes training fun and successful one.

ACKNOWLEDGMENT

I will like to give my profound appreciation and gratitude goes to Almighty God for his special love mercy over me, also the strength, power and prosperity given to me throughout the period of this training.

I will also extent my greeting to my industrial based supervisor and host of all staff in Surveying And Geo-informatics and for the help of training given to me during the course of my training God bless you all (Amen).

I pray for almighty God to give you long life in order for me to be beneficent to you in future. (Amen)

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CHAPTER ONE

1.0 INTRODUCTION

This report is a conscious attempt in partial fulfillment of the requirement for the award of the National diploma. The aim is to know good material to be used for any construction project and the normal scale for any Surveying And Geo-informatics.

It will tell us more about project execution and the material to be used, this will automatically make us to know whether to rely totally or partially on any executing project years ago, constructed building are easily and quickly goes out of existence (loose it standard) many structures collapse due to the fact that poor/bad materials used workmanship, earth movement of settlement of foundation.

The problems were said to have been caused by things, but the major cause of this problems is due to bad materials used and workmanship.

It has been discovered that this problems facing most of construction on project can be solve if our Engineers/constrictors can used quality not quantity of materials and supervised the workmanship very effective. It affords student of tertiary institutions the opportunity of being familiarized and exposed to the needed experience in handling machinery and equipment which are not available in the educational sector.

The industrial Training Fund (ITF) was set up under act No 47 of 1971 (as amended up to date) to promote and encourage the acquisition of the skills in industrial of the commerce with a view to generate a pool of indigenous trained manpower sufficient to meet of the economy.

Participation of SIWES has become a mandatory precondition for the award of diploma and degree certificates in specific disciplines in most Institutions with the education policy of government operator. The ITF, the coordinating agencies (NUC, NCCE,NBTE). Employers of labour and the institutions

- I. **Funding:** The Federal Government of Nigeria.
- II. **Beneficiaries:** Under graduate students of the following Agriculture, Engineering, Technology, and Environment Scheme. Education, Medical Science and pure and applied Science

1.1 DEFINITION OF SIWES

Students Industrial Work Experience Scheme (SIWES) can be defined as the practical experience of student in order to have quality control and satisfactory performance, when in the field. ‘SIWES’ can be interest in a particular subject which is connected with the people and activities involves in producing a particular. Thing (industrial) by involving in a hard physical work rather than office work (work) in order to gain knowledge and skill through the job undergo for a period of time (Experience) under a system of organizing things (scheme).

1.2 HISTORY OF SIWES

Student industrial work experience established by industrial Training Fund (ITF) in 1993 to solve the problem the lack of adequate practical skills preparatory for employment on Nigeria industries.

The scheme exposes student to industrial based skill necessary for a smooth transition from classroom to the word of work.

Duration: Four months for polytechnic colleges of education and six month engineering students of the University.

1.3 OBJECTIVE OF SIWES

1. To improve the technology development of the country.
2. To help students to put into practice what they have learnt theoretically in school.
3. The scheme exposes students to industrial based skill necessary for a smooth transition from the classroom to the world of work.
4. To exposes the students and broaden their knowledge on the practical aspect of the course they are pursuing in their various schools
5. To promote and encourage the acquisition of skills in industries and commerce with a view to generate a poor of indigenous trained manpower, sufficient to meet the needs of the economy.
6. To help to solve the problem of lack of adequate practical skill preparatory for employment in industries by Nigeria graduates of tertiary institutions.

CHAPTER TWO

COMPANY PROFILE (NIS/APPSN SECRETARIAT)

The Nis/Appsn Secretariat was established in 2017, The decision to establish the Secretariats was announced during the launching of the four years development plan in 1971 in agreement with the policy of the Federal Military Government on training and man power supply as contained in the second National Development Plan.

It was founded by group of Surveyor whose aim is Ensuring precise land measurement and mapping for construction, land ownership, and development projects.

Presently the organization has grown wide to the extent that it has several departments.

2.1 WORKS DEPARTMENT

The Works Department at Nis/Appsn Secretariat, plays a crucial role in overseeing the planning, design, survey, and maintenance of the institution's physical infrastructure. This department is responsible for managing various projects related to buildings, roads, utilities, and other facilities on the campus.

The Works Department at Nis/Appsn Secretariat typically consists of a team of engineers, architects, surveyors, technicians, and other professionals who work together to ensure that the institution's infrastructure meets the needs of students, staff, and visitors. They are responsible for maintaining a safe, functional, and aesthetically pleasing environment for the campus community.

