



## COMPLETE SKILL ACQUISITION TRAINING CENTRE (CSATC)

RC: 7803989

18, Oyo Road, Uncle Joe Building,  
Mokola, Ibadan, Oyo State.

08034722338, 08038346350  
09040008080

completeskillacquisition@gmail.com

### COURSE STRUCTURE

Developed by the Consultant

**K. A. YUSUFF (PhD), FRHD, MIAE, MTEWAN, MNATT, MTMA (08038346350)**

BSc. Vocational Industrial Technical Education,

M.Sc. Technology Policy and Planning,

PhD Technology Management,

Fmr. Director, Vocational Skills and Entrepreneurship Study Centre (VSESC) /

Former Dean, Faculty of Engineering,

Fmr. H.O.D., Mechanical Engineering Department,

Chief Lecturer, Mechanical Engineering Department,

The Polytechnic, Ibadan

### Information and Communication Technology (ICT)

This is designed to accommodate candidates aspiring to acquire skill in **desktop publishing (Graphic Designs), data processing, word processing, Software development/website design, and Artificial Intelligence (AI), Robotics and Automation Technology**. They will be encouraged to specialize in two out of the options available.

#### Course structure for Desktop Publishing

- Introduction to computer
- Characteristics of computer
- History of Computer
- Computer Generations
- Types of Computer
- Computer Organization
- Basic Computer Operation
- Introduction to Desktop Publishing
- What is Desktop Publishing
- Important Features of Desktop Publishing
- Getting Started with Desktop Publishing
- Main menu option
- Creating Folder
- Directories PageMaker
- Type Settings for Publication,
- Page Layout, Word Wrapping,
- Grouping, Merging two or more files,
- Creating columns, Tab settings,
- Paragraph settings, Hyphenation,
- Paper Style, Index & Table of Contents,
- Fonts, Mixing Text & Graphics,

- Linking objects, printing facility.
- CorelDraw Logo Designing, Frame Settings
- Graphical Tools, Bitmap & Shadow Effects, Special Effects such as Perspective, Blending, Text Settings into objects, Alignment Setting, Tabs, Power Line, Power Clip and Contour
- Import & Export Facility Photoshop
- All Tools (Marquee Tool, Magnetic Tool, Slice Tool, Patch Tool, Clone Stamp Tool, Gradient Tool, Smudge Tool, Blur Tool, Text Tool etc.)
- Fill, Stroke Option
- Histogram, Group, Ungroup
- Lock Object, Color Range
- Feather, Modify, Grow, Filter, Liquefy, Artistic, Blur, Video Option etc.
- Design of banners, posters, invitation/wedding/burial ceremony cards, etc

**ICT-DESKTOP PUBLISHING TIME TABLE (DTP)**

| <b>DAYS</b> | <b>COURSES</b>                         |                                         |                                  |                                             |
|-------------|----------------------------------------|-----------------------------------------|----------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001<br/>(9.00a.m. – 11a.m.)</b> | <b>ICT 101<br/>(11.00a.m. – 12noon)</b> | <b>BREAK<br/>(12noon -1p.m.)</b> | <b>ICT 101 (Practicals) – 1p.m. - 4p.m.</b> |
| <b>TUE</b>  | <b>ICT 102</b>                         | <b>EED 001</b>                          |                                  | <b>ICT 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>ICT 103</b>                         | <b>ICT 105</b>                          |                                  | <b>ICT 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>ICT 104</b>                         | <b>ICT 106</b>                          |                                  | <b>ICT 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>ICT 105</b>                         | <b>ICT 103</b>                          |                                  | <b>ICT 105 (Practicals)</b>                 |

**REGISTRATION FORM AND SIGNING OF  
MATRICULAR/MATRICULATION OAT BY STUDENTS  
TRADE: .....  
(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION<br/>NUMBER</b> | <b>SIGNATURE AND DATE</b> |
|------------|--------------|---------------------------------|---------------------------|
| 1          |              |                                 |                           |
| 2          |              |                                 |                           |
| 3          |              |                                 |                           |
| 4          |              |                                 |                           |
| 5          |              |                                 |                           |
| 6          |              |                                 |                           |
| 7          |              |                                 |                           |
| 8          |              |                                 |                           |
| 9          |              |                                 |                           |
| 10         |              |                                 |                           |
| 11         |              |                                 |                           |
| 12         |              |                                 |                           |
| 13         |              |                                 |                           |
| 14         |              |                                 |                           |
| 15         |              |                                 |                           |
| 16         |              |                                 |                           |

|    |  |  |  |
|----|--|--|--|
| 17 |  |  |  |
| 18 |  |  |  |
| 19 |  |  |  |
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |

## **Course Structure for Word Processing**

- Introduction to computer
- Characteristics of computer
- History of Computer
- Computer Generations
- Types of Computer
- Computer Organization
- Basic Computer Operation
- Functional Units
- Memory Systems of a Computer.
- Secondary Storage
- Input Output Device
- An introduction to Windows
- Introduction to Ms-Word
- What is Word-Processing
- Important Features of Ms-Word
- Getting Started with Ms-Word
- Main menu option
- Creating and Editing a documents
- Creating a Documents
- Moving Around the documents
- Inserting, Replacing and Deleting Character
- Using the toolbar
- Undo-Repeat
- Find and Replace Text
- Save and Exit
- Opening an Existing Documents
- Quitting Word
- Formatting a Document
- Default and Customized Format
- Character Formatting
- Line Spacing
- Alignment
- Boarding and Shading
- Page Breaks
- Columns
- Changing Case
- Adding and Removing Numbers
- Advanced Formatting
- Tab Setting
- Indenting
- Margins
- Header and Footer
- Spell Checking the Documents
- Creating and Managing Tables
- Preview and Printing a documents Printing to file

- What is Mail Merge
- Concepts of Mail Merge and its Components
- Mail Merge option of word
- Merged Printing
- Conditional Merging

**ICT-WORD PROCESSING TIME TABLE (WPR)**

| <b>DAYS</b> | <b>COURSES</b>                         |                                         |                                  |                                             |
|-------------|----------------------------------------|-----------------------------------------|----------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001<br/>(9.00a.m. – 11a.m.)</b> | <b>ICT 101<br/>(11.00a.m. – 12noon)</b> | <b>BREAK<br/>(12noon -1p.m.)</b> | <b>ICT 101 (Practicals) – 1p.m. - 4p.m.</b> |
| <b>TUE</b>  | <b>ICT 102</b>                         | <b>EED 001</b>                          |                                  | <b>ICT 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>ICT 103</b>                         | <b>ICT 105</b>                          |                                  | <b>ICT 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>ICT 104</b>                         | <b>ICT 106</b>                          |                                  | <b>ICT 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>ICT 105</b>                         | <b>ICT 103</b>                          |                                  | <b>ICT 105 (Practicals)</b>                 |

**REGISTRATION FORM AND SIGNING OF  
MATRICULAR/MATRICULATION OAT BY STUDENTS  
TRADE: .....  
(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION<br/>NUMBER</b> | <b>SIGNATURE AND DATE</b> |
|------------|--------------|---------------------------------|---------------------------|
| 1          |              |                                 |                           |
| 2          |              |                                 |                           |
| 3          |              |                                 |                           |
| 4          |              |                                 |                           |
| 5          |              |                                 |                           |
| 6          |              |                                 |                           |
| 7          |              |                                 |                           |
| 8          |              |                                 |                           |
| 9          |              |                                 |                           |
| 10         |              |                                 |                           |
| 11         |              |                                 |                           |
| 12         |              |                                 |                           |
| 13         |              |                                 |                           |
| 14         |              |                                 |                           |
| 15         |              |                                 |                           |
| 16         |              |                                 |                           |
| 17         |              |                                 |                           |
| 18         |              |                                 |                           |
| 19         |              |                                 |                           |
| 20         |              |                                 |                           |
| 21         |              |                                 |                           |
| 22         |              |                                 |                           |

|    |  |  |  |
|----|--|--|--|
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |

## **Course Structure for Data Processing**

- Introduction to computer
- Characteristics of computer
- History of Computer
- Computer Generations
- Types of Computer
- Computer Organization
- Basic Computer Operation
- Functional Units
- Memory Systems of a Computer.
- Secondary Storage
- Input Output Device
- An introduction to Windows
- Main menu option
- Computer application packages
- Introduction to Microsoft Excel
- Working with cell ranges—navigating and selecting cells with the mouse and keyboard
- Entering and editing data and employing AutoFill to enter data
- Inserting and deleting rows, columns, or cells.
- Adjusting column width and row height
- Manipulating data with cut, copy, paste, with the clipboard, or dragging the mouse
- Leveraging multiple worksheets
- Formulas and Functions
- Worksheet Formatting and Presentation
- Getting Data In and Out
- Sorting, Selecting and Subtotaling data
- Present Data Visually
- Leveraging charts to create a visual presentation
- Creating charts using wizards
- Adjusting chart settings, including titles, labels, and chart types
- Working with Views of the spreadsheet
- Setting up your workbook for printing
- Explain the meaning of data, information, and data processing;
- Identify and describe the essential hardware components of a computer system;
- Describe some software used for data processing;
- Explain file access and organization techniques;
- Describe batch processing, real-time processing, transaction processing, etc.;
- Explain the meaning of Database Management Systems and Database Model;
- Describe various tools for developing data processing applications;
- Explain the concept of visual and event-driven programming;
- Write simple Visual Basic programs;
- Write SQL statements

**ICT-DATA PROCESSING TIME-TABLE (DPR)**

| <b>DAYS</b> | <b>COURSES</b>                         |                                         |                                  |                                             |
|-------------|----------------------------------------|-----------------------------------------|----------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001<br/>(9.00a.m. – 11a.m.)</b> | <b>ICT 101<br/>(11.00a.m. – 12noon)</b> | <b>BREAK<br/>(12noon -1p.m.)</b> | <b>ICT 101 (Practicals) – 1p.m. - 4p.m.</b> |
| <b>TUE</b>  | <b>ICT 102</b>                         | <b>EED 001</b>                          |                                  | <b>ICT 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>ICT 103</b>                         | <b>ICT 105</b>                          |                                  | <b>ICT 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>ICT 104</b>                         | <b>ICT 106</b>                          |                                  | <b>ICT 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>ICT 105</b>                         | <b>ICT 103</b>                          |                                  | <b>ICT 105 (Practicals)</b>                 |

**REGISTRATION FORM AND SIGNING OF  
MATRICULAR/MATRICULATION OAT BY STUDENTS  
TRADE: .....  
(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION<br/>NUMBER</b> | <b>SIGNATURE AND DATE</b> |
|------------|--------------|---------------------------------|---------------------------|
| 1          |              |                                 |                           |
| 2          |              |                                 |                           |
| 3          |              |                                 |                           |
| 4          |              |                                 |                           |
| 5          |              |                                 |                           |
| 6          |              |                                 |                           |
| 7          |              |                                 |                           |
| 8          |              |                                 |                           |
| 9          |              |                                 |                           |
| 10         |              |                                 |                           |
| 11         |              |                                 |                           |
| 12         |              |                                 |                           |
| 13         |              |                                 |                           |
| 14         |              |                                 |                           |
| 15         |              |                                 |                           |
| 16         |              |                                 |                           |
| 17         |              |                                 |                           |
| 18         |              |                                 |                           |
| 19         |              |                                 |                           |
| 20         |              |                                 |                           |
| 21         |              |                                 |                           |
| 22         |              |                                 |                           |
| 23         |              |                                 |                           |
| 24         |              |                                 |                           |
| 25         |              |                                 |                           |



## **Course Structure for Website Design and Software Development**

- Introduction to computer
- Characteristics of computer
- History of Computer
- Computer Generations
- Types of Computer
- Computer Organization
- Basic Computer Operation
- Functional Units
- Memory Systems of a Computer.
- Secondary Storage
- Input Output Device
- An introduction to Windows
- Designing and Planning Web Pages
- What are the design principles used when creating web pages?
- What is HTML and CSS and how are they different from each other?
- What are the criteria for evaluating the quality of websites? Sequence of focus lessons
- Basic Site Creation/Evaluation
- Color Theory
- Web Standards
- Web Design Creating Pages with HTML
- What are the basics of HTML coding?
- Pre-Coding
- Basic HTML Markup
- HTML Lists
- Creating Links
- Creating a Data Table
- HTML Video
- Formatting Web Pages with Style Sheets
- How is the visual look of web pages controlled by using Cascading Style Sheets? Sequence of focus lessons
- Introduction to Cascading Style Sheets (CSS)
- Color in CSS
- Typography in CSS
- The Box Model in CSS
- The Role of ID and CClass in CSS
- Page Layout Techniques
- Graphics
- What are effective uses of graphics on web pages?
- How can you get digital images and reformat them?
- How can you create basic graphics for use on a web page? Sequence of focus lessons
- Introduction to Web Graphics
- Creating a Web Photo Album
- Creating a Button
- Creating a Web Page Banner
- How is website content organized?

