A modularized curriculum divides a course into consumable chunks known as modules. Each module can be taught and learnt independently and concentrates on a single subject or ability. It's similar to segmenting a lengthy book into manageable chunks that each make sense on their own.
or
A curriculum that has been modularized divides education into discrete, autonomous parts known as modules, each of which focuses on a particular competency or skill. In contrast to typical classes, students can work through modules on their own and advance at their own speed.

•Every module functions similarly to a building block.
• You can learn at your own pace, one block at a time.
• You may receive a certificate after completing a few blocks.
• You can combine modules to fit your professional or educational goals. .

Why it's beneficial:

- It's simpler to comprehend when you concentrate on one subject at a time;
- You can take your time and finish later; You may be able to skip or receive credit for any information you already know.
- It assists people in gradually developing their talents.

A modularized curriculum structures learning into distinct, independent units called modules, each focusing on a specific skill or competency. Unlike traditional courses, learners can complete modules individually and progress at their own pace. Each module is assessed, and upon completion of all required modules, learners can achieve a full qualification.

A modularized curriculum has Independent Units whereby Modules are self-contained and can be completed without relying on others in the sequence. Each module concentrates on a specific skill or competency, allowing for specialized learning. As learners complete modules, they build upon their existing knowledge and skills. Each module is assessed, providing learners with clear feedback on their progress. Learners can enter the workforce sooner by completing modules and gaining specialized skills.

ELECTRICAL TECHNICIAN (POWER OPTION) LEVEL 6

The TVET CDACC curriculum for Electrical Technician (Power Option) Level 6 equips graduates with a comprehensive set of skills applicable across various facets of the electrical industry.

A. Skills Acquired and Their Application:

The program focuses on both foundational and specialized electrical competencies, including:

1. Core Technical Skills:

Electrical Machine Automation: Proficiency in controlling and automating electrical machinery for improved efficiency and precision in industrial processes.

Electrical Principles Application: Understanding and applying fundamental electrical theories to practical scenarios, crucial for troubleshooting and system design.

Workshop Process Application: Practical skills in using tools, equipment, and procedures safely and effectively within an electrical workshop environment.

Preparation and Interpretation of Technical Drawings: Ability to read, create, and understand electrical schematics and blueprints, essential for installation, maintenance, and project planning.

Electrical Installation: Competence in installing various electrical systems, wiring, and components in residential, commercial, and industrial settings, adhering to safety standards and regulations.

Electrical Power Lines Installation: Specialized skills in the installation of power transmission and distribution lines.

Electrical Machines Installation: Expertise in setting up and commissioning various types of electrical machines, such as motors and generators.

Electronics: Understanding electronic components and circuits, enabling work with control systems, automation, and electronic device repair.

Security Systems Installations: Knowledge and practical skills in installing and maintaining security systems that often integrate with electrical infrastructure.

Solar System Installation: Growing expertise in renewable energy systems, including the installation of solar power solutions.

Electrical Equipment and Systems Maintenance: Ability to diagnose, repair, and perform preventive maintenance on electrical equipment and integrated systems to ensure operational longevity and safety.

Electrical Project Management: Skills in planning, executing, and overseeing electrical projects, including resource allocation, scheduling, and quality control.

B. Relevant Industry Applications:

Graduates of this program can apply their skills across a broad spectrum of industries, including but not limited to:

Power Generation and Distribution: Working with power plants, substations, and electrical grids for the supply and distribution of electricity.

Construction and Real Estate: Performing electrical installations in new buildings, renovations, and infrastructure projects.

Manufacturing and Industrial Sector: Maintaining and automating electrical machinery and control systems in factories and production facilities.

Telecommunications: Contributing to the electrical infrastructure supporting communication networks.

Renewable Energy: Specializing in the installation and maintenance of solar power systems and other renewable energy technologies.

Maintenance and Repair Services: Providing electrical maintenance and repair for various commercial, residential, and industrial clients.

Security Services: Installing and maintaining electrical components of security and surveillance systems.

Self-Employment/Contracting: Starting and running their own electrical installation, maintenance, or consulting businesses.

ELECTRICAL OPERATOR (POWER OPTION) LEVEL 5

The TVET CDACC curriculum for Electrical Operator (Power Option) Level 5 equips trainees with fundamental and specialized skills essential for operational roles within the electrical sector.

