



A TECHNICAL REPORT
STUDENT INDUSTRIAL WORKING EXPERIENCE SCHEME
(SIWES)

Held at
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DEDICATION

I dedicate this technical report to the Almighty Allah, the giver of knowledge, wisdom and who is rich in mercy.

ACKNOWLEDGEMENT

I take this opportunity to express my profound gratitude and deep regards to the creator of heaven and earth, the one who knows the beginning and the end, the Almighty Allah and also to my Parent (MR & MRS HASSAN). and to all those who has helped me during my SIWES programme. The blessings, help and guidance given by them, time to time has carry me so this far and shall carry on the journey of life on which I am about to embark. I also take this opportunity to express a deep sense of gratitude to compliment my supervisor for his cordial support valuable information and guidance which helped me in completing my SIWES through various stages.

Lastly my deep regard to the best and most inspiring brother and sister may all mighty Allah (S.W.T) be with you all. Aameen.

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CHAPTER ONE

GENERAL INTRODUCTION OF SIWES

1.1 INTRODUCTION AND HISTORY OF SIWES

The Students Industrial Working Experience Scheme (SIWES) is a skill training, program designed to expose and prepare students of universities, polytechnics and colleges of education etc. for industrial work experience application they are likely to meet after graduation. The scheme also afford students the opportunity of familiarizing and exposing themselves to requisite experience in handling equipment and machines that may not be available in their institutions.

Before the establishment of the scheme, there was a growing concern among our industrialists that graduate from higher institutions of learning in Nigeria lacked adequate practical background studies preparing for employment in industries. Thus, the employers of labor were not responsive enough to the needs of the employees of labor. It is against this background that ITF was formed in the year 1973/74 so as to acquaint students with the skills of handling machines.

The ITF, solely funded in its formative years, but as the financial involvement became unbearable to the fund, it withdraw from the scheme in 1978. The federal government handed over the scheme in 1979 to both the National Universities Commission (NUC) and the National Board for Technical Education (NBTE). Later the Federal Government in November 1984 revert the management and implementations of SIWES program to ITF and it was effectively taken over by the Industrial Training Fund in July 1985 with the funding being solely borne by the Federal Government.

1.2 AIM AND OBJECTIVES OF THE SIWES

The aim of SIWES programme is all about strengthening future employees. Such program is successful attempt to help students to understand the underlying principles of their future work. After passing the programs, the student can concentrate on the really necessary factors of his or her work.

Specifically, the objectives of the Student Industrial Work Experience Scheme (SIWES) are to:

- I. To provide students with industrial skills and needed experience.

- II. To create conditions and circumstances, which can be as close as possible to the actual workflow?
- III. To prepare specialist who will be ready for any working situations immediately after graduation.
- IV. To teach students the techniques and methods of working with facilities and equipment that may not be available within the walls of an educational institution.
- V. To give students the ability to try and apply the given knowledge.
- VI. To help students appreciate the role their profession play in the society.

1.3 ROLE OF BODIES INVOLVED IN THE MANAGEMENT OF SIWES PROGRAMME

The Federal Government of Nigeria, Industrial Training Fund (ITF), the Supervising Agencies; National Universities Commission (NUC), National Board for Technical Education (NBTE), and National Commission for Colleges of Education have roles assigned to them pertaining management of the SIWES program. The roles are as follows:

FEDERAL GOVERNMENT

- I. To provide adequate fund to the Industrial Training Fund (ITF) through the Federal Ministry of Industries for the Scheme.
- II. To make it mandatory for all ministries, companies and prostate to offer place for attachment for students in accordance with the provisions of Decree No. 47 of 1971 as amended in 1990.

THE INDUSTRIAL TRAINING FUND (ITF)

The ITF established by decree No. 47 of 8th October, 1971 with the aim of promoting and encouraging the acquisition of skill in commerce and industry with a view to generate a pool of indigenous manpower sufficient to meet the needs of the economy. To motivate the students, ITF pays some money at the end of SIWES period. This has encouraged the students and the organizations to put in more effort in learning the

work and train them with all sincerity. This has also positively affected the economy of the country as the quality of work force has greatly improved.