- How is the navigation structure designed to be consistent across all of the pages in the website? Sequence of focus lessons
- Overview of Scripting on the Web
- JavaScript
- Web Design 3: How can websites be tested for quality?
- Validating Websites
- Testing Usability
- Website Management and Authoring
- What are some website management and authoring tools? Sequence of focus lessons
- Basic Features of Web Authoring Software
- Publishing on the Web Unit
- How do you plan, design, develop and test a website using the skills learned in the course? Sequence of focus lessons
- Client Website-Planning, Constructing, and Quality Control

**ICT-WEBSITE DESIGN AND SOFTWARE DEVELOPMENT TIME TABLE (WSD)**

| <b>DAYS</b> | <b>COURSES</b>                               |                                                  |                                        |                                             |
|-------------|----------------------------------------------|--------------------------------------------------|----------------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001</b><br><b>(9.00a.m. – 11a.m.)</b> | <b>ICT 101</b><br><b>101(11.00a.m. – 12noon)</b> | <b>BREAK</b><br><b>(12noon -1p.m.)</b> | <b>ICT 101 (Practicals) – 1p.m. - 4p.m.</b> |
| <b>TUE</b>  | <b>ICT 102</b>                               | <b>EED 001</b>                                   |                                        | <b>ICT 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>ICT 103</b>                               | <b>ICT 105</b>                                   |                                        | <b>ICT 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>ICT 104</b>                               | <b>ICT 106</b>                                   |                                        | <b>ICT 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>ICT 105</b>                               | <b>ICT 103</b>                                   |                                        | <b>ICT 105 (Practicals)</b>                 |

**REGISTRATION FORM AND SIGNING OF  
MATRICULAR/MATRICULATION OAT BY STUDENTS  
TRADE: .....  
(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION<br/>NUMBER</b> | <b>SIGNATURE AND DATE</b> |
|------------|--------------|---------------------------------|---------------------------|
| 1          |              |                                 |                           |
| 2          |              |                                 |                           |
| 3          |              |                                 |                           |
| 4          |              |                                 |                           |
| 5          |              |                                 |                           |
| 6          |              |                                 |                           |
| 7          |              |                                 |                           |
| 8          |              |                                 |                           |
| 9          |              |                                 |                           |
| 10         |              |                                 |                           |
| 11         |              |                                 |                           |
| 12         |              |                                 |                           |
| 13         |              |                                 |                           |
| 14         |              |                                 |                           |
| 15         |              |                                 |                           |

|    |  |  |  |
|----|--|--|--|
| 16 |  |  |  |
| 17 |  |  |  |
| 18 |  |  |  |
| 19 |  |  |  |
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |

## **LIST OF LABORATORIES, STUDIOS, MACHINES, EQUIPMENT, TOOLS AND CONSUMABLE MATERIALS**

### **LABORATORIES:**

1. ICT/ARTIFICIAL INTELLIGENCE/ROBOTICS LABORATORY
2. ICT/COMPUTER STUDIO
3. PRORAMMING LABORATORY

### **MACHINES AND EQUIPMENT:**

- Desktop Computers
- HP Network Printers
- D-Link Hubs
- D-Link Switches
- Panduit Network Cabling Equipment
- D-Link Wireless Network Adapters
- D-Link Wireless Access Points/Routers

### **Cisco Networking Lab Equipment:**

- Cisco 800 Series Routers
- Cisco 1700 Series Routers
- Cisco 2500 Series Routers
- Cisco 2600 Series Routers
- Cisco 2500 Series Access Servers
- Cisco Catalyst 1900 Series Switches
- Cisco Catalyst 2900 Series Switches Cisco Catalyst 3500 Series Switches
- Cisco Catalyst 4000 Series Switches
- Cisco PCI 352 Wireless Network Adapters
- Cisco Wireless 1200 Series Access Points
- Cisco PIX 515 Firewalls
- ATRAN's ATLAS 550s for WAN Emulation
- Fuke Protocol Analyzer
- Fluke Network Inspector
- Fluke 620 LAN Cable Meter
- Fluke DSP-2000 LAN Cable Analyzer
- Multimedia Projector Scanners

## Course Structure for Electrical/Mechanical (E & M) Works

This unit has hands-on training options. Candidates will learn manipulative skills and engage in the pursuance of functional manual dexterities in their course of study. They will pick two areas of specialization from the following: **Electrical installation; Renewable energy/solar inverter system.**

### Course structure for Electrical Installation Works

- Working Drawing: 1. Interpret the distribution system/ scale used in working diagram and identify all the electrical accessories required for a job from the drawing.
- Draw electrical installation diagram of a living house and locate the position of the various accessories on a drawing.
- Generation, transmission and distribution system.
- Safety precautions in electrical workshop.
- First Aid treatment.
- Tools and materials used for electrical installation
- Surface wiring: 1. Identify types and sizes of cables and conductors used for lighting, heating, etc, and use various types of wiring clips, gim pins etc.
- State and explain relevant statutory regulations regarding surface wiring and apply the prevailing regulations of electrical Board of Nigeria, NEPA when carrying out surface wiring.
- Installation of discharge lamps.
- Installation of socket outlets in ring or radial circuits.
- Installation of bells buzzers and relays luminous call system, burglar and fire alarm system.
- Introduction to Conduit wiring
- Installation of Protective Devices: 1. Identify and select common types of protective devices e.g. circuit breakers and explain its working principles. State their application and uses in electrical installation or devices.
- State the relevant regulations regarding various types of protective devices and install them observing statutory regulations
- Inspection and Testing of Domestic Installation Carry out polarity earthing and insulation resistance test using the appropriate instruments and methods stipulated in the prevailing statutory regulations
- Practicum (Field work)

### EMB - ELECTRICAL INSTALLATION TIME-TABLE

| DAYS | COURSES                        |                                    |                          |                                      |
|------|--------------------------------|------------------------------------|--------------------------|--------------------------------------|
| MON  | GNS 001<br>(9.00a.m. – 11a.m.) | EMB 101<br>101(11.00a.m. – 12noon) | BREAK<br>(12noon -1p.m.) | EMB 101 (Practicals) – 1p.m. - 4p.m. |
| TUE  | EMB 102                        | EED 001                            |                          | EMB 102 (Practicals)                 |
| WED  | EMB 103                        | EMB 105                            |                          | EMB 103 (Practicals)                 |
| THUR | EMB 104                        | EMB 106                            |                          | EMB 104 (Practicals)                 |
| FRI  | EMB 105                        | EMB 103                            |                          | EMB 105 (Practicals)                 |

**REGISTRATION FORM AND SIGNING OF  
MATRICULAR/MATRICULATION OAT BY STUDENTS**  
**TRADE: .....**

(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET

| S/N | NAMES | MATRICULATION<br>NUMBER | SIGNATURE AND DATE |
|-----|-------|-------------------------|--------------------|
| 1   |       |                         |                    |
| 2   |       |                         |                    |
| 3   |       |                         |                    |
| 4   |       |                         |                    |
| 5   |       |                         |                    |
| 6   |       |                         |                    |
| 7   |       |                         |                    |
| 8   |       |                         |                    |
| 9   |       |                         |                    |
| 10  |       |                         |                    |
| 11  |       |                         |                    |
| 12  |       |                         |                    |
| 13  |       |                         |                    |
| 14  |       |                         |                    |
| 15  |       |                         |                    |
| 16  |       |                         |                    |
| 17  |       |                         |                    |
| 18  |       |                         |                    |
| 19  |       |                         |                    |
| 20  |       |                         |                    |
| 21  |       |                         |                    |
| 22  |       |                         |                    |
| 23  |       |                         |                    |
| 24  |       |                         |                    |
| 25  |       |                         |                    |

## **Course structure for Renewable Energy/Solar Inverter System (RSS)**

- Introduction to Renewable and Solar Energy
- Renewable Energy and its prospects various RE sources
- Introduction to Solar Energy and Solar Radiation, its importance, Differentiate Solar PV and Solar thermal Energy.
- Solar Resource Measurement, Instrumentation and its applications. Introduction of Photovoltaic Technology and its applications
- Basics of Light to Energy Conversion Brief History of Solar / PV cells Physics of Energy Conversion in Solar Cell (Current and Voltage)
- Understanding basic terminologies of a PV cell (1-V Curve, Efficiency, FF) Solar Cells to Module, Module name plate specifications, Module to Array and Basic Structure of PV module
  - Classification of PV Modules based upon technology
  - Brief on PV Cell/Module manufacturing process STC and NOCT test conditions and Characterization of PV Modules Factors affecting output of a PV module (Temperature, Irradiance, Tilt angle, cell area shadowing, dust mismatch, PV module configurations, MPPT operation etc.) PV module defects and degradation in the field (Techniques for identification of effects) PV module testing and Certifications Standards Applications of PV, different configurations of PV power system: Stand alone, Grid, Hybrid system etc. Components of a PV System; Battery, inverter and Charge controllers
  - Basics of standalone PV system, Balance of System (BOS)
  - Introduction: Batteries, type of batteries, operation and structure • Basic Terminologies of a Battery, Charging & Discharging Characteristics
  - Factors affecting Battery operation and Selection Criteria
  - Testing standards for batteries
  - Introduction: Inverter, type of inverters, operation, make and specifications • Basic Terminologies of a Inverter and Characteristics
  - Factors affecting inverter operation and Selection Criteria
  - Testing standards for inverters
  - Basics of Charger Controllers, operation and specifications. DC-DC converters
  - Types of charge controllers and selection criteria
  - Components of a grid connected SPV system (ACB, DB and cabling)
  - Types of wires and selection criteria, wire sizing.
  - Other components like: Junction Box, Lightning arresters, grounding etc. Fundamentals of PV system sizing
  - What is sizing, significance and steps involved in sizing?
  - Load Estimation, analysis and basics on energy efficiency
  - Site survey and assessment, Shading analysis, Customer profiling and Role play.
  - Inverter, Batter sizing and its aspects.
  - Module sizing and aspects. Lay out diagrams, Spacing of PV strings and placing of each component. Selection of modules, batteries and inverters from the market specifications.
  - Various steps involved in sizing of grid connected PV systems.
  - Introduction to single line diagram and its significance.
  - Listing of various components required for a grid connected and stand alone Solar power plant. (A check list of Each and every component)