Some of the key responsibilities of the Works Department at Nis/Appsn Secretariat may include:

- i. Infrastructure Development – Planning, designing, and supervising the construction of roads, bridges, buildings, and other public structures.
- ii. Maintenance and Repairs – Ensuring regular upkeep, renovation, and repair of government or company-owned structures, including roads, drainage systems, and facilities.
- iii. Project Management – Overseeing construction projects from inception to completion, ensuring they meet quality standards, budget, and timelines.
- iv. Quality Control and Safety Compliance – Ensuring all construction works adhere to industry standards, safety regulations, and environmental laws.
- v. Procurement and Material Management – Sourcing, managing, and distributing construction materials and equipment required for various works projects.

The Works Department at Nis/Appsn Secretariat plays a vital role in supporting the overall mission of the institution by providing and maintaining quality infrastructure that enhances the teaching, learning, and research environment for students and staff

CHAPTER THREE

3.0 REPORT ON SIWES TRAINING

- I. AUTO CAD
- II. HOW TO CHART ON AUTO CAD
- III. CONVERSION FROM METER TO FEET
- IV. CONVERSION OF SQUARE FEET TO SQUARE METER
- V. RELATIONSHIP BETWEEN CHAIN AND HECTER
- VI. SHEET INVENTORY
- VII. HOW TO DEEP FILES
- VIII. HOW TO DRAW GRID
- IX. HOW TO USE HANDED GPS

- i. **Auto Cad:** We use AutoCAD primarily for drafting, mapping, and analyzing survey data. The software helps them translate field measurements into accurate digital representations of land features, property boundaries, road alignments, and infrastructure layouts. Below are some key ways we utilize AutoCAD.

- Creating Survey Maps and Plots
- Importing and Processing Survey Data
- Drawing Contour Maps and Elevation Models
- Designing Road Alignments and Infrastructure Layouts
- Boundary and Cadastral Surveying
- Volume Calculation for Earthworks

- ii. **HOW TO CHART ON AUTO CAD :** Charting on AutoCAD involves creating visual representations of survey data, design plans, or technical information using various tools and features within the software. Here's a step-by-step guide on how to chart in AutoCAD:

- Setting Up the AutoCAD Workspace
- Importing Data
- Drawing Axes and Grid Lines
- Plotting Data Points

- Creating Bar, Line, or Pie Charts

iii. CONVERSION FROM METER TO FEET

Conversion from meters to feet involves multiplying the length in meters by 3.28084, since 1 meter = 3.28084 feet.

Formula:

$$\text{Feet} = \text{Meters} \times 3.28084 \quad \text{Feet} = \text{Meters} \times 3.28084$$

Examples:

- 5 meters = $5 \times 3.28084 = 16.4042$ feet
- 10 meters = $10 \times 3.28084 = 32.8084$ feet
- 50 meters = $50 \times 3.28084 = 164.042$ feet

iv. CONVERSION OF SQUARE FEET TO SQUARE METER

To convert from square feet (ft²) to square meters (m²), use the following formula:

$$\text{Square Meters} = \text{Square Feet} \times 0.092903 \quad \text{Square Meters} = \text{Square Feet} \times 0.092903$$

Since 1 square foot = 0.092903 square meters, multiplying the area in square feet by 0.092903 gives the equivalent area in square meters.

Examples:

- 100 ft² = $100 \times 0.092903 = 9.2903$ m²
- 500 ft² = $500 \times 0.092903 = 46.4515$ m²
- 1000 ft² = $1000 \times 0.092903 = 92.903$ m²

v. RELATIONSHIP BETWEEN CHAIN AND HECTER

The relationship between chain and hectare is based on their definitions in land measurement.

i. Definitions:

- Chain (ch): A chain is a unit of length commonly used in land surveying. 1 chain = 66 feet = 20.1168 meters.
- Hectare (ha): A hectare is a metric unit of area. 1 hectare = 10,000 square meters (m²).

ii. Relationship Between Chain and Hectare:

- 1 chain \times 1 furlong (10 chains) = 1 acre (4046.86 m²)
- 1 hectare = 2.471 acres
- Therefore, 1 hectare \approx 10 chains \times 10 chains (100 square chains)

vi. SHEET INVENTORY

Sheet inventory refers to the systematic documentation, organization, and management of survey or engineering drawing sheets. It ensures that all necessary plans, maps, or blueprints are properly recorded, tracked, and maintained for reference, updates, and project execution.

vii. HOW TO DEEP FILES

Deep filing refers to the systematic organization, storage, and archiving of files, whether physical or digital—for easy retrieval and long-term preservation. It ensures that important documents remain accessible while minimizing clutter and loss.