The ITF is to:

- I. Formulate policies and guidelines on SIWES for distribution to all the SIWES participating bodies, institutions and companies involved in the scheme.
- II. Regularly organize orientation programs for students prior to their attachment.
- III. Receive and process, master and placement list from the institutions and supervising agencies i.e. (NUC, NBTE and NCCE).
- IV. Supervise students on industrial attachment
- V. Disburse supervisory and students allowances
- VI. Organize biennial SIWES National Conferences and Annual SIWES Review Meeting

CHAPTER TWO

2.1 KWARA GEOGRAPHIC INFORMATION SERVICE (KW-GIS)

The Kwara State Geographic Information Service (KW-GIS) bill was passed into Law by the State House of Assembly and assented to by His Excellency, Mallam AbdulRahman AbdulRazaq in the year 2020, which by this Law, the Kwara State Urban and Regional Planning and Development Law No 13 of 2017 was repealed, making KW-GIS a Parastatal, which shall directly report to the Office of the Executive Governor of the State.

In 2021, the State Government established the Kwara State Geographic Information Service (KW-GIS) as an Agency to provide modern and efficient land administration in Kwara State, improve land Administration, provision of modern equipment and other processes related to land with the use of technology and digital platforms. This development would also lead to the collocation and harmonization of all the four Departments in the built environment in the State namely: Bureau of Lands, Office of Surveyor General, Town Planning Development Authority and Urban and Regional Planning that deal with land administration, with the purpose to minimize bottlenecks, enhance efficiency, curtail the activities of land grabbers, digitize and serialize title documents.

The Agency as a system consists of four major Directorates which are: Directorate of Lands; Directorate of Urban & Regional Planning; Directorate of Physical Planning and Development Control and the Office of the Surveyor General.

2.2 MISSION AND VISION

The new arrangement is to ensure proper Administration and Management of Land and Building matters in the State as well as all issues relating to Titles, Registration, Searches, Physical Planning and Urban Development and other responsibilities as may be determined by the Executive Governor of the State.

The Agency ensures that all developmental activities in the State are in line with the State Master Plan and are not altered by the citizens/and activities of citizens in order to promote growth and rapid development so as to have a viable, peaceful and serene environment for all and sundry in the State.

The digitalized record keeping as part of land reforms initiated by the present administration in the State under His Excellency, the Executive Governor, Mallam AbdulRahman AbdulRazaq (CON) through the establishment of KWGIS in 2021, is to protect titles in lands by bringing documentation of land transactions in Kwara State into the 21st century and giving up-to-date information on land acquisitions and dealings.

2.3 RESPONSIBILITIES

a) Development and maintenance of a database of all Land within the State, particularly with respect to title history, location, size, use and other related data.

- b) Introduction, implementation and sustainability of best practices for Land ownership and title certification in the State.
- c) Access to existing data on Land for the purpose of conducting title searches for members of the public at a fee to be prescribed from time to time by the service in consonance with other related Laws.
- d) Undertaking such other activities as may be required for the efficiency management and administration of Land matters and other related data in the State.
- e) Development and maintenance of a geospatial information system or such approach system and structures for overall development, research and land management and the service may subject to the approval of the Government by an order published in the Gazette, make regulations for the effective operation of the Law and the due administration thereof.

CHAPTER THREE

3.1 INTRODUCTION ON OSCAR

Overview The Oscar GNSS receiver is a new generation GNSS RTK system. It supports calibration-free tilt compensation function which is immune to magnetic disturbances, leveling pole is not required. Easy configuration with 1.54inch interactive screen on Ultimate and Advanced versions. With an internal high-performance multi-constellation and multi-frequency GNSS board, the Oscar GNSS receiver can provide high accuracy and stable signal detection. The high-performance antenna can speed up the time to first fix (TTFF) and improve anti-jamming performance. The built-in large capacity battery is detachable, two batteries support up to 16 hours of field work in 4G/3G/2G network and Rover radio mode. The built-in UHF radio module supports long distance communication. The rugged housing protects the equipment from harsh environments. The Oscar GNSS receiver