- Understanding of various costs (Project heads) involved in the solar projects. Trouble shooting of PV Modules
- Introduction to instruments used for monitoring performance of PV module.
- Quality assessment of the PV modules delivered at the site.
- Methods/Techniques in identifying various defects in a PV module.
- Measurement of various parameters in a PV module / V string.
- Interpretation of performance data, and troubleshooting of possible defects in PV module
- Troubleshooting of Batteries, Inverters and Charge controllers
- Quality assessment of the batteries inverters and charge controllers delivered at the site.
- Introduction to tools required for batter and inverter maintenance.
- Trouble shooting of Batteries, all types of batteries, Complaints and servicing.
- Trouble shooting of inverters, Complaints and servicing.
- Trouble shooting of Charges 'controllers: Complaints and servicing
- Trouble shooting of other balance of systems: wires, connections, casings, Fuses and relays. Paper - II Importance of Tools and its applications
- Introduction to various tools used in the power plant installation. Its usage.
- Safe handling of tools Check list preparations and Pre-requirements of installation.
- Solar PV plant installations check list
- Qualitative and Quantitative assessment of various components in the system
- Safe handling of each component, in the site, during transportation and stocking.
- Essential documentation required for site installations. Structure Erection and Civil Works
- Brief on civil foundation and erection of supporting structures.
- Fixing the foundation of the structure and, the grounding considerations
- Installation of mechanicals structure
- Foundation: Reinforcement and shutting other balance of systems
- Mechanical safety aspects
- Installation of Solar Power plant Preparation and general considerations for installation.
- Installation of Array support structure and mounting of PV module.
- Interconnection of modules, strings and Combiner boxes.
- Installation of other System components, i.e. Inverter, battery etc.
- Installation of 'AC and DC power distribution boxes.
- General safety consideration in the installation phase of solar power plant Cable Tray and Cable Laying: SCADA and Control System
- Details of various cable tray and materials used for the same. Precaution on the cable laying procedures.
- Guidelines for DC and AC cable layout and connections.
- Introduction to SCADA Control System, and their relevance.
- The basic understanding of fault identification scenario on SCADA system. Commissioning and Testing
- The procedures involved in the commissioning of the power plants.
- Preparation and verification of various check list for commissioning and testing.
- Electrical Testing of PV arrays, inverters and other system components
- Complete System Testing, functional testing and trouble shooting
- Practicum (Field work)



**EMB – RENEWABLE ENERGY/SOLAR/ INVERTER SYSTEM (RSS)**  
**TIME-TABLE**

| <b>DAYS</b> | <b>COURSES</b>                        |                                        |                                 |                                             |
|-------------|---------------------------------------|----------------------------------------|---------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001</b><br>(9.00a.m. – 11a.m.) | <b>EMB 101</b><br>(11.00a.m. – 12noon) | <b>BREAK</b><br>(12noon -1p.m.) | <b>EMB 101 (Practicals) – 1p.m. - 4p.m.</b> |
| <b>TUE</b>  | <b>EMB 102</b>                        | <b>EED 001</b>                         |                                 | <b>EMB 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>EMB 103</b>                        | <b>EMB 105</b>                         |                                 | <b>EMB 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>EMB 104</b>                        | <b>EMB 106</b>                         |                                 | <b>EMB 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>EMB 105</b>                        | <b>EMB 103</b>                         |                                 | <b>EMB 105 (Practicals)</b>                 |

**REGISTRATION FORM AND SIGNING OF**  
**MATRICULAR/MATRICULATION OAT BY STUDENTS**  
**TRADE: .....**  
**(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION<br/>NUMBER</b> | <b>SIGNATURE AND DATE</b> |
|------------|--------------|---------------------------------|---------------------------|
| 1          |              |                                 |                           |
| 2          |              |                                 |                           |
| 3          |              |                                 |                           |
| 4          |              |                                 |                           |
| 5          |              |                                 |                           |
| 6          |              |                                 |                           |
| 7          |              |                                 |                           |
| 8          |              |                                 |                           |
| 9          |              |                                 |                           |
| 10         |              |                                 |                           |
| 11         |              |                                 |                           |
| 12         |              |                                 |                           |
| 13         |              |                                 |                           |
| 14         |              |                                 |                           |
| 15         |              |                                 |                           |
| 16         |              |                                 |                           |
| 17         |              |                                 |                           |
| 18         |              |                                 |                           |
| 19         |              |                                 |                           |
| 20         |              |                                 |                           |
| 21         |              |                                 |                           |
| 22         |              |                                 |                           |
| 23         |              |                                 |                           |
| 24         |              |                                 |                           |

|    |  |  |  |
|----|--|--|--|
| 25 |  |  |  |
|----|--|--|--|

**LIST OF WORKSHOPS, LABORATORIES, STUDIOS, SALOONS, MACHINES,  
EQUIPMENT AND CONSUMABLE MATERIALS**  
**WORKSHOPS and LABORATORIES:**

1. Electrical installation,
2. Metal fabrication and welding,
3. Solar/inverter laboratory
4. Structural laboratory

Demonstration board, cables of various sizes, connectors, tool boxes, flux, soldering iron, soldering rod, aluminum frames of various sizes and thicknesses, glass of various sizes and thicknesses, diagnostic tools, leak detectors, vacuum pumps oxy-acetylene cylinders, arc welding machines, etc

Tube Cutter, Hacksaw, Hole saw kit, Pipe and tube benders, Mole grips, Plumber's torch, Thread sealing tape, Pliers, Press fitting systems, Flashlight, Bucket, Ratcheting pipe threader set, Pipe wrench, Adjustable wrench, Basin wrench, Faucet key, Torque wrench, Internal pipe wrench, Plumber Drain Cleaning Tools, Plungers, Hand auger, Snake machine, Drain inspection camera, Hydro jetting machines, Gloves, Goggles, Heat shields or pads,

**REGISTRATION FORM AND SIGNING OF MATRICULAR/MATRICULATION OAT  
BY STUDENTS**

**TRADE: .....**  
**(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| S/N | NAMES | MATRICULATION<br>NUMBER | SIGNATURE AND DATE |
|-----|-------|-------------------------|--------------------|
| 1   |       |                         |                    |
| 2   |       |                         |                    |
| 3   |       |                         |                    |
| 4   |       |                         |                    |
| 5   |       |                         |                    |
| 6   |       |                         |                    |
| 7   |       |                         |                    |
| 8   |       |                         |                    |
| 9   |       |                         |                    |
| 10  |       |                         |                    |
| 11  |       |                         |                    |
| 12  |       |                         |                    |
| 13  |       |                         |                    |
| 14  |       |                         |                    |
| 15  |       |                         |                    |
| 16  |       |                         |                    |
| 17  |       |                         |                    |
| 18  |       |                         |                    |
| 19  |       |                         |                    |

|    |  |  |  |
|----|--|--|--|
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |

## **Garment Making (GAR)**

This is a section whereby applicants will learn practically **Computer Graphics, Monogramming, Large Format Printing, Cloth Branding and Signage**. Trainees will be encouraged to specialize in two out of the available options.

### **Course structure for Men and Women's Traditional Wears**

#### **LIST OF WORKSHOPS, LABORATORIES, STUDIOS, SALOONS, MACHINES, EQUIPMENT AND CONSUMABLE MATERIALS**

##### **WORKSHOPS:**

SEWING WORKSHOP

MONOGRAM AND LARGE FORMAT PRINTING WORKSHOP

CLOTH BRANDING AND SIGNAGE WORKSHOP

Ordinary Sewing machines, Double sewing machines, Ordinary weaving machines, Industrial weaving machines, Industrial Sewing machines, Ironing Aids – Electric Irons (Tailor), other irons, gas/charcoal irons, presser machines, machine needles, hand needles, threads of various colours- weaving thread, normal thread, tailor's chalk, pattern paper, Rulers: curve and straight, cutting tables, ironing table, fans, mirrors, stools, style magazines, mannequin, generator, etc.

Monogram machines, Borderless Machines, Large Format Machines, Die Cut machines. Lamination Machines, Direct Imaging machines, Ovens, Heat Pressers –Shirt, Cup and Pen. Reflective SAV and, Reflective Flex,

#### **REGISTRATION FORM AND SIGNING OF MATRICULAR/MATRICULATION OAT BY STUDENTS**

**TRADE: .....**  
**(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION<br/>NUMBER</b> | <b>SIGNATURE AND DATE</b> |
|------------|--------------|---------------------------------|---------------------------|
| 1          |              |                                 |                           |
| 2          |              |                                 |                           |
| 3          |              |                                 |                           |
| 4          |              |                                 |                           |
| 5          |              |                                 |                           |
| 6          |              |                                 |                           |
| 7          |              |                                 |                           |
| 8          |              |                                 |                           |
| 9          |              |                                 |                           |
| 10         |              |                                 |                           |
| 11         |              |                                 |                           |
| 12         |              |                                 |                           |
| 13         |              |                                 |                           |
| 14         |              |                                 |                           |

|    |  |  |  |
|----|--|--|--|
| 15 |  |  |  |
| 16 |  |  |  |
| 17 |  |  |  |
| 18 |  |  |  |
| 19 |  |  |  |
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |

# **Animal Husbandry**

It shall be six months duration certificate programme. In order to be eligible for the award of the certificate, a trainee has to complete the following Five Courses (integrated with practicals). Poultry Farming (POF), Cattle Rearing (CAR), Sheep and Goat Rearing (SGR), Fish Farming (FIF) and Piggery (PIG).

## **Types and classification of farm animals**

- List the different types of farm animals
  - a) Types of farm animals: cattle, sheep, goat, poultry, pig, rabbit, fish, etc
  - b) Classification of farm animals according to:
    - i. Habitat, terrestrial and aquatic
    - ii. Uses, food, protection, pet etc
- Demonstrate the uses of equipment in different animal houses, e.g. incubator, water trough etc. in poultry; spraying machine, tablet shooter etc. in cattle

## **Course Structure for Poultry Farming**

### **Overview of Poultry Farming**

- ✓ Farming Systems
- ✓ Poultry Development Programmes in Nigeria

### **Biology of Poultry**

- ✓ Breeds, Varieties and Strains
- ✓ Body Systems and Functions
- ✓ Breeding Systems

### **Management of Chicken**

Incubation and Hatching  
Management of Broiler Chicken  
Management of Laying Type Birds  
Routine Management  
Diseases and their Control

### **Management of Backyard and Other Poultry Species**

Backyard Poultry Farming  
Emu, Guinea Fowl and Turkey Farming  
Quail Farming

### **Economics and Marketing**

Project Formulation  
Farm Record Keeping  
Farm Economics  
Processing and Marketing

## **PRACTICAL EXERCISE I**

Identification of External Body Parts of a Bird  
Identification of Chicken Breeds  
Handling of Birds  
Brooding of Chicks  
Rearing, Feeding and Watering of Chicks, Growers and Layers  
Debeaking, Delicing, Deworming and Spraying  
Candling and Grading of Eggs

## Judging and Culling of Layers

### **PRACTICAL EXERCISE II**

Identification of Feed Ingredients for Poultry Feeding  
Physical Examination and Judging of Feed Quality  
Sampling of Feed for Quality Control  
Identification and Mixing of Mineral in Poultry Feed  
Mixing of Vitamin Supplement in Poultry Feed  
Mixing of Feed Additives in Poultry Feed  
Visit to Feed  
Fumigation and Pest Control in Feed Mills  
Maintaining Records for Ingredients/Compounded Feeds  
Demonstration of Feeding in Poultry

### **PRACTICAL EXERCISE III**

General View of Poultry Farm  
Visit to Broiler Farm  
Visit to Layer Farm  
Visit to Brooder House  
Visit to Grower House  
Visit to Hatchery  
Visit to Feed Mixing Unit  
Bio-security Measures  
Visit to Other Farms  
Discussion and Reporting

### **POULTRY FARMING (POF) TIME-TABLE**

| <b>DAYS</b> | <b>COURSES</b>                         |                                         |                                  |                                             |
|-------------|----------------------------------------|-----------------------------------------|----------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001<br/>(9.00a.m. – 11a.m.)</b> | <b>POF 101<br/>(11.00a.m. – 12noon)</b> | <b>BREAK<br/>(12noon -1p.m.)</b> | <b>POF 101 (Practicals) – 1p.m. - 4p.m.</b> |
| <b>TUE</b>  | <b>POF 102</b>                         | <b>EED 001</b>                          |                                  | <b>POF 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>POF 103</b>                         | <b>POF 105</b>                          |                                  | <b>POF 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>POF 104</b>                         | <b>POF 106</b>                          |                                  | <b>POF 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>POF 105</b>                         | <b>POF 103</b>                          |                                  | <b>POF 105 (Practicals)</b>                 |

### **REGISTRATION FORM AND SIGNING OF MATRICULAR/MATRICULATION OAT BY STUDENTS**

**TRADE: .....**  
**(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION<br/>NUMBER</b> | <b>SIGNATURE AND DATE</b> |
|------------|--------------|---------------------------------|---------------------------|
| 1          |              |                                 |                           |
| 2          |              |                                 |                           |
| 3          |              |                                 |                           |



|    |  |  |  |
|----|--|--|--|
| 4  |  |  |  |
| 5  |  |  |  |
| 6  |  |  |  |
| 7  |  |  |  |
| 8  |  |  |  |
| 9  |  |  |  |
| 10 |  |  |  |
| 11 |  |  |  |
| 12 |  |  |  |
| 13 |  |  |  |
| 14 |  |  |  |
| 15 |  |  |  |
| 16 |  |  |  |
| 17 |  |  |  |
| 18 |  |  |  |
| 19 |  |  |  |
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |

## **Course Structure for Cattle Rearing**

There are five core modules in Cattle Rearing: Beef Cattle, Farm Management, Dairy Cattle, Calf Rearing and Pasture Management. You then study one elective module from Animal Feed and Nutrition, Animal Health Care, Agricultural Marketing and Animal Breeding.