A. Skills Acquired and Their Application:

The program's competency units cover a range of practical and theoretical skills, including:

1. Basic Units of Competency:

Communication Skills: Effectively interacting with colleagues and clients, identifying and meeting communication needs, and applying different communication approaches.

Numeracy Skills: Applying mathematical concepts relevant to electrical operations.

Digital Literacy: Utilizing computer software and hardware, applying security measures, and using internet and email for workplace communication.

Entrepreneurial Skills: Developing basic business acumen and problem-solving abilities applicable to potential self-employment.

Employability Skills: General professional skills that enhance job readiness and workplace conduct.

Environmental Literacy: Understanding and implementing environmentally sound practices in electrical operations.

2. Common Units of Competency:

Engineering Mathematics: Applying mathematical principles to solve engineering problems.

Workshop Processes: Performing various tasks safely and efficiently within an electrical workshop environment.

Electrical Principles: Applying fundamental electrical theories to practical tasks.

Technical Drawing Preparation and Interpretation: Reading and understanding electrical blueprints and schematics, and preparing basic technical drawings.

3. Core Units of Competency:

Electrical Installation: Performing basic electrical wiring and component installation in various settings.

Electrical Power Lines Installation: Assisting in the installation of power transmission and distribution lines.

Electrical Machines Installation: Participating in the setup and commissioning of electrical machines.

Electronics Understanding: Demonstrating basic knowledge of electronic components and circuits.

Security Systems Installation: Assisting in the installation of common security systems.

Solar Systems Installation: Participating in the installation of basic solar power systems.

Electrical Breakdown Maintenance: Performing basic troubleshooting and maintenance to address electrical faults.

B. Relevant Industry Applications:

Graduates of the Electrical Operator (Power Option) Level 5 program are well-prepared for entry-level and support roles primarily within the **Electrical Industry**. They can apply their skills in areas such as:

Power Generation and Distribution Companies: Assisting in the operation and maintenance of power plants and electrical grids.

Electrical Contracting and Installation Firms: Performing electrical wiring, installations, and repairs in residential, commercial, and industrial buildings.

Manufacturing and Industrial Plants: Supporting the operation and maintenance of electrical machinery and systems.
Renewable Energy Sector: Participating in the installation and maintenance of solar power systems.
Building Services: Working on electrical systems in various facilities, including basic maintenance and troubleshooting.
Self-Employment: Operating as independent electrical service providers for smaller installations and maintenance tasks.

The TVET CDACC curriculum for Electronics Craftsperson Level 5 equips individuals with practical skills crucial for various roles in the electronics and electrical engineering sectors.

A. Skills Acquired and Their Application:
The program focuses on both foundational and specialized electronic and electrical competencies:

1. Core Technical Skills:
Perform Electrical Installation: This involves the practical ability to set up and wire electrical systems and components, ensuring functionality and safety in various settings.
Maintain Radio Frequency (RF) Systems: Graduates will be able to troubleshoot, repair, and ensure the proper functioning of equipment that operates using radio frequencies, such as communication systems.
Install Power Supply Systems: This skill covers the installation and setup of diverse power supply units, ensuring stable and appropriate power delivery for electronic and electrical devices.
Install Electrical Machine Control Systems: Trainees learn to install systems that manage and regulate the operation of electrical machines, vital for automation and industrial control.
Apply Electrical Instrumentation: This involves using and understanding various electrical measuring instruments to test, analyze, and monitor electrical circuits and systems.
2. Basic & Common Skills:
Demonstrate Communication Skills: Effective interaction with colleagues and clients, crucial for teamwork and service delivery.
Demonstrate Numeracy Skills: Applying mathematical principles to solve technical problems in electronics.
Other general competencies like digital literacy and occupational health and safety (implied from typical TVET curricula).

B. Relevant Industry Applications:

Graduates of the Electronics Craftsperson Level 5 program can apply their skills across several industries, primarily within the **Electronics, Telecommunications, and Electrical Engineering sectors**. Specific areas include:

Electronic Manufacturing and Assembly: Working in factories that produce electronic components and devices.

Telecommunications: Installing and maintaining radio frequency systems for communication networks (e.g., mobile networks, broadcasting).

Industrial Automation: Installing and maintaining control systems for electrical machinery in manufacturing and processing plants.

Power Systems: Installing and maintaining power supply units for various applications, including industrial and commercial settings.