3.2 INTRODUCTION TO AUTOCAD SOFTWARE

Designing is the process of converting an idea into an object, product or a system. This process is iterative. CAD (Computer Aided Design) is a tool that can be used for design and drafting activities. Since it uses the computing power of a processor, CAD drawings are faster, better and more accurate than their manually drafted counterparts. AutoCAD is sophisticated CAD software that is synonymous with engineering drafting. The concept of AutoCAD evolved way back in the 1980's, when engineers and architects were seeking to harness the power of newly introduced personal computers to reduce the drafting time. People began experimenting with internal graphic controllers which allowed them to draw engineering / architectural drawings at the front end which were efficiently replicated at the back end of the computer. AutoCAD was formally launched in December 1982 by Autodesk, a leader in 3D design, engineering and entertainment software. Simply put, AutoCAD enables

engineers, designers and architects to produce 2D and 3D models using computers. AutoCAD started as a design tool for engineers and architects, but is now used by other professionals as well. Autodesk, the company behind AutoCAD, has developed custom versions that can be used by design engineers, civil engineers, electrical and electronics engineers and mechanical engineers. AutoCAD thus covers a vast canvas - from engineering to industrial sector, there is an AutoCAD package for everyone. In that sense, AutoCAD is a horizontal product. It is used by product development teams, manufacturing facilities, media and entertainment industries, engineers, architects; educators and students; entrepreneurs, non-profits, medical professionals, and including beginners. AutoCAD is thus useful for any domain that requires 2D and 3D designs.

3.3 PLATFORMS AND VERSIONS

In addition, AutoCAD also has mobile versions for both Android and Apple phones. As far as price is concerned, AutoCAD comes in two packages – AutoCAD and AutoCAD LT. AutoCAD LT is a slightly stripped version of AutoCAD, the most prominent limitation being the ability to manipulate 3D objects. If you are mostly into 2D designs, you can easily make do with AutoCAD LT rather than the full version.

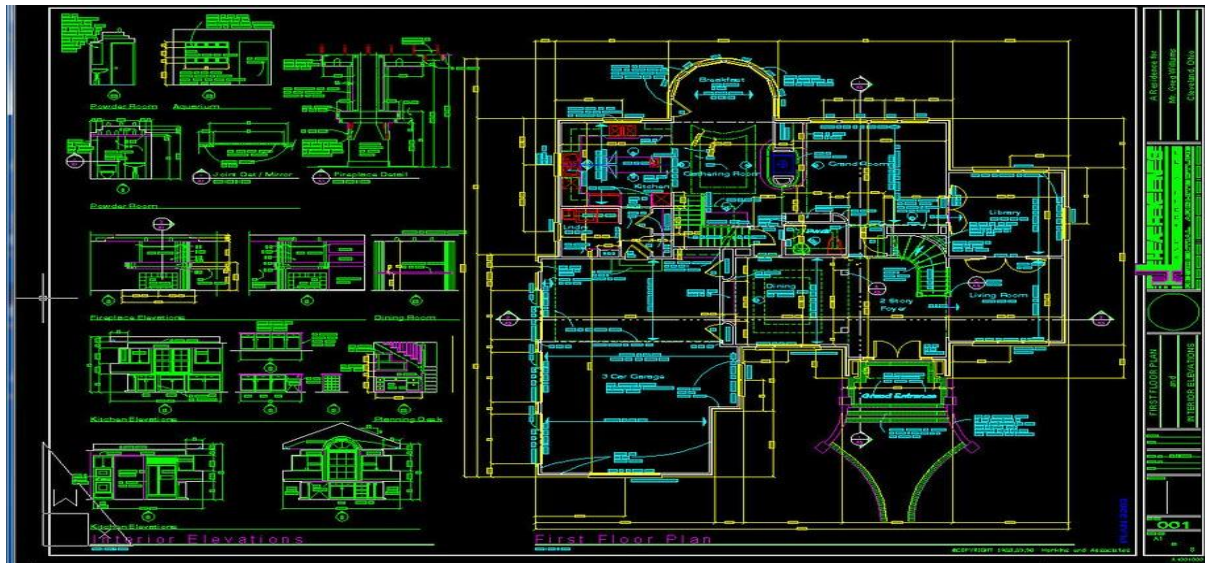
AutoCAD can also be classified depending on the domain it serves. Currently, different versions of AutoCAD support the following domains:

- Architecture
- Electrical design
- Map 3D
- Mechanical design
- MEP (mechanical, electrical and plumbing)
- Plant 3D, including P&ID functionality
- Raster design

AUTOCAD TRAINING

AutoCAD is a comprehensive software that caters to a wide range of users. Since its launch in 1982, each new version has introduced enhanced features, making it an increasingly powerful tool. The rapid advancement of processor technology in both personal computers and mobile devices has enabled Autodesk to integrate more sophisticated capabilities into AutoCAD. For those looking to learn CAD, AutoCAD

provides a solid foundation, as many of its commands and concepts are widely adopted by other CAD software. In fact, some of its features have become industry standards. For instance, the .DXF format, introduced by Autodesk, is now universally recognized for CAD file conversion across different platforms.



PERIMETER

Perimeter / Boundary Surveys are carried out for the purpose of delineating the boundary of a parcel of land, determining its area and preparation of survey plan. The survey plan is usually the end product of a boundary survey. The survey plan shows ownership and describes the land. It is a document required by law during processing of any land title. We will help you prepare your survey plan and lodge the record (red) copy in the Office of the Surveyor General of the state.

It is very important to request for a perimeter survey before acquisition of land in Lagos. Perimeter Surveys are usually carried out for other purposes such as:

- Settling a land dispute
- Determining encroachment
- Subdivision of land
- Re-establishing missing beacons



About Cadastral Surveying

Cadastral surveying is the discipline of land surveying that relates to the laws of land ownership and the definition of property boundaries. It involves interpreting and advising on boundary locations, on the status of land ownership and on the rights, restrictions and interests in property, as well as the recording of such information for use on plans, maps, etc. It also involves the physical delineation of property boundaries and determination of dimensions, areas and certain rights associated with properties, whether they are on land, water or defined by natural or artificial features.

Cadastral surveys are generally performed to subdivide land into parcels for ownership under a land title and to re-establish boundaries of previously surveyed properties to determine the physical extent of ownership or to facilitate the transfer of the property title.

A surveyor, who is registered as a licensed surveyor under the *Surveying Act 2004*, is the only person authorised to perform cadastral surveys in Victoria. The regulation of cadastral surveying reflects the importance with which Government holds Victoria's cadastre. The cadastre is a parcel-based system of property (land) administration. It is comprised of physically delineated boundaries, being the extents of parcels or interests in parcels, and datasets containing the public record of the interests (ie. rights, restrictions and responsibilities) in those parcels. The government and community entrust licensed surveyors to maintain and protect the integrity of the cadastre, which underpins economic development through confidence in the property market.



3.4 SURVEY AND SURVEYING INSTRUMENTS

What is Survey?

Survey is a technique, profession and science of accurately determining the terrestrial or three dimensional position of points and the distance and angles between them commonly practiced by surveyors and members of various engineering profession.

SURVEYING INSTRUMENTS

Ranging Pole: It is a 5m straight piece of wood or steel colored red and white used for alignment during survey.

Compass: Is used for measuring bearings from 0° to 360° in clockwise direction.

Theodolite: Is used for measuring both horizontal and vertical angles.

Leveling Instrument: Is used for measuring the difference in height between points on the surface of the earth they are of different types: automatic level, dumpy level, digital level etc.

Total Station: Used in determining the coordinate of positions, angles and bearing can also be determined.

Tripod Stand: Is equipment used in mounting survey instrument such as theodolite, level, total station etc.

Leveling Staff: Also called leveling rod used with a leveling instrument to determine the difference in height between points above a datum surface.

Gunter Chain: A formal measuring instrument of 66 ft (20.1m) long, subdivided into 100 links, each of which is a short section of wire connected to the next link by a loop.

Measuring Tape: A flexible ruler that is used to measure distance. It consists of a ribbon of cloth, plastic, fibre glass, or metals strip with linear measurement markings.