### **Beef Cattle**

1. Introduction to Beef Production and Breeds
2. Beef Cattle Production Systems
3. Beef Cattle Breeding
4. Viral and Bacterial Diseases
6. Parasitic and Other Diseases
6. Beef Cattle Nutrition and Feeding
7. Commercial Herd Management
8. Feed Lot Management
9. Stud Herd Management
10. Management, Marketing and Economics

### **Dairy Cattle**

1. Dairy Breeds
2. Dairy Products
3. The Lactation Cycle
4. Pests & Diseases of Dairy Cattle
5. Feeding Dairy Cattle
6. Managing Dairy Cattle
7. Breeding Dairy Cattle
8. Managing Dairy Facilities
9. Dairy Business Planning

### **Calf Rearing**

1. Calving and Culling
2. Calf Management
3. Calf Health Care
4. Calf Rearing
5. Housing the Calves
6. Weaning Calves
7. Post Weaning

### **Farm Management**

1. Strategic Farm Planning
2. Farm Business Plans
3. Business Assessment
4. Viability Analysis
5. Management Strategies
6. Human Resources
7. Physical Resources
- 8 Natural Resources

### **Pasture Management**

1. Introduction to Pastures
2. The Grass Plant
3. Pasture Varieties

4. Site Considerations
5. Establishing New Pastures
6. Managing Existing Pastures
7. Managing Stock on Pasture
8. Pasture Management Work Tasks

#### **ELECTIVES**

In addition to the above (compulsory) modules; trainees must also complete choice of one other module from the following options:

#### **Animal Breeding**

1. Introduction To Genetics
2. Genetics
3. Selection
4. Pure Breeding
5. Introduction To Cross Breeding
6. Cross Breeding
7. Livestock Improvement

#### **Agricultural Marketing**

1. Agricultural Marketing Concepts
  - The Role of Marketing
  - Approaches to Marketing
  - The Production Approach: 1820sto 1910s
  - The Sales Approach: 1920s to 1960s
  - The Marketing Approach: Stage One - 1960s to 1980s
  - The Marketing Approach: Stage Two - 1980s to Present
  - The Goals of Marketing
  - Managing the Marketing Process
  - Marketing - An Evolutionary Process
2. Farm Marketing Objectives and Strategies
  - Supply And Demand
  - The Marketing Mix
  - Developing a Farm Marketing Plan
  - Organising the Planning Process
3. Target Marketing
  - Preliminary Research
  - Analysing Market Opportunities
  - External Influences
  - Overseas Influences
  - Internal Influences
  - Analysis of Business Resources
  - Analysis of Market Share
  - Analysis of Product Characteristics
  - Analysis of Advertising
  - Analysis of Price
  - Financial Capacity
  - Analysis of Innovative Potential
  - Selecting Target Markets - Market Segmentation

- Physical Basis for Segmenting the Market
- Behavioural Basis for Segmenting the Market
- 4. Handling Produce
  - Developing the Marketing Mix
  - The 'Product' Element
  - The 'Price' Element
  - The 'Promotion' Element
  - The 'Place' Element
  - Product Life Cycle
- 5. Customer Relations
  - Customer Service
  - Customer Care Policy
  - Customer Care - Levels of Involvement
  - Effective Communication
  - Dealing with Complaints
  - Maximising Customer Service
- 6. Market Research
  - The Importance of Market Research
  - The Research Process
  - Analysing Costs and Benefits
- 7. Promotions
  - Promoting Products
  - Channels of Communication
  - Publicity Marketing
  - Advertising
  - Structuring an Advertisement or Promotion
  - Copywriting in Advertising
- 8. Managing Marketing
  - Managing the Marketing Plan
  - Sales and the Market

## **Animal Feed and Nutrition**

1. INTRODUCTION TO ANIMAL FOODS
  - Terms and Definitions
  - Groups of Foods
  - Other Terms That Are Used
  - Food Processing Terms
  - Water
2. FOOD COMPONENTS - CARBOHYDRATES AND FATS
  - Carbohydrates
  - Carbohydrates as a Source Of Energy
  - Fats and Oils
  - Adipose Tissue Deposits in Animals
  - Fat Deposits in Different Animals
3. FOOD COMPONENTS - PROTEINS, MINERALS, AND TRACE ELEMENTS
  - Composition of Proteins
  - The Build Up Of Proteins

- Biological Value of Protein
- Protein Content of Foods
- The Function of Protein
- Feeding Urea to Ruminants
- Major Minerals
- Trace Elements
- Vitamins
- 4. EVALUATING FOODS AND DIGESTIBILITY
  - Analysis of Feed Stuffs
  - Calculating Digestibility
  - Protein Value
  - Energy Value
  - Nutrient Value of Some Common Foods
- 5. CLASSIFYING FOODS PART A
  - Cereals and Cereal By-Products
  - Brewing By-Products
  - Grasses, Legumes and Succulents
  - Lucerne
  - Sainfoin
  - Other Succulent Foods
  - Roughage, Hay, Silage and Dried Grass
- 6. CLASSIFYING FOODS PART B
  - Oil and Legume Seeds
  - Oil Seeds and Their Products
  - Legume Seeds
- 7. CLASSIFYING FOODS PART C
  - Fodder Trees and Animal Products
  - Fodder Trees and Shrubs
  - Animal Products
- 8. CALCULATING RATIONS PART A
  - The Object of Rationing
  - Nutritional Requirements of the Animal
  - Calculating a Maintenance Ration
  - Cattle at Pasture
  - Working Out Rations for a Herd
- 9. CALCULATING RATIONS PART B
  - Nutrient Requirements for a Dairy Cow
  - Working Out the Total Requirements
  - Feeding a Ration to Meet Nutrient Needs
  - The Dairy Ration
- 10. CALCULATING RATIONS PART C
  - Ready Mix Feeds
  - Using Protein Contents
  - A Summary of Rationing
  - Further Considerations in Rationing

## **Animal Health Care**

## 1. Introduction to Animal Health Care

- animal welfare and control
- veterinary services
- code of practice
- transporting animals

## 2. Common Health Problems

- causes of ill health
- injury
- conditions
- nutritional problems
- living organisms
- parasites
- family pets common conditions
- dogs
- cats
- caged birds
- aquarium fish
- mice
- wild animals common conditions
- reptiles

## 3. Animal Behaviour

- communication in dogs
- scent
- barking
- body language
- handling cats
- bird language
- types of behaviour
- time orientation
- space orientation
- territorial behaviour
- aggression
- horse psychology

## 4. Signs of ill Health

- vital signs
- the healthy animal
- signs & symptoms of diseases
- recognising ill health
- diagnosis of diseases
- taking smears
- taking tissue samples
- diagnosis and control of different types of diseases including
- viruses
- bacteria
- protozoa
- parasites

- mites
- fleas
- 5. Veterinary Facilities
  - first aid kit
  - record management
  - enclosure for animals
  - environmental requirements
- 6. Safety Procedures
  - duty of care
  - lifting heavy weights
  - reducing back injury
  - protective equipment
  - dealing with chemicals
  - skin penetrating injuries
  - risk categories
  - separating animals
  - disposal of dead/infected tissues
  - dangerous non-animal wastes
  - storage and handling of medicines
  - handling larger animals
- 7. Administration of Animal Health
  - animal insurance
  - quarantine
  - importing animals
  - managing a veterinary office
  - telephone usage
  - record keeping
  - filing information
- 8. Animal First Aid
  - types of wounds
  - cuts
  - punctures
  - tears
  - treating and cleaning wounds
  - granulating wounds
  - stitching a wound
  - bone and joint problems
  - broken bones
  - tendon injury
  - poisoning
  - restraining animals during first aid
  - restraining cats
  - restraining dogs
  - restraining horses
  - restraining cattle
  - restraining sheep

9. Preventative Health Care

- diet
- insect control
- dip
- vaccinate
- avoid stressing livestock
- vaccination

10. Routine Health Treatments

- de-sexing
- castration
- vasectomy
- spaying
- tubal ligation
- castration of cats
- dogs
- pregnancy
- gestation periods
- euthanasia
- anaesthesia and analgesia
- preparing an animal for surgery
- sterilising equipment
- castrating a colt

11. Health Problems in Domestic Pets

- burns
- urinary tract infections
- shock
- electrolytes
- ticks
- reptiles
- fish problems

12. Rehabilitation Care

- animal nursing
- planning a recovery

**CATTLE REARING (CAR) TIME-TABLE**

| <b>DAYS</b> | <b>COURSES</b>                         |                                         |                                  |                                             |
|-------------|----------------------------------------|-----------------------------------------|----------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001<br/>(9.00a.m. – 11a.m.)</b> | <b>CAR 101<br/>(11.00a.m. – 12noon)</b> | <b>BREAK<br/>(12noon -1p.m.)</b> | <b>CAR 101 (Practicals) – 1p.m. - 4p.m.</b> |
| <b>TUE</b>  | <b>CAR 102</b>                         | <b>EED 001</b>                          |                                  | <b>CAR 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>CAR 103</b>                         | <b>CAR 105</b>                          |                                  | <b>CAR 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>CAR 104</b>                         | <b>CAR 106</b>                          |                                  | <b>CAR 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>CAR 105</b>                         | <b>CAR 103</b>                          |                                  | <b>CAR 105 (Practicals)</b>                 |

**REGISTRATION FORM AND SIGNING OF MATRICULAR/MATRICULATION  
OAT BY STUDENTS**

**TRADE: .....**



(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET

| S/N | NAMES | MATRICULATION<br>NUMBER | SIGNATURE AND DATE |
|-----|-------|-------------------------|--------------------|
| 1   |       |                         |                    |
| 2   |       |                         |                    |
| 3   |       |                         |                    |
| 4   |       |                         |                    |
| 5   |       |                         |                    |
| 6   |       |                         |                    |
| 7   |       |                         |                    |
| 8   |       |                         |                    |
| 9   |       |                         |                    |
| 10  |       |                         |                    |
| 11  |       |                         |                    |
| 12  |       |                         |                    |
| 13  |       |                         |                    |
| 14  |       |                         |                    |
| 15  |       |                         |                    |
| 16  |       |                         |                    |
| 17  |       |                         |                    |
| 18  |       |                         |                    |
| 19  |       |                         |                    |
| 20  |       |                         |                    |
| 21  |       |                         |                    |
| 22  |       |                         |                    |
| 23  |       |                         |                    |
| 24  |       |                         |                    |
| 25  |       |                         |                    |