Maintenance and Repair Services: Providing specialized repair and calibration services for electronic devices and electrical instrumentation.

Building Services: Contributing to the electrical and electronic installations in smart buildings and integrated systems.

The TVET CDACC curriculum for Electrical Installation Level 4 provides foundational skills crucial for entry-level roles within the electrical industry.

A. Skills Acquired and Their Application:

The program focuses on equipping trainees with essential competencies, including:

1. Core Technical Skills:

Power Supply Systems: Basic understanding and handling of power supply units.

Electrical Installation: Fundamental skills in wiring, fitting, and commissioning basic electrical systems in various settings.

Radio Frequency (RF) Systems: Awareness of basic RF system components and their relevance in electrical setups.

Electrical Machine Control Systems: Introductory knowledge of control systems for electrical machines.

Electrical Instrumentation: Basic use of instruments for electrical measurements and testing.

Foundational Skills:

Communication Skills: Effective communication for workplace interaction.

Numeracy and Digital Literacy: Basic application of mathematical concepts and digital tools in electrical contexts.

Occupational Health and Safety Practices: Adherence to essential safety protocols in electrical work environments.

Engineering Mathematics, Workshop Processes, Electrical Principles, and Technical Drawing Preparation and Interpretation: These units provide the necessary theoretical and practical groundwork for electrical tasks.

2. Relevant Industry Applications:

Graduates with Electrical Installation Level 4 qualifications are prepared for assistant and support roles primarily within the **Construction Industry** (for electrical wiring of buildings), **Maintenance Services** for basic electrical systems, and entry-level positions in **Electrical Contracting Firms**. They can also find opportunities in supporting roles within larger **Manufacturing Facilities** or in areas requiring general electrical fitting and troubleshooting. Their skills are directly applicable to ensuring the safe and functional installation of electrical systems in various domestic, commercial, and light industrial settings across Kenya.

The "Electrical Wireman Grade I, II, and III" certifications are primarily examined and certified by the **National Industrial Training Authority (NITA)**, the Electrical Wireman grades typically fall under NITA's purview.

A. These NITA-certified Electrical Wireman grades typically focus on practical skills for electrical wiring and installation, with each grade representing an advancement in skill and complexity:

1. Electrical Wireman Grade III: This is often an entry-level qualification, typically requiring a minimum of D (Minus) KCSE grade or below, with a duration of about 6 months. It focuses on foundational skills in electrical wiring and domestic installations.

2. Electrical Wireman Grade II: Requires completion of Grade III, building upon those competencies with more advanced wiring techniques and troubleshooting. It also typically has a duration of about 6 months.

3. Electrical Wireman Grade I: The highest grade, requiring completion of Grade II. It involves comprehensive skills in complex electrical wiring, installation, maintenance, and potentially supervisory roles, also with a duration of about 6 months.

B. Skills Acquired (General for all grades, increasing in complexity):

Safe electrical wiring practices for various premises (domestic, commercial, industrial).

Installation of lighting, power circuits, and related electrical equipment.

Basic troubleshooting and fault finding in electrical systems.

Understanding of electrical codes and regulations.

Use of various electrical tools and testing equipment.

Interpretation of basic electrical diagrams.

C. Application and Industry:

Electrical Wiremen are crucial for the **construction industry**, particularly in building and renovating residential, commercial, and industrial structures. They work in **electrical contracting firms**, providing services for new installations, upgrades, and maintenance of electrical systems. Opportunities also exist in **facility management**, ensuring the electrical

functionality of buildings, and potentially in **self-employment** as certified electricians. Their skills are fundamental to ensuring safe and functional electrical infrastructure.
For curriculum details specific to NITA's Electrical Wireman grades, you would typically find them through NITA's official channels or institutions offering NITA-aligned programs.

CIVIL ENGINEERING CLASS

Studying Civil Engineering in Kirinyaga Central Technical and vocational college, equips graduates with practical, competency-based skills relevant to the construction and infrastructure industry.