G.P.S (Global Positioning System): A framework for gathering, managing, and analyzing data. Rooted in the science of geography, it analyzes spatial location and organizes layers of information into visualizations using maps and 3D scenes.

Field Notebook: A roundup note that entails all necessary information jotted from the field.

3.5 SITE INSPECTION ANALYSIS.

INTRODUCTION

Site: - is the position or location of a town, building, plot, etc especially as to its environment. Or is an area or exact plot of ground on which anything is, has been, or is to be located. It can be described in terms of physical characteristics of the site.

Site inspection and analysis: - is the act or process of looking at something closely in order to learn more about it, to find problems, and give details account of the site in terms of physical features. Planners usually make a sketch of the inspected site in order to represent it on paper. And it mostly had been done with the presence of the site owner or representative, for witness and proper referencing.

PROCESSES INVOLVED IN SITE INSPECTION ANALYSIS.

Location of site: the planner locates the site which is to be inspected using topographical map of the area.

Identification: the planner identifies the plot boundary.

Measurement: the length and breadth of the plot is measured using either tape or chain and the measurements are being recorded.

Sketch: - draw the rough sketch of the area.

Calculation: - the dimension of the plot is calculated and recorded.

Drawing: - the planner draws the site inspection plan in the studio.

Report: - write down the report of the site inspection analysis.

Documentation: - the site inspection plan and report is documented in technical file.

Forwarding: - the technical file is forwarded to the Director Town Planning for further analysis.

THINGS TO BE NOTED WHEN REPORTING AFTER SITE INSPECTION

- Report on the specific address of the property
- Report on the boundaries of the property
- Report on the purpose of the property
- Report on the total area of the property

PRACTICAL EXPERIENCE OF SITE INSPECTION AT ILORIN KWARA STATE

I learned about sites inspection of various places within the metropolis and its environs.

Some of the various places/areas we went for site inspections are listed below:-

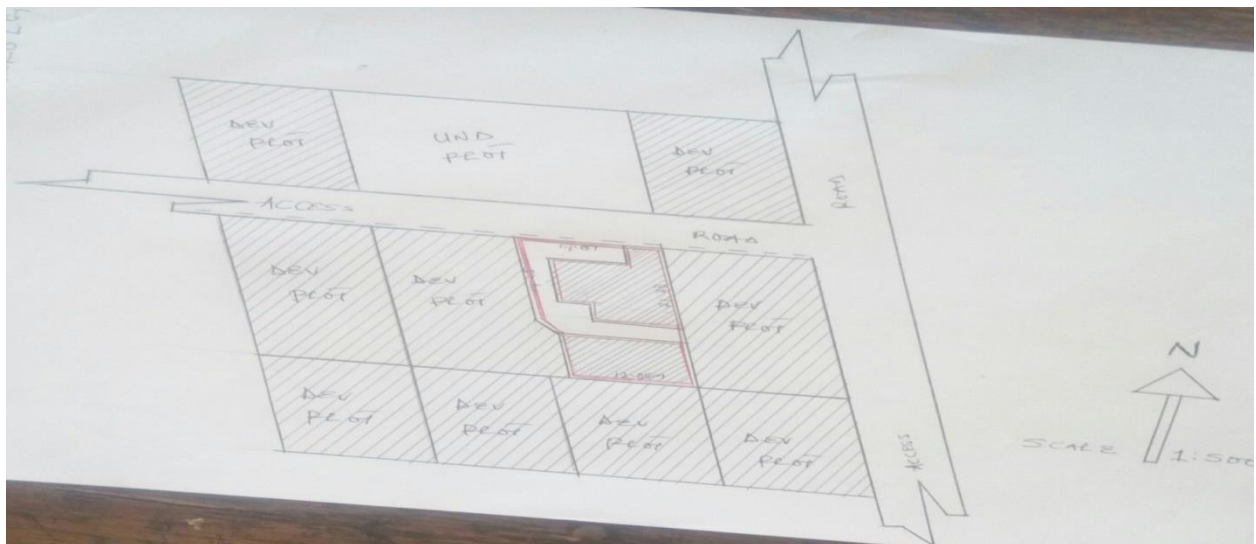
- I. A site inspection of Surv. Ayuba Abdulsalam property situated at Mandate Ilorin West local government area.
 - a. In-depth inspection was carried out in company of the applicant representative and the student on I.T
 - b. The inspection reveals that the site is situated at Mandate Kwara State
 - c. The site is for residential purpose, covering a total land area of about 390.6m². It was developed as of the time of inspection.