## Course Structure for Sheep and Goat Rearing

### Biology of Sheep and Goat

- ✓ Breeds, Varieties and Strains
  1. West African Dwarf goat
  2. Sokoto Maradi Red goat
  3. Kano Brown
  4. West African long-legged goat
  5. Kalahari Red (recently imported from South Africa by FUNAAB)
  6. Bornu Red (Sahelian Goats)
- ✓ Body Systems and Functions
- ✓ Breeding Systems
- ✓ A visit to sheep and goat farm
  - Selection of Brood Stock
  - General Goat and sheep Rearing and Management
  - Treatment and Vaccination of the Sokoto Maradi breed
  - General Disease Management of Goat and sheep
  - Feeding
  - Cost of Different breeds of Goats and sheep
  - General Cost of Setting up a Goat and sheep Farm
  - Design of Goat and sheep Structure
  - Selection of Goat and sheep Breed stock
  - Treatment of PPR virus infection in Goat and sheep
  - Deworming of goat and sheep
  - Zero Grazing Goat and sheep farming in Nigeria

### SHEEP AND GOAT REARING (SGR) TIME-TABLE

| DAYS | COURSES                        |                                 |                           |                                      |
|------|--------------------------------|---------------------------------|---------------------------|--------------------------------------|
| MON  | GNS 001<br>(9.00a.m. – 11a.m.) | SGR 101<br>(11.00a.m. – 12noon) | BREAK<br>(12noon – 1p.m.) | SGR 101 (Practicals) – 1p.m. - 4p.m. |
| TUE  | SGR 102                        | EED 001                         |                           | SGR 102 (Practicals)                 |
| WED  | SGR 103                        | SGR 105                         |                           | SGR 103 (Practicals)                 |
| THUR | SGR 104                        | SGR 106                         |                           | SGR 104 (Practicals)                 |
| FRI  | SGR 105                        | SGR 103                         |                           | SGR 105 (Practicals)                 |

### REGISTRATION FORM AND SIGNING OF MATRICULAR/MATRICULATION OAT BY STUDENTS

TRADE: .....  
(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET

| S/N | NAMES | MATRICULATION<br>NUMBER | SIGNATURE AND DATE |
|-----|-------|-------------------------|--------------------|
| 1   |       |                         |                    |
| 2   |       |                         |                    |
| 3   |       |                         |                    |
| 4   |       |                         |                    |

|    |  |  |  |
|----|--|--|--|
| 5  |  |  |  |
| 6  |  |  |  |
| 7  |  |  |  |
| 8  |  |  |  |
| 9  |  |  |  |
| 10 |  |  |  |
| 11 |  |  |  |
| 12 |  |  |  |
| 13 |  |  |  |
| 14 |  |  |  |
| 15 |  |  |  |
| 16 |  |  |  |
| 17 |  |  |  |
| 18 |  |  |  |
| 19 |  |  |  |
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |

## **Course Structure for Fish Farming**

This is the perfect course for those who want a good foundation knowledge in Aquaculture. It is equally ideal for those wanting to set up an aquaculture business, providing trainees with the ability to independently analyse and make decisions about the management of an aquaculture business.

The course involves:

- Production Systems
- Species for Farming
- Setting up a Fish Farm
- Feeding
- Harvesting

## **COURSE STRUCTURE AND CONTENTS**

1. Introduction to Aquaculture
2. Production Systems - EP and IP
3. What Species to Farm
4. Trout
5. Barramundi
6. Bass
7. Setting Up A Fish Farm
8. Fish Foods & Feeding
9. Harvesting

Each lesson culminates in an assignment which is submitted to the Centre, marked by the Centre's Enterprise Instructor and returned to trainees with any useful suggestions, comments, and if necessary, extra reading.

## **COURSE CONTENT**

- The components of an aquaculture production system.
- Compare extensive production systems with intensive production systems.
- Assess the production systems used in three different aquaculture enterprises.
- Describe a successful aquaculture production system seen by the trainees.
- List freshwater fish suitable for aquaculture in the trainee's locality.
- List saltwater fish suitable for aquaculture in the learner's locality.
- Describe the requirements for different commonly grown freshwater fish, including: \*Trout \*Barramundi \*Bass.
- Describe the requirements of one type of salt water fish which has commercial potential for farming at a latitude the same as the learner's locality.
- Distinguish, by labelling unlabelled diagrams, between visual characteristics of different freshwater crayfish, including: \*Marron \*Red claw \*Yabbie
- Describe the cultural practices for different freshwater crayfish, including: \*Marron \*Red claw \*Yabbie.
- Explain how water quality may affect production in an aquaculture system.
- Explain different methods of treating water in aquaculture, including: \*Filtration \*Aeration.
- Develop a list of criteria for selecting a site suitable for a specified freshwater aquaculture purpose.
- Explain how varying stocking rates can affect the condition of a specified type of animal in aquaculture.

- Compare the potential effects on aquaculture species, of different methods of containing water, including: \*Ponds constructed with liners \*An earth dam \*Concrete tanks. \*Flowing water \*Still water
- Compare various methods of feeding commercial species, including fish and crayfish, with reference to the type of food and the way it is delivered to the animals.
- Explain the importance of correct feed to the success of a specified aquaculture enterprise.
- Compare three different aquaculture feeds which are available commercially, with reference to: \*composition \*appearance \*appropriate applications.
- Compare different harvesting techniques with reference to: \*equipment required \*time required \*damage to animal.
- Describe how to construct different types of water storage facilities, including: \*Ponds constructed with liners \*An earth dam \*Concrete tanks.
- Prepare a detailed management system for one species suitable for aquaculture, including details of: \*Breeding \*Rearing \*Feeding \*Harvesting \*Marketing.
- Compare the advantages and disadvantages of aquaculture with those of two other types of agricultural enterprises.
- Compile a list of forty different resources in the industry including: \*Information sources \*Equipment suppliers \*Materials suppliers.
- Analyse aquaculture marketing systems, on both a national and international level.
- Evaluate the marketability of two different specified types of aquaculture produce.
- Evaluate the viability of a proposed, specified aquaculture venture.

#### **FISH FARMING (FIF) TIME-TABLE**

| <b>DAYS</b> | <b>COURSES</b>                         |                                         |                                   |                                             |
|-------------|----------------------------------------|-----------------------------------------|-----------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001<br/>(9.00a.m. – 11a.m.)</b> | <b>FIF 101<br/>(11.00a.m. – 12noon)</b> | <b>BREAK<br/>(12noon – 1p.m.)</b> | <b>FIF 101 (Practicals) – 1p.m. – 4p.m.</b> |
| <b>TUE</b>  | <b>FIF 102</b>                         | <b>EED 001</b>                          |                                   | <b>FIF 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>FIF 103</b>                         | <b>FIF 105</b>                          |                                   | <b>FIF 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>FIF 104</b>                         | <b>FIF 106</b>                          |                                   | <b>FIF 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>FIF 105</b>                         | <b>FIF 103</b>                          |                                   | <b>FIF 105 (Practicals)</b>                 |

#### **REGISTRATION FORM AND SIGNING OF MATRICULAR/MATRICULATION OAT BY STUDENTS**

**TRADE: .....**  
**(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION<br/>NUMBER</b> | <b>SIGNATURE AND DATE</b> |
|------------|--------------|---------------------------------|---------------------------|
| 1          |              |                                 |                           |
| 2          |              |                                 |                           |
| 3          |              |                                 |                           |
| 4          |              |                                 |                           |
| 5          |              |                                 |                           |
| 6          |              |                                 |                           |
| 7          |              |                                 |                           |

|    |  |  |  |
|----|--|--|--|
| 8  |  |  |  |
| 9  |  |  |  |
| 10 |  |  |  |
| 11 |  |  |  |
| 12 |  |  |  |
| 13 |  |  |  |
| 14 |  |  |  |
| 15 |  |  |  |
| 16 |  |  |  |
| 17 |  |  |  |
| 18 |  |  |  |
| 19 |  |  |  |
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |

## **Course Structure for Piggery Farming**

### **Overview of Piggery Farming**

- ✓ Farming Systems
- ✓ Piggery Development Programmes in Nigeria

### **Biology of Piggery**

- ✓ Breeds, Varieties and Strains
- ✓ Body Systems and Functions
- ✓ Breeding Systems
- ✓ A visit to piggery farm

### **Management of Piggery**

- ✓ Routine Management
- ✓ Diseases and Their Control

### **Management of Backyard and Other Piggery Species**

- ✓ Backyard Piggery Farming

### **Reproduction**

- Heat signs.
- Mating in pigs.
- Management of pregnant sows.
- Management of lactating or nursing sows and her litters.
- Management of weaned pigs, growers and fatteners.

### **Economics and Marketing**

- ✓ Project Formulation
- ✓ Farm Record Keeping
- ✓ Farm Economics
- ✓ Processing and Marketing

### **PRACTICAL EXERCISE I**

- ✓ Identification of External Body Parts of a Pig
- ✓ Identification of Pig Breeds
- ✓ Handling of Pigs

### **PRACTICAL EXERCISE II**

- ✓ Identification of Feed Ingredients for Piggery Feeding
- ✓ Physical Examination and Judging of Feed Quality
- ✓ Sampling of Feed for Quality Control
- ✓ Identification and Mixing of Mineral in Piggery Feed
- ✓ Mixing of Vitamin Supplement in Piggery Feed
- ✓ Mixing of Feed Additives in Piggery Feed
- ✓ Visit to Feed Plant
- ✓ Maintaining Records for Ingredients/ Compounded Feeds
- ✓ Demonstration of Feeding in Piggery

### **PRACTICAL EXERCISE III**

- ✓ General View of Piggery Farm
- ✓ Visit to Feed Mixing Unit
- ✓ Bio-security Measures
- ✓ Visit to Other Farms
- ✓ Discussion and Reporting

**PIGGERY FARMING (PIG) TIME-TABLE**

| <b>DAYS</b> | <b>COURSES</b>                         |                                         |                                   |                                             |
|-------------|----------------------------------------|-----------------------------------------|-----------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001<br/>(9.00a.m. – 11a.m.)</b> | <b>PIG 101<br/>(11.00a.m. – 12noon)</b> | <b>BREAK<br/>(12noon – 1p.m.)</b> | <b>PIG 101 (Practicals) – 1p.m. - 4p.m.</b> |
| <b>TUE</b>  | <b>PIG 102</b>                         | <b>EED 001</b>                          |                                   | <b>PIG 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>PIG 103</b>                         | <b>PIG 105</b>                          |                                   | <b>PIG 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>PIG 104</b>                         | <b>PIG 106</b>                          |                                   | <b>PIG 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>PIG 105</b>                         | <b>PIG 103</b>                          |                                   | <b>PIG 105 (Practicals)</b>                 |

**REGISTRATION FORM AND SIGNING OF  
MATRICULAR/MATRICULATION OAT BY STUDENTS**

**TRADE: .....**  
**(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION<br/>NUMBER</b> | <b>SIGNATURE AND<br/>DATE</b> |
|------------|--------------|---------------------------------|-------------------------------|
| 1          |              |                                 |                               |
| 2          |              |                                 |                               |
| 3          |              |                                 |                               |
| 4          |              |                                 |                               |
| 5          |              |                                 |                               |
| 6          |              |                                 |                               |
| 7          |              |                                 |                               |
| 8          |              |                                 |                               |
| 9          |              |                                 |                               |
| 10         |              |                                 |                               |
| 11         |              |                                 |                               |
| 12         |              |                                 |                               |
| 13         |              |                                 |                               |
| 14         |              |                                 |                               |
| 15         |              |                                 |                               |
| 16         |              |                                 |                               |
| 17         |              |                                 |                               |
| 18         |              |                                 |                               |
| 19         |              |                                 |                               |
| 20         |              |                                 |                               |
| 21         |              |                                 |                               |
| 22         |              |                                 |                               |
| 23         |              |                                 |                               |
| 24         |              |                                 |                               |
| 25         |              |                                 |                               |



## **Course Structure for Computer Networks and Communication Systems (CNC)**

### **Course Description**

This course covers various topics in computer networks communication. It includes protocols that govern way communication takes place on the network, the parameters for routing and network analysis and dissemination strategies in the static and dynamic networks. The OSI model and other related topics are also discussed in this course. The course further discusses on how to plan and implement a network in a small and wide areas. Installation of Server/Client based scenarios are also discussed which involves at the same time sub-netting huge networks into small networks called subnets.