Skills Gained:

Key skills gained include:

- **Core Civil Engineering Principles:** Understanding fundamental concepts in structural analysis, fluid mechanics, soil mechanics, transportation engineering, and environmental engineering.
- **Material Testing:** Conducting tests on construction materials like concrete, soil, and asphalt to ensure quality and compliance with standards.
- **Surveying and Setting Out:** Performing highway surveys, land surveying, and setting out for various civil works using modern equipment like total stations and GPS.
- **Structural Design:** Designing basic engineering structures and elements.
- **Pavement Design and Construction:** Designing basic pavement structures and carrying out road construction works.
- **Building Works:** Producing building drawings, carrying out various building construction activities, and overseeing building finishes and services.
- **Water Resources and Sanitation Management:** Applying principles of water resource, water, and sanitation services management, including designing and constructing wastewater collection and treatment infrastructure and onsite sanitation facilities.

- **Project Management:** Managing civil engineering projects, including planning, execution, and supervision.
- **Technical Drawing and CAD:** Proficiency in technical drawing and potentially computer-aided design (CAD) software for drafting and design.
- **Communication and Digital Literacy:** Developing effective communication skills for workplace interactions and digital literacy for using relevant software and tools.
- **Entrepreneurial and Employability Skills:** The CDACC curriculum often integrates skills aimed at fostering entrepreneurship and enhancing overall employability.

Where a Graduate Can Work/Get Employed:

- **Construction Companies:** Working as site supervisors, construction technicians, assistant project managers, or quality control inspectors on various building, road, and infrastructure projects.
- **Government Ministries and Agencies:**
    - **Ministry of Transport and Infrastructure:** Involved in road construction and maintenance, bridge projects, etc.
    - **Ministry of Water, Sanitation and Irrigation:** Working on water supply projects, dam construction, wastewater treatment, and sanitation initiatives.
    - **County Governments:** Contributing to local infrastructure development and maintenance.
    - **National Construction Authority (NCA):** As technical officers ensuring compliance with building codes and standards.
- **Consultancy Firms:** Assisting civil engineers in design, supervision, and project management roles.
- **Real Estate Developers:** Overseeing construction aspects of housing and commercial developments.
- **Utilities Companies:** Working with water and sewerage companies (e.g., Water Service Boards) on infrastructure development and maintenance.
- **Material Testing Laboratories:** Conducting quality control tests on construction materials.

- **Self-Employment/Entrepreneurship:** Many CDACC graduates, with their practical skills, can start their own small-scale construction or contracting businesses, offering services in masonry, plumbing, road works, or other specialized areas.
- **Academia/Training Institutions:** With further experience and qualifications, some may pursue careers as technical trainers in TVET institutions.

BUILDING TECHNOLOGY LEVEL 6

- **Building Construction Principles and Practices:** A deep understanding of construction methods, techniques, and sequences for various types of buildings (residential, commercial, industrial). This includes substructure works, superstructure works, building finishes, and external works.
- **Construction Materials Science:** Knowledge of the properties, characteristics, uses, and testing of various construction materials (concrete, steel, timber, masonry, glass, etc.) to ensure quality and suitability for specific applications.
- **Technical Drawing and CAD:** Proficiency in interpreting and producing detailed building drawings, including architectural, structural, and services drawings. Many programs also include training in Computer-Aided Design (CAD) software.
- **Building Services:** Understanding the planning, design, installation, and maintenance of essential building services such as plumbing, electrical systems, HVAC (heating, ventilation, and air conditioning), and fire safety systems.
- **Structural Design Fundamentals:** Basic knowledge of structural analysis and design principles for building elements.
- **Site Management and Supervision:** Skills in planning, organizing, coordinating, and supervising construction activities on a building site, including managing labor, materials, plant, tools, and equipment.
- **Quantity Surveying and Estimating:** Ability to take off quantities from drawings, prepare bills of quantities, estimate costs, and assist in contract administration and cost control.
- **Occupational Safety and Health (OSH):** Implementing and enforcing safety regulations and practices on construction sites to ensure a safe working environment.

- **Project Management Basics:** Understanding of project planning, scheduling, budgeting, and quality assurance in construction projects.
- **Workshop Technology Practices:** Practical skills in various building trades such as masonry, carpentry, joinery, and plumbing, often gained through extensive workshop sessions.
- **Temporary Works:** Knowledge of designing and erecting temporary structures like scaffolding and formwork.
- **Communication Skills:** Effective verbal and written communication for workplace interactions, reporting, and documentation.
- **Digital Literacy:** Competence in using relevant software and digital tools for construction management, drafting, and general office tasks.
- **Entrepreneurial Skills:** Development of skills to identify business opportunities, plan, and potentially run small-scale construction or related ventures.
- **Employability Skills:** General professional skills such as teamwork, problem-solving, critical thinking, and adaptability.