- d. The site is bounded by a stream to the north, access road to the south and west and by a build-up plot to the east respectively.
- e. Therefore, the application is in order and within physical planning requirement.

3.6 DRAWING SKETCH PLAN OF INSPECTED SITES

In drawing the sketch plan of inspected sites, suitable scale has to be chosen. The chosen scale depends on the type of paper the sketch is to be done, for example larger scale (1:1000) will be suitable for A4 paper type, because the larger the scale the smaller the sketch appears on the paper and the smaller the scale the larger the sketch appears on the paper. Some instruments such as; pencil, eraser, set square, scale rule, black and red pen are used in the process of drawing a sketch plan of inspected sites.

Below are some sketches of inspected sites carried out in the ministry;



NOTE: The red lines on the sketch shows the boundaries of the main area of observation and the hatched areas signifies build-up plots as of the time of the inspection.

3.7 LAYOUT DESIGN

Layout Design: This can be said as the process of designing a suitable plan containing so many plots for several functions, such as; residential, commercial, educational etc.

FEATURES OF A GOOD LAYOUT

1. Good road network
2. Accessibility to market
3. Accessibility to religious center

4. Provision of health care sector
5. Security offices
6. Availability of job opportunities
7. Adequate electricity
8. Good spacing
9. Accessibility to educational sectors

PRACTICAL EXPERIENCE OF SITE INSPECTION AT ILORIN KWARA STATE

I learned about sites inspection of various places within the metropolis and its environs.

Some of the various places/areas we went for site inspections are listed below:-

A site inspection of Prof Ridwan Olatunji Saheed property situated at Adeta road Alaba plaza part of plot beside Oko Erin. Ilorin West local government area.

- a In-depth inspection was carried out in company of the applicant representative and the student on I.T
- b The inspection reveals that the site is situated at Adeta road Kwara State
- c The site is for residential purpose, covering a total land area of about 390.6m². It was developed as of the time of inspection.
- e The site is bounded by a stream to the north, access road to the south and west and by a build-up plot to the east respectively.
- f. Therefore, the application is in order and within physical planning requirement.

During my training, I was privileged to take part in the designation of a layout titled GDP 34, which is located along OKE – SOH Along Afon Road, Kwara state, The layout consists of 886 plots, which are divided into different dimensions; 15*30m, 25*45m, 50*50m etc. (3.3ft=1m).

Each plot has its own function (residential, commercial, educational, religious etc.)it was also characterized as a layout containing higher, moderate and lower density areas.

Below are some views of the layout titled GDP 34;

The main purpose of designing this layout is to provide more settlement and also a comfortable place for the people of OKE – SOH and also to promote the development and economic level of the state at large.

3.8 ASSESSMENT OF TOWNSHIP ROAD

What is assessment? There is various definition of the word assessment, in education it is simply the ways which a teacher will follow to check, mark, reward, and placed confidence on his or her students knowing the exact capacity, ability, and well-being of the performance of the students, that calls for the student award of certificate at the end of the program attained.

Now concerning the nature and work of lands and survey ministry, assessment can be defined as the process of gratings of lands either developed or undeveloped, houses, or any order constructed erection that will be need to know the cost of construction of such valuable property, to enable the government do the necessary, by making adequate consideration in terms of rendering compensation to the property owners concerned. (Whose properties were affected)?

PROCESSES OF MAKING ASSESSMENTS

There are different processes that are involved in making an assessment exercise, and they are listed below:-

- i. Reaching the property owners.
- ii. Making of appropriate survey by the surveyor using its instrument.
- iii. Marking the affected areas i.e. signs of corridors.
- iv. Placement of road construction sings e.g. pegs, number marks, benchmarks, (km, m, cm) etc.