### **Learning Outcomes**

Upon completion of this course the trainees should demonstrate knowledge and ability to the following:

- Understand basics of computer network communications
- Understand and identify network devices and their role/functions within a given network
- Identify the different types of network topologies and protocols.
- Explain the layers of the OSI model and TCP/IP. Explicitly explain the functions for each layer.
- Understand and building the skills of sub-netting
- Be able to administer a network regardless its size
- Familiarity with the basic protocols of computer networks, and the way they can be used to assist in network design and implementation.

## **COMPUTER NETWORKING OVERVIEW**

Networking overview

This topic aims to provide real knowledge and hands on skills knowledge to the students while covering important topics in the area of computer networks.

Network Topologies

Explain the main theories found in computer communication network

Network Technologies

Plan, conduct site survey and implement computer networks from scratch

Administer a network as well as client/server located therein to the best of their ability

Describe and explain variety of protocols that govern the way communication takes place on the network.

## **INTERNETWORKING**

- Ethernet Networking
- Use the OSI and TCP/IP models and their associated protocols to explain how data flows in a network
- Ethernet Collision Detection
- Select the appropriate media, cables, ports, and connectors to connect switches to other network devices and hosts
- Ethernet Cabling Explain network segmentation and basic traffic management concepts

Select the appropriate media, cables, ports, and connectors to connect routers to other network devices and hosts

### **Subnetting**

- Introduction to subnetting
- Define subnetting concepts
- Subnetting using CIDR

- Describe different methods used to subnet using classless interdomain routing
- Subnetting using VLSM
- Describe and highlight the difference between CIDR and VLSM while dealing with different subnets
- Understanding switching different Classes of IP addresses
- Describe and perform different types of subnetting methods from one class to the other

### **SITE SURVEY – PLANNING A NETWORK**

#### **TYPES OF NETWORKS**

- To be able to deal with various types of networks that include: PEER TO PEER NETWORK, AD-HOC NETWORK, WIRELESS
- NETWORK, CLIENT-SERVER NETWORK

#### **TYPES OF SERVERS**

- To be able to install and configure various types of server roles that include: File Server, Print Server, Mail Server, Exchange Server, Database Server, Web Server

#### **INTRODUCTION TO ROUTERS**

- To be able to deal with wide range of Wireless Access Points, Broadband Routers and Cisco Routers
- Introduction to networking using Linux systems
- To be able to install and configure windows and Linux systems to interact while sharing information in a various ways. Master Linux system for networking purposes

1. J.kurose and k. Kurose, " Computer Networking Top Down approach ", 3rd edition

2. Andrew S. Tanenbaum, "Computer Networks" 4th Edition , Prentice-Hall 2003

### **COMPUTER NETWORKS AND COMMUNICATION SYSTEMS (CNC) TIME-TABLE**

| <b>DAYS</b> | <b>COURSES</b>                         |                                         |                                  |                                             |
|-------------|----------------------------------------|-----------------------------------------|----------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001<br/>(9.00a.m. – 11a.m.)</b> | <b>CNC 101<br/>(11.00a.m. – 12noon)</b> | <b>BREAK<br/>(12noon -1p.m.)</b> | <b>CNC 101 (Practicals) – 1p.m. - 4p.m.</b> |
| <b>TUE</b>  | <b>CNC 102</b>                         | <b>EED 001</b>                          |                                  | <b>CNC 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>CNC 103</b>                         | <b>CNC 105</b>                          |                                  | <b>CNC 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>CNC 104</b>                         | <b>CNC 106</b>                          |                                  | <b>CNC 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>CNC 105</b>                         | <b>CNC 103</b>                          |                                  | <b>CNC 105 (Practicals)</b>                 |

### **REGISTRATION FORM AND SIGNING OF MATRICULAR/MATRICULATION OAT BY STUDENTS**

**TRADE: .....**  
**(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION NUMBER</b> | <b>SIGNATURE AND DATE</b> |
|------------|--------------|-----------------------------|---------------------------|
| 1          |              |                             |                           |
| 2          |              |                             |                           |
| 3          |              |                             |                           |
| 4          |              |                             |                           |
| 5          |              |                             |                           |

|    |  |  |  |
|----|--|--|--|
| 6  |  |  |  |
| 7  |  |  |  |
| 8  |  |  |  |
| 9  |  |  |  |
| 10 |  |  |  |
| 11 |  |  |  |
| 12 |  |  |  |
| 13 |  |  |  |
| 14 |  |  |  |
| 15 |  |  |  |
| 16 |  |  |  |
| 17 |  |  |  |
| 18 |  |  |  |
| 19 |  |  |  |
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |

## **Course Structure for Closed Circuit Television Installation and Servicing**

### **Course Description**

A CCTV Technician performs specific duties and responsibilities, under supervision of supervisor or Team Lead for CCTV Installations & Operations, which consist of directing, coordinating, planning, designing, operating, installing, troubleshooting and routine maintenance of video surveillance cameras and systems connected with project specification / codal provision. A CCTV Technician also responsible for installing and maintaining closed circuit television system.

### **Learning Objectives**

Upon completion of the course, trainees should be able to:

- Recognize & comply safe working practices, environment regulation and housekeeping.
- Work in a team, understand and practice soft skills, technical English to communicate with required clarity.
- Understand and explain the concept in quality tools and labour welfare legislation and apply such in day to day work to improve productivity & quality.
- Explain energy conservation, global warming and pollution and contribute in day to day work by optimally using available resources.
- Explain personnel finance, entrepreneurship and manage/organize related task in day to day work for personal & societal growth.
- Understand and apply basic computer working, basic operating system and uses internet services to get accustomed & take benefit of IT development.

### **Learning Outcomes**

Understand the fundamental elements that make up a CCTV System.

- Set up a Camera
- Set up a Monitor
- Set up Network devices
- Set up Encoder and Decoders
- Set up recording devices (NVR & DVR, VMS)
- Set up Server and Storage
- Set up UPS/DCPS
- Set up Pole and foundation
- Connect up and test system elements
- Adjust the Back Focus of a lens to prevent picture going out of focus from day to night.
- Setup For Wireless communication

### **Job Opportunities**

- CCTV Technician
- CCTV Operator

### **Types of CCTV Cameras**

The 9 most popular types of CCTV cameras available are:

- Dome CCTV Cameras
- Bullet CCTV Cameras

- C-Mount CCTV Cameras
- PTZ Pan Tilt & Zoom Cameras
- Day/Night CCTV Cameras
- Infrared/night vision CCTV Cameras
- Network/IP CCTV Cameras
- Wireless CCTV Cameras
- High Definition (HD) CCTV Cameras

**CLOSED CIRCUIT TELEVISION INSTALLATION AND SERVICING (CTV)  
TIME-TABLE**

| <b>DAYS</b> | <b>COURSES</b>                         |                                         |                                   |                                             |
|-------------|----------------------------------------|-----------------------------------------|-----------------------------------|---------------------------------------------|
| <b>MON</b>  | <b>GNS 001<br/>(9.00a.m. – 11a.m.)</b> | <b>CTV 101<br/>(11.00a.m. – 12noon)</b> | <b>BREAK<br/>(12noon – 1p.m.)</b> | <b>CTV 101 (Practicals) – 1p.m. - 4p.m.</b> |
| <b>TUE</b>  | <b>CTV 102</b>                         | <b>EED 001</b>                          |                                   | <b>CTV 102 (Practicals)</b>                 |
| <b>WED</b>  | <b>CNC 103</b>                         | <b>CTV 105</b>                          |                                   | <b>CTV 103 (Practicals)</b>                 |
| <b>THUR</b> | <b>CTV 104</b>                         | <b>CTV 106</b>                          |                                   | <b>CTV 104 (Practicals)</b>                 |
| <b>FRI</b>  | <b>CTV 105</b>                         | <b>CTV 103</b>                          |                                   | <b>CTV 105 (Practicals)</b>                 |

**REGISTRATION FORM AND SIGNING OF  
MATRICULAR/MATRICULATION OAT BY STUDENTS  
TRADE: .....  
(MAY/JUNE) (NOVEMBER/DECEMBER) 2024 DIET**

| <b>S/N</b> | <b>NAMES</b> | <b>MATRICULATION<br/>NUMBER</b> | <b>SIGNATURE AND<br/>DATE</b> |
|------------|--------------|---------------------------------|-------------------------------|
| 1          |              |                                 |                               |
| 2          |              |                                 |                               |
| 3          |              |                                 |                               |
| 4          |              |                                 |                               |
| 5          |              |                                 |                               |
| 6          |              |                                 |                               |
| 7          |              |                                 |                               |
| 8          |              |                                 |                               |
| 9          |              |                                 |                               |
| 10         |              |                                 |                               |
| 11         |              |                                 |                               |
| 12         |              |                                 |                               |
| 13         |              |                                 |                               |
| 14         |              |                                 |                               |
| 15         |              |                                 |                               |
| 16         |              |                                 |                               |
| 17         |              |                                 |                               |
| 18         |              |                                 |                               |
| 19         |              |                                 |                               |

|    |  |  |  |
|----|--|--|--|
| 20 |  |  |  |
| 21 |  |  |  |
| 22 |  |  |  |
| 23 |  |  |  |
| 24 |  |  |  |
| 25 |  |  |  |

## Course Structure for Large Format Printing

- Meaning of large format printing
- Importance of large format printing
- Invention of large format printing
- Advantages of large format printing
- Examples of large format printing
- Choosing the right large format printing product
- Who can take advantage of large format printing?
- Some design tips for large format printing projects
- Some technical terms commonly used in large format printing
- Large format printers
- The best type of large format printer
- Substrates can be used for large format printing
- Use of photos in large format printing
- Some artistic applications large format printing
- Cost of large format printing project
- The future of large format printing
- The characteristics of a great large format printing company

---

What does large format printing include?



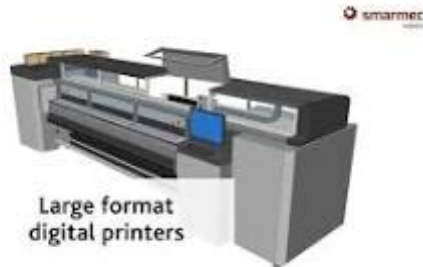
Large format printing refers to any printing project that uses a large sheet of paper. Common examples include posters, banners, and trade show displays. Large format printing projects often require special printers that can accommodate the larger paper size.

Arson, the intentional act of setting alight a property, poses a significant threat to businesses. With nearly 60% of businesses not ever being able ...

### Here's our guide to making file prep simple.

1. Establish viewing distance and resolution. If you were printing a magazine, you'd probably work to a standard resolution of 300dpi (dots per inch). ...
2. Work with CMYK colours. ...
3. Choose your file format. ...

4. Set up your bleed. ...
5. Convert fonts to vectors. ...
6. Proofread and double-check.
7. How does a large format printer work?
- 8.



9. The printheads of a large-format digital printer contain nozzles which, through tiny holes smaller than the diameter of a hair, guide the ink droplets to the printing surface. Their work is crucial, because depending on the amount of ink that is impregnated into the surface, the quality level will vary.20 Jan 2023
10. What equipment is used in large format printing?