Steps to Deep File

- ❖ Categorization
- ❖ Labeling and Indexing
- ❖ Choosing Storage Location
- ❖ Implementing a Filing System
- ❖ Backup and Security
- ❖ Regular Maintenance and Review

viii. HOW TO DRAW GRID

Drawing a grid is essential in mapping, engineering, architectural design, and surveying. A grid helps in scaling, aligning objects, and maintaining proportional accuracy in drawings. Below are the steps to draw a grid manually or using software like AutoCAD.

Manual Method (Using Graph Paper or a Ruler)

- ❖ Determine the Grid Size
- ❖ Draw Horizontal Lines
- ❖ Draw Vertical Lines
- ❖ Label the Grid
- ❖ Open AutoCAD and Set Units
- ❖ Create a Rectangle or Grid Boundary

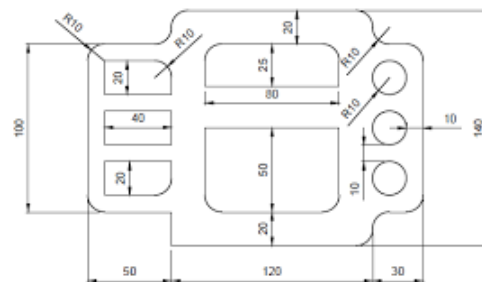
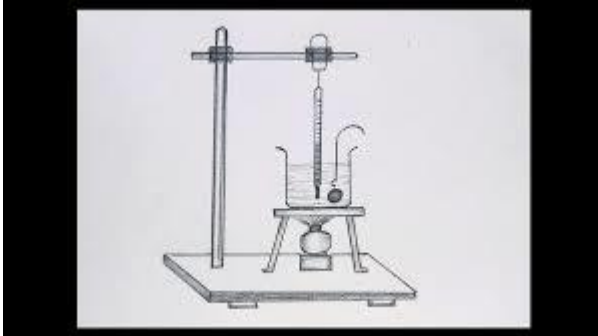
ix. HOW TO USE HANDED GPS

A handheld GPS (Global Positioning System) device is used for navigation, surveying, mapping, and location tracking. It provides real-time position data using satellite signals. Below are the steps to effectively use a handheld GPS:

- i. Power On the Device
- ii. Set Up the GPS
- iii. Acquire Satellite Signals
- iv. Mark Waypoints
- v. Navigate to a Location
- vi. Track Movement and Record Routes
- vii. Measure Distance and Area
- viii. Download and Analyze Data
- ix. Power Off and Store the Device

CHAPTER FOUR

4.0 Images Showing Practical Work and Steps on Site



4.1 Impression about the organization

Impression about the industrial training base on four months programs (siwes) was the acceptance of my siwes letter in their organization and also for provision of a construction site to enlighten and show all siwes student the practical work style of a professional builder on a construction site.

4.2 Personal relationship with the organization

The personal relationship with the company is highly correlating, because the company accepts the training of the siwes students as their personal assignment, by showing us different techniques in building construction.

The welfare and care given to us in the company was highly impressive because the company attached each and every one of the siwes students to different supervisors in which we are free to ask questions about every unclear aspect during field work on site.

CHAPTER FIVE

5.0 CONCLUSION

This program has brought improvement to my field of study. The experience gained through this program is majorly based on substructure and superstructure works on a four bedroom- bungalow, this program has inspired me to have technical knowledge and practical aspect of what I have learnt in school.

I hereby forward my appreciation to the Rector and Director of the Institute, HOD of my Department, and Professional Lectures in my department including my colleague in training, friends and every member of my family for their support both moral and financial.

My prayer to you all is for God in his infinity mercy bless you and reward every of your endeavor abundantly .

5.1 RECOMMENDATION

As a result of difficulties experience during the Four months SIWES program, I will like to recommend the following changes;

- The Industrial Training Fund should make monthly allowance available for students, so as to put end to financial difficulties that may arise as a result of transportation problems.
- The Institution must confirm that each student partake in the Industrial Training program, by making sure that they pay every student a visit before the end of the program.
- The Institution and Industrial Training Fund should help the student to get the place of attachment, so that the program will commence as planned.
- Students on SIWES program should be posted or deployed to the Organizations, Department or Firms that are relevant to their Course of study, so that the sole aim of SIWES can be achieved.