MATERIALS USED IN THE ASSESSMENT EXERCISE.

- i. Measuring tapes (10m, 30m, 50m, 100m, 150m, 200m, 300m,) and etc.
- ii. Pegs wooden arrows,(alignment).
- iii. Markings e.g.BM, Marks, Arrows.
- iv. Record books.
- v. Cameras if necessary.
- vi. Pens (biros, pencils, plain sheets, rulers).etc

CHAPTER FOUR

4.1 LIST OF EQUIPMENTS USED BY THE LANDS SURVEY DEPARTMENT, .

- Paper (A0, A3 & A4)
 - Set squares
 - Scale rule
 - Adjustable set square
 - T-square
 - Eraser
 - Drawing board (standing)
 - Rotary pen/ink
 - Clutch pencil
 - Pen (red/black)
 - Measuring tape
-
- **Paper:** this is a thin, flat material used for writing, drawing and painting. It is mostly used for the purpose of making the sketch of the inspected site and writing of report about the site inspected in the ministry.
 - **Set squares:** These are triangular instruments mostly used in technical drawing and engineering. They are used to provide a straightedge at a right angle or other particular planar angle to a baseline.
 - **Scale rule:** this is a three sided ruler with different scales (1:100, 1:200, 1:250 etc.), used to measure linear distance and create proportional linear measurements and also to draw straight lines.
 - **Adjustable set square:** this is also a triangular instrument that provides a straightedge at a right angle, but it's adjustable not like the ordinary set-squares.

- **T-square:** this is a technical drawing instrument used primarily as a guide for drawing horizontal lines on a drafting table, and it is also used to guide set squares to draw vertical or diagonal lines.
- **Eraser:** this is an instrument used for removing writing from paper or for erasing mistakes in the process of making a sketch.
- **Drawing board (standing):** this is a multipurpose desk which can be used for any kind of drawing or writing. The instrument can be adjust to any suitable height.
- **Rotary pen:** this is an instrument inform of a pen mostly used in layout designs having a thick black ink with different openings (0.5, 1.5, 2.0....).
- **Clutch pencil:** this is an instrument with a replaceable and mechanically extendable solid pigment core called a “lead”. It is an instrument used in drawing and writing as well.
- **Pen (red/black):** this instrument is used to trace the original sketch done with a pencil in order to make it more presentable.
- **Measuring Tape:** A flexible ruler that is used to measure distance. It consists of a ribbon of cloth, plastic, fibre glass, or metals strip with linear measurement markings.

CHAPTER FIVE

This chapter contains the summary of my six (4) month I.T experience, the problems I encountered during the process, recommendations and lastly, my conclusion.

1.1 SUMMARY

During my industrial training in the ministry of lands and survey Kwara State, I have acquired a lot of knowledge and skills concerning the activities of the ministry which include: allocation of lands to members of the public, layout design, assessment of township road, settlement of dispute among two parties, site inspection and analysis, drawing of sketch plans of inspected sites, process of obtaining statutory.

In respect to the higher ranking of the establishment, the ministry of lands and survey is headed by the commissioner and assisted by the permanent secretary and surveyor general of the state. While director's takes charge of the various departments of the ministry and staff officer (SO) take charge of the affairs of all administration works in the ministry.

In planning departments, I learned about developmental plan, how to design a plan, processes in applying for conversion of plots of land from customary to stationary plots of land, processes in acquisition of certificate of ownership (C of O), the importance of layout designs, importance of site inspection and many others functions of the departments..

5.2 RECOMMENDATION

I wish the government and the school authority to provide necessary materials for the students during this programme. They should also try to pay the students allowance so as to serve as help for the students in one way or the other.

4.3 CONCLUSION

In conclusion, The Industrial training program was a wonderful experience that provided me with the opportunity to know what it feels like to be in the working environment and how to meet and cope with office works and challenges and how to tackle matters arising from place of work, it also advance my thought about planning and survey profession in general and the type of challenge encounter when I was in such field as officer.