- 11.
12. Roll-to-roll printers

These printers are high-speed and print directly on the roll of the material. Roll-to-roll printers usually employ cylinder technology, perfect for printing on a large quantity of material.9 Jan 2024

13. What is the maximum size for large format printing?
14. This type of printing is used for producing a wide array of large-scale items, such as banners, posters, murals, wall graphics, billboards (wide format printing), and more. It's characterized by the ability to support maximum print roll widths from 18 to 100 inches.10 Dec 2023
15. What is the difference between wide format and large format printing?
16. Wide format printing is a type of large format printing. While large format printing is a general term for prints that are larger than a common commercial printer can handle, wide format printing generally refers to the specific size of the print. Most wide format printers have a width capacity between 18" and 100".16 Feb 2022
17. Is large format printing profitable?
18. Large format printing technologies have evolved significantly in recent years, resulting in higher quality prints and faster production times. These advancements, coupled with the



increasing demand for large format prints, have made this industry highly lucrative and attractive for businesses of all sizes.

19. What is the scale for large format printing?
20. The best large format printing resolution is a minimum of 100 dpi. The traditional standard for smaller print jobs is around 300 dpi. However, larger files don't need a resolution this high because of the large file sizes. At 100 dpi, most large photo prints and other images will appear crisp and clear.
21. What is the best file type for large format printing?
22. TIFF files
23. TIFF files offer lossless compression, making them ideal for large format printing when you want to maintain the highest possible image quality. Unlike other file formats that may compress images and compromise details, TIFF files retain all the original data without any loss in quality.
24. How do I set up large format printing?
25. If your print is going to be over 150", you should set your file up at 10% scale. In this instance, if your final print needs to be 300" by 100", you would set the dimensions of your file to 30"x10". For your resolution, you'll increase the standard dpi of 75 by 100% and set the file up with a 750 dpi resolution.30 Sept 2019
26. What size file is needed for large print?
27. Large-format printing, however, typically uses image files that are 100 dpi resolution. If the dpi is much larger than that, the file size would be extremely large. EXAMPLE: If you want a 48"x72" large-format print, the image size should be 4800 pixels (48 x 100) by 7200 pixels (72 x 100) at 100 dpi.20 Jul 2023
28. What is the ratio for large print?
29. If you want to make enlarged prints of your digital photos:

Get a camera with a 4:3 aspect ratio (any made by Olympus or Panasonic)

30. How do I choose a large printer format?
31. Size. Before buying a wide-format printer, consider the size of the documents you'll be working with. Your ideal size will be based on the size of the materials you print on. Generally, wide-format printers print on rolls of paper that are up to 300' long or on individual sheets of paper that are fed into it.
32. What are large format printers called?
33. Wide format printers and plotter printers are large paper printers capable of producing wide-scale visuals. Both types use oversized rolls of paper to create images that go beyond the dimensions of what a regular office printer can produce, but there are essential and distinct differences between the two.
34. What are the parts of a large format printer?
35. The core technical component of the large format printer is the print head, and the important components include frame, pump assembly, motor, numerous sensors, ink delivery tube, etc.
36. What is the difference between a plotter and large format printer?
37. Key Differences:

Technology: Plotters use pen technology while wide-format printers use inkjet or thermal transfer technology. Quality: Plotters produce high-quality, precise images while large

format printers are more cost-effective and versatile. Speed: Wide format printers are generally faster than plotters.

38. How to operate a large format printing machine step by step?



39.

40. 0:39

41. 4:20

42. The material is now set up and the machine has determined the print width. Now prepare the print jobMore

43. What are the requirements for large print?

44. Large print—also known as large-font or large-type—refers to formatting a textual document whose font size is significantly bigger than the 12 points most commonly used in printed media and digital documents. The font size of the large print is usually at least 18 points, equivalent to 24px for a web CSS font size

45. Who uses large format printer?

46. Top Applications for Large Format Poster Printers

Office buildings, industrial complexes, retail stores, AEC firms, and various businesses can benefit from large format printing

47. What material is used in large format printer printing?

48. Polyvinyl Chloride (PVC) is a synthetic thermoplastic. It's made by polymerizing vinyl chloride, and it's one of the most commonly used large format printing materials. PVC banners have a wide range of benefits.

49. What is the best resolution for large format printing?

50.



51. 100 dpi

52. The best large format printing resolution is a minimum of 100 dpi. The traditional standard for smaller print jobs is around 300 dpi. However, larger files don't need a resolution this high because of the large file sizes. At 100 dpi, most large photo prints and other images will appear crisp and clear.

53. Is PDF good for large printing?

54. jpg), you can tell a lot about how high-quality a picture is based on the format in which it was rendered and saved. The best file format for large format printing is either TIFF or PDF. PDF files are good at compression, meaning they can make your picture very big or small without losing any quality in between.26 Dec 2022

55. How many pixels are needed for large prints?

56. Do you like charts and want to see all recommended pixel dimensions? Check it out below

| Print Size | 125 PPI Minimum Requirement | 300 PPI Best Quality |
|------------|-----------------------------|----------------------|
| 16" x 24"  | 2000px x 3000px             | 4800 x 7200          |
| 18" x 24"  | 2250px x 3000px             | 5400 x 7200          |
| 20" x 20"  | 2500px x 2500px             | 6000 x 6000          |
| 20" x 24"  | 2500px x 3000px             | 6000 x 7200          |

57. 54 more rows

58. What is the best font size for large print?

59.

60. 18 point

61. The standard font size for large print is 18 point, although you might need larger (or smaller) print, depending on your needs and vision.

62. Can large format printer print on fabric?

63. Large format textile and fabric printing can be used to produce banners, flags, exhibition graphics, showroom displays and other media highlighting indoor and outdoor design projects. Large format print is usually required when printing items over a certain size and for graphics covering large, open spaces.

64. What is CMYK used for?

65.



66. The CMYK color model (also known as process color, or four color) is a subtractive color model, based on the CMY color model, used in color printing, and is also used to describe the printing process itself. The abbreviation CMYK refers to the four ink plates used: cyan, magenta, yellow, and key (black).

67. What is large format printing terminology?

68. Large Format - The printing of any material that is larger than a digital or offset printer, typically larger than 12"x18". Also known as wide format.

Search for:

Large Format Printing Glossary

What You Need to Know About Print Terminology

**Whenever you embark on a new area or discuss with tech guys, it can be difficult to follow some conversations and you will need to learn the specialized vocabulary of the discipline. And this process can be particularly painful. But guess what? We've been compiling a shortlist of printing terms you need to know to help you lift in the print upper class. 😊**

## **BANDING**

Banding, also called pass banding, is a print defect which takes the form of horizontal or vertical lines or halftone pattern area fills. There are several reasons it may occur, but generally, it happens when the print head pass over the substrate multiple times while the substrate is not perfectly lined up during each pass. It may also occur when the print head has blocked nozzles or nozzles are not firing completely straight, or due to a lack of calibration.

## **CALIBRATION**

Calibration is the process of adjusting colors of any device (monitor, scanner, output device) to conform to established industry standards. This is essential with print jobs, particularly as regards to color rendition. It is considered as the first step of Color Management Process.

The artwork must have a similar color rendering both on the graphic designers' monitor and print job. This is why calibration must be performed on a regular base (depending on the output) to represent accurate colors.

## **CMYK**

CMYK is the acronym of Cyan/Magenta/Yellow/Black, the primary pigment colors used in 4 color process printing and most desktop publishing programs. CMY are the subtractive primary colors and are used to reproduce full color on the printed sheet. If these pigments are combined in equal amounts, black is supposed to be produced, but because of imperfections with the pigments, a muddy brown color is produced. For that reason, black (represented by K) is added to give definition to color reproduction and to create bolder text.

## **COLOR MANAGEMENT**

Color management is a way of ensuring the consistent color reproduction of graphics across different media and devices in a digital graphic production process.

More specifically, Color Management Systems (CMS) helps translate images for devices that use different color models such as RGB (Red/Green/Blue) and CMYK (Cyan/Magenta/Yellow/Black). In order to standardize the way colors appear throughout the production process, color profiles are generated for the devices and processes involved in the process. The combination of these color profiles makes it possible to calculate the coefficients necessary for data conversion.

## **COLOR PROFILE**

Color profile is a specific description of how any device either sees or produces color information as referenced by an industry standard IT8 color target.

Color profiles define the colors we capture with our cameras and see on our displays. They control what colors are used and help provide consistency between devices.

Color is a pretty complex subject. Your eyes can see far more colors than your camera can capture or your monitor or even a piece of printed paper can display. This means we need some way to define the subset of colors that cameras can capture and monitors can display. We also need a way to keep colors consistent between the two. A certain shade of red that your camera captures should look the same shade of red on your monitor or your prints. This is where color spaces and color profiles come in.

Manufacturers supply color profiles with professional devices. To ensure high-quality results, profiles need to be created individually using special measuring instruments. This procedure may need to be repeated at regular intervals.

## **DAMPER**

A damper is used to prevent ink starvation. It acts as a filter and it is located directly above the head. Dampers are usually replaced approximately every 3-6 months depending on the intensity and quality of the ink.

## **DEFLECTION OR NOZZLE DEFLECTION**

Deflection is a printing issue related to the print head. It occurs when the nozzles are firing droplets that are being diverted from their normal path. This is mainly due to partial clogged nozzle and it is characterized by wavy patterns.

## **DIGITAL PRINTING**

Digital printing is a printing method that transfers images and text directly from a computer to a digital printing device. The process eliminates the time-consuming and costly processes associated with traditional printing methods such as making film and printing plates.

## **DPI**

DPI stands for Dots per inch. It is the number of individual dots that can be placed in a line within the span of 1 inch (2.54 cm).

## **DYE-SUBLIMATION PRINTING**

In thermal inkjet technology, a dye is a colorant dissolved in solution that forms color by the process of selective absorption of wavelengths of light. Dye-sublimation printing (or dye-sub printing) is a computer printing technique which uses heat to transfer dye onto materials such as a plastic, card, paper, or fabric.

## **ENCAPSULATING**

The process of completely sealing a print in laminate film on both sides and all edges using combined heat and pressure.

## **FINISHING**

Where the printed materials get put into their final format. Examples of finishing include guillotining, folding, binding, drilling, and numbering.

## **ICC PROFILES**

Printer profiling or ICC profiling is considered as the second step of color management process. ICC profiles are color management profiles that meet the ICC standard.

## **LAMINATION**

The process of applying film to one or both sides of a print using either pressure or a combination of heat and pressure. Lamination is compulsory for outdoor use.

## **MICRO PIEZO TECHNOLOGY**

Micro piezo technology works as a tiny electric pump powered by Piezo crystals which change shape with speed and act as a piston when electrical impulses are sent by the printer. This process produces consistent droplets, both in shape and size, to deliver clear and sharp prints.

## **NOZZLE**

Nozzles are the small holes through which ink drops are ejected.

## **NOZZLE FIRING FREQUENCY**

The maximum frequency at which a single nozzle may be fired, or how fast the nozzle can recover and be ready to fire again.

## **PLOTTER**

A wide format plotter is a very specialized type of printer which generates printed documents ranging from two to six feet wide. Businesses which design or construct things have historically used a plotter rather than a traditional printer because only plotters were capable of unparalleled degrees of precision. Today, wide format printing has caught up technologically, making plotters less common than they used to be.

## **PRINT HEAD**

Print heads are printer components that are used to transfer ink onto the substrate. It does this by firing tiny droplets of ink via numerous printer nozzles to create a desired print.

Print heads, that are usually located on the bottom of the ink cartridge, receive printing instructions from the printer processor or the computer. It then evaluates the intensity, amount and location of ink required and moves the head horizontally, line by line, to those locations to write or print the contents.

## **RASTER IMAGE PROCESSOR OR RIP SOFTWARE**

A raster image processor (RIP) is a software that translates (rasterizes) computer vector files (InDesign, Illustrator, Photoshop, PDF, JPG, etc.) to a raster image also known as bitmap that is composed out of a matrix of dots that the printer can understand and print. The raster image is similar to the pixels on the computer screen. The RIP software processes multiple content types for a specific print environment and communicates that processed data to the printer for final output.

RIP software enables handling many file types and file sizes. In addition, most RIP software come with ICC (International Color Consortium) color profilers and allow color management. A powerful ICC color profile management maximizes the color gamut of the inks. The RIP can

also be used to enlarge images for printing without loss of detail since it increases the file resolution.

The RIP is an important component in the printing process as it determines the color, screen pattern and resolution of the printed product. The quality of the RIP software directly determines the quality of the output. RIP ensures reliable color reproduction, saves time in the long run and reduces waste due to multiple reprints.

## **RGB**

RGB is an acronym for Red, Green and Blue – the colors that make up all the color combinations seen on a computer screen. Documents and images set for screen viewing are typically in RGB. In order to use the images for print, they must be converted to CMYK. It also helps to make sure they're at 300ppi, as images taken from the Internet are usually set to 72ppi and may not be large enough to print.

## **SPECTROPHOTOMETER**

A spectrophotometer is a color measurement device used to read the wavelengths of reflected or transmitted light. The most common application of spectrophotometers in the printing industry is the measurement of light absorption.

## **WIPER OR WIPER BLADES**

Wipers are printer components which that are used to clean the underside of print heads.

This entry was posted in Printalk and tagged cheatsheet, glossary, printing te

AL





Large format printing is a powerful visual medium that can take any business to new heights. However, many aspects of large format printing remain little known to the general public. That's why we rounded up 17 of the most common questions about our industry to bring you a guide with everything you need to know about large format printing.

## **Block 2**

Unit 1

Unit 2

Unit 3

Unit 4

Unit 5

## **Block 3**

Unit 1

Unit 2

Unit 3

Unit 4

## **Block 4**

Unit 1

Unit 2

Unit 3

## **Management of Chicken**

Incubation and Hatching

Management of Broiler  
Chicken

Management of Laying Type  
Birds

Routine Management

Diseases and Their Control

## **Management of Backyard and Other Poultry Species**

Backyard Poultry Farming

Duck and Geese Farming

Emu, Guinea Fowl and Turkey  
Farming

Quail Farming

## **Economics and Marketing**

Project Formulation

Farm Record Keeping

Farm Economics

**PRACTICAL MANUAL Experiment No. Name of Experiment**

|              |                                                             |
|--------------|-------------------------------------------------------------|
| EXPERIMENT 1 | Identification of External Body Parts of a Bird             |
| EXPERIMENT 2 | Identification of Chicken Breeds                            |
| EXPERIMENT 3 | Handling of Birds                                           |
| EXPERIMENT 4 | Brooding of Chicks                                          |
| EXPERIMENT 5 | Rearing, Feeding and Watering of Chicks, Growers and Layers |
| EXPERIMENT 6 | Debeaking, Delicing, Deworming and Spraying                 |
| EXPERIMENT 7 | Candling and Grading of Eggs                                |
| EXPERIMENT 8 | Judging and Culling of Layers                               |

**PRACTICAL MANUAL Name of Experiment**

|               |                                                        |
|---------------|--------------------------------------------------------|
| EXPERIMENT 1  | Identification of Feed Ingredients for Poultry Feeding |
| EXPERIMENT 2  | Physical Examination and Judging of Feed Quality       |
| EXPERIMENT 3  | Sampling of Feed for Quality Control                   |
| EXPERIMENT 4  | Identification and Mixing of Mineral in Poultry Feed   |
| EXPERIMENT 5  | Mixing of Vitamin Supplement in Poultry Feed           |
| EXPERIMENT 6  | Mixing of Feed Additives in Poultry Feed               |
| EXPERIMENT 7  | Visit to Feed Plant and CSATC Farm                     |
| EXPERIMENT 8  | Fumigation and Pest Control in Feed Mills/CSATC Farm   |
| EXPERIMENT 9  | Maintaining Records for Ingredients/Compound Feeds     |
| EXPERIMENT 10 | Demonstration of Feeding in Poultry                    |

**COURSE TITLE: POULTRY FARM TRAINING**

| <b>GUIDELINES Day</b> | <b>Title of the experiment</b> |
|-----------------------|--------------------------------|
| DAY 1                 | General View of Poultry Farm   |
| DAY 2                 | Visit to Broiler Farm          |
| DAY 3                 | Visit to Layer Farm            |
| DAY 4                 | Visit to Brooder House         |

|        |                           |
|--------|---------------------------|
| DAY 5  | Visit to Grower House     |
| DAY 6  | Visit to Hatchery         |
| DAY 7  | Visit to Feed Mixing Unit |
| DAY 8  | Bio-security Measures     |
| DAY 9  | Visit to Other Farms      |
| DAY 10 | Discussion and Reporting  |

Identify different breeds of exotic and native pigs

- ● Identify the different techniques in caring and managing of pigs
- ● Describe pig breeds and their characteristics
- ● Manage sow, boar and piglet in the farm
- ● Understand the principles of housing, and design and layout housing for pigs.
- ● Understand good health care management for pigs.
- ● Keep appropriate and adequate records in pig farms.
- ● Know the importance of sanitation
- ● Formulate feeds for different categories of pigs
- ● Calculate gestation period
- ● Identify and prevent common swine diseases
- ● Design and layout of a simple pig sty

## **Course Content**

### **A. SCOPE OF THE COURSE**

1. Introduction to Pig production and terminologies in piggery.
  - a. Breeds of pigs.
  - b. Pig production management systems and operation.
  - c. Importance of pig production.
  - d. Establishment of a pig farm – housing and selection of stock.

### **2. Nutrition**

- a. Nutrition requirements of pigs.
- b. Feed ingredients for pigs.
- c. Feeding.

### **3. Reproduction**

- a. Heat signs.
- b. Mating in pigs.
- c. Management of pregnant sows.
- d. Management of lactating or nursing sows and her litters.
- e. Management of weaned pigs, growers and fatteners.

### **4. Health management**

- a. Types of diseases in pigs and their control.
- b. Routine health management in pigs.
- c. Biosecurity.

### **5. Records keeping**

## **6. Cost Implications (Establishment & Returns)**

### **Training Methods**

The training methods to be adopted lectures, discussions and presentations aided by PowerPoint slides as well as a tour to a commercial pig farm.



## COMPLETE SKILL ACQUISITION TRAINING CENTRE (CSATC)

RC: 7803989

18, Oyo Road, Uncle Joe Building,  
Mokola, Ibadan, Oyo State.

08034722338, 08038346350

09040008080

completeskillacquisition@gmail.com

# ADMISSION LETTER

## OFFICE OF THE REGISTRAR

**NAME:**

**Dear**

### PROVISIONAL LETTER OF ADMISSION

With reference to your application for admission to Complete Skill Acquisition Training Centre (CSATC), I am pleased to inform you that you have been offered provisional admission.

Details are as follows:

**PROGRAM:** .....

**COURSE:** .....

**CAMPUS:** MOKOLA

**RESUMPTION DATE:** TO BE ANNOUNCED LATER

Please note that you are not recognized as a trainee of the Centre until you have completed all registration processes within the specified period.

Accept our hearty congratulations.

.....

Director

.....

Administrative Officer

#### **CONDITIONS FOR OFFER OF PROVISIONAL ADMISSION**

- I. All particulars provided in your Application Form are correct in every respect.
- II. You will present, at the time of registration, the originals of the credentials listed in your Application Form for scrutiny. If the original certificates have not been issued, the statement of results of examinations taken from your Alma-mata will be accepted.
- III. If at any time, after your registration it is discovered that you do not satisfy the minimum entry requirements prescribed for your course of study **at the time of this offer** or that any of the qualifications you claimed to have had are false, forged or incorrect, you will be required to withdraw from Complete Skill Acquisition Training Centre (CSATC), forthwith/or your certificate will be withdrawn. Please note that the offer is not transferable to another diet.
- IV. The names by which you are hereby admitted and by which you will be registered are the ones which will appear on the Certificate that the Centre may issue to you on successful completion of your course except change of name is for marriage purpose.
- V. If you accept this offer, please complete the Acceptance Form and return it to the Director of Training, Complete Skill Acquisition Training Centre (CSATC) immediately with a receipt from the Account Section, Complete Skill Acquisition Training Centre (CSATC) showing the payment of appropriate fees.
- VI. Remittance should be made in bank transfer, payable at the Accounts Section of c, Mokola. If your Acceptance Form, together with the amount indicated, are not received, the offer shall be given to another applicant on the Waiting List. You should write clearly your name and course on the reverse side of the payment receipt and endeavor to obtain an official receipt from the accounts section of Complete Skill Acquisition Training Centre (CSATC) and keep for future record.
- VII. Any Trainee who accepts a Provisional Offer of Admission but fails to register shall forfeit the admission processing fees. Any Trainee who registers and withdraws thereafter will also forfeit the admission processing fees.
- VIII. Any Trainee, who is advised to withdraw after Provisional Offer of Admission on the basis of deficient entry qualification, will forfeit any fees paid. However, where evidence proves that such an irregular admission was not at the instance of the candidate or his/her sponsors, only registration fees and 10% administrative charges will be withheld.
- IX. Please note that you are not recognized as a trainee of the Centre until you complete all registration processes within the specified period. No registration will be allowed after the stipulated period of registration.

- X. You must complete the forms listed below before you can be registered as a trainee of the Centre.
- (a) Matriculation Oath (to be completed on the matriculation day).
  - (b) Evidence of Full Payment.
  - (c) This provisional offer of Admission is based on your acceptance to pay the fees stated below for the various levels of courses and as indicated from time to time throughout your programmes.

| S/No.                                  | Programme                                                    | Tuition fees | Acceptance fee |
|----------------------------------------|--------------------------------------------------------------|--------------|----------------|
| 1                                      |                                                              |              | ₦2,000.00      |
| 2                                      |                                                              |              | ₦2,000.00      |
| 3                                      |                                                              |              | ₦2,000.00      |
| <b>External Examination (Optional)</b> |                                                              |              |                |
| 1                                      | Modular Trade Certificate (MTC)                              |              |                |
| 2                                      | National Technical/Business Certificate (NTC/NBC)            |              |                |
| 3                                      | Advanced National Technical/Business Certificate (ANTC/ANBC) |              |                |
| 4                                      | Trade Test I (TTC)                                           |              |                |
| 5                                      | Trade Test II (TTC)                                          |              |                |
| 6                                      | Trade Test III (TTC)                                         |              |                |
| 7                                      | Vocational Trade Certificate (VTC)                           |              |                |
| 8                                      | Entrepreneurship Proficiency Development (EPD)               |              |                |
| 9                                      | Professional Examination Training (PET)                      |              |                |

| Programme                                                    | Tuition fees | Acceptance |
|--------------------------------------------------------------|--------------|------------|
| Modular Trade Certificate (MTC)                              | ₦10,000.00   | ₦500.00    |
| National Technical/Business Certificate (NTC/NBC)            | ₦12,000.00   | ₦500.00    |
| Advanced National Technical/Business Certificate (ANTC/ANBC) | ₦15,000.00   | ₦600.00    |
| Trade Test I (TTC)                                           | ₦10,000.00   | ₦500.00    |
| Trade Test II (TTC)                                          | ₦7,500.00    | ₦500.00    |
| Trade Test III (TTC)                                         | ₦5,000.00    | ₦500.00    |
| Vocational Trade Certificate (VTC)                           | ₦10,000.00   | ₦500.00    |
| Entrepreneurship Proficiency Development (EPD)               | ₦10,000.00   | ₦1,000.00  |
| Professional Examination Training (PET)                      | ₦20,000.00   | ₦2,000.00  |

Please note that you are not recognized as a trainee of this Centre until you have completed all registration processes within the specified period.

No registration will be allowed after the first three weeks of the diet.