Where a Graduate Can Work/Get Employed:

- **Construction Companies:**
    - **Site Supervisor/Foreman:** Overseeing daily construction activities, managing site personnel, and ensuring adherence to plans and safety standards.
    - **Building Technician:** Providing technical support in various aspects of construction.
    - **Assistant Project Manager:** Assisting in project planning, execution, and monitoring.
    - **Quality Control/Assurance Officer:** Inspecting materials and workmanship to ensure compliance with quality standards.
    - **Estimator/Quantity Surveyor Assistant:** Assisting in cost estimation, bidding, and contract administration.
- **Consultancy Firms (Architectural, Structural, Quantity Surveying):**
    - **Architectural Draughtsman:** Preparing and modifying architectural drawings.

    - **Technical Assistant:** Providing support to architects, structural engineers, or quantity surveyors.
- **Government Ministries and Agencies:**
    - **Ministry of Public Works:** Involved in the construction and maintenance of government buildings and infrastructure.
    - **County Governments:** Contributing to urban development, building control, and housing projects.
    - **National Construction Authority (NCA):** As technical officers involved in regulation and quality assurance.
- **Real Estate Developers:** Supervising construction activities for residential, commercial, or mixed-use developments.
- **Building Materials Suppliers:** Providing technical advice on product usage and quality control.
- **Self-Employment/Entrepreneurship:**
    - Starting small-scale construction firms or contracting businesses (e.g., specializing in renovations, specific trades like masonry, carpentry, or plumbing).
    - Offering technical drawing services.
    - Acting as a project supervisor for small-scale building projects.
- **Maintenance Departments:** Working in institutions (schools, hospitals, factories) or large organizations to manage and oversee building maintenance and repairs.
- **Academic/Training Institutions:** With further experience and professional development, some graduates may become instructors in TVET institutions.

BUILDING TECHNOLOGY LEVEL 5

Skills Gained:

- **Performing Construction Site Preliminary Works:** This includes tasks like site clearing, setting out, and establishing temporary facilities.
- **Executing Building Substructure Works:** Practical skills in foundation excavation, concrete pouring for footings and foundations, and damp-proof course installation.
- **Executing Building Superstructure Works:** Hands-on ability in masonry (bricklaying, block laying), concrete works for walls, columns, and beams, and general frame construction.
- **Constructing Roof Structures:** Skills in fabricating and erecting timber or steel roof trusses, and understanding different roofing materials and their installation.
- **Installing Building Doors and Windows:** Proficiency in fixing door and window frames, hanging doors, and installing window panes.
- **Executing Building Finishes:** Practical skills in various finishing trades such as plastering, rendering, screeding, tiling (floor and wall), painting, and perhaps basic carpentry for internal fit-outs.
- **Executing External Works:** Basic knowledge and practical skills in constructing external elements like pathways, drainage systems, and boundary walls.
- **Applying Technical Drawing:** Ability to read and interpret basic building plans and technical drawings.
- **Basic Construction Material Knowledge:** Understanding the common building materials used in basic construction, their properties, and proper handling.
- **Occupational Safety and Health (OSH):** Adhering to safety procedures and using personal protective equipment (PPE) on a construction site.
- **Use of Hand and Power Tools:** Competence in safely operating a range of hand tools and common power tools used in building construction.
- **Basic Communication and Digital Literacy:** Essential workplace communication and foundational digital skills.
- **Entrepreneurial Skills:** Some programs also touch on basic entrepreneurial skills to enable graduates to potentially start their own small businesses.

Where a Graduate Can Work/Get Employed:

Graduates of Building Technology Level 5 programs are primarily trained to be skilled artisans and technicians, ready for immediate employment in the construction sector. Their employment opportunities are largely hands-on and site-based:

- **Construction Companies (Small to Large Scale):**
    - **Skilled Artisan/Craftsman:** Working directly on site as a mason, carpenter, joiner, tiler, plasterer, or painter.
    - **Construction Assistant:** Supporting site supervisors and foremen in various tasks.
    - **General Labourer (with enhanced skills):** Performing various manual tasks, but with a foundational understanding of construction processes.
    - **Assistant to a Site Foreman:** Carrying out instructions and coordinating specific tasks under supervision.
- **Self-Employment/Freelance:** Many Level 5 graduates find success by becoming self-employed contractors for specific trades. They can offer services directly to clients for:
    - House construction (small scale)
    - Renovations and extensions
    - Tiling and flooring
    - Plastering and painting
    - Masonry work
    - Carpentry and joinery for doors, windows, and roof structures
- **Real Estate Development Firms:** Employed as part of the direct construction team for their projects.
- **Building Material Suppliers:** Some may work in sales or technical support roles, advising customers on material usage.
- **Maintenance Departments:** Working for large institutions (e.g., schools, hospitals, factories) or property management companies to carry out routine building maintenance and repairs.
- **Government Agencies (Local/County Level):** In departments dealing with public works, housing, or infrastructure maintenance, as technical assistants or skilled laborers.

BUILDING TECHNOLOGY LEVEL 4

Skills Gained:

- **Basic Construction Techniques:** Performing fundamental building operations such as mixing concrete, laying bricks/blocks for basic walls, and preparing mortar.
- **Reading Basic Technical Drawings:** Ability to interpret simple building plans, layouts, and specifications for specific tasks.
- **Safe Use of Hand Tools:** Proficiency in using common hand tools and basic power tools safely and effectively for construction tasks (e.g., hammers, saws, levels, drills).
- **Material Handling and Storage:** Understanding how to properly handle, store, and basic measure common construction materials (e.g., cement, sand, aggregates, timber).
- **Site Safety Procedures:** Adhering to fundamental occupational safety and health (OSH) practices on a construction site, including the use of Personal Protective Equipment (PPE).
- **Basic Measurement and Calculation:** Performing simple measurements using tapes and rules, and basic calculations related to quantities of materials.
- **Specific Trade Skills:** Depending on the specialization within Building Technology (e.g., Masonry, Carpentry, Plumbing), graduates will gain specific skills such as:
    - **Masonry:** Laying bricks and blocks for walls (straight, corners), rendering, plastering, and basic concrete work.
    - **Carpentry & Joinery:** Basic timber cutting, jointing, framing, and installing simple doors and windows.
    - **Plumbing:** Basic pipe fitting, installation of simple plumbing fixtures, and understanding of water supply and drainage systems.
- **Workplace Communication:** Basic communication skills for understanding instructions, reporting progress, and interacting with colleagues.
- **Problem-Solving (Basic):** Addressing simple technical issues encountered during practical tasks.

Where a Graduate Can Work/Get Employed:

- **Construction Sites (Small to Large Scale):**

    - **Artisan/Craftsman:** Working as a specialized artisan (e.g., Mason, Carpenter, Plumber) on building projects.
    - **Skilled Labourer:** Performing specific tasks that require basic technical knowledge and skill, such as preparing materials, assisting senior artisans, or carrying out basic installations.
    - **Assistant to a Foreman/Supervisor:** Supporting higher-level technicians and supervisors in day-to-day site operations.
- **Individual Contractors / Self-Employment:** With the practical skills gained, many Level 4 graduates can become self-employed, taking on small construction jobs, renovations, or specialized trade work directly for clients. This includes:
    - Building small structures (e.g., detached walls, simple extensions).
    - Undertaking repair works (e.g., plaster repairs, minor plumbing fixes).
    - Specializing in tiling, painting, or other finishes.
- **Building Maintenance Teams:** Working for organizations (e.g., schools, hospitals, factories, hotels) or large property management companies to perform routine maintenance and minor repairs on buildings.
- **Building Material Supply Companies:** In roles that might involve demonstrating product usage, assisting with material handling, or basic technical sales.
- **Government Agencies (Local Level):** Potentially employed in public works departments for basic infrastructure maintenance or construction projects.

PLUMBING LEVEL 5.

Skills Gained:

A CDACC Plumbing Level 5 program emphasizes hands-on proficiency and a deeper understanding of plumbing systems. Key skills gained include:

- **Advanced Pipework Installation:**
    - **Domestic Pipework:** Proficiently installing and connecting water supply systems (hot and cold), drainage systems (waste and vent), and rainwater harvesting systems for residential buildings.

    - **Industrial/Commercial Pipework (Basic):** Understanding and performing basic pipework installations in larger commercial or industrial settings.
    - **Various Piping Materials:** Working competently with different piping materials such as PVC, PPR, galvanized iron, copper, and PEX, including cutting, joining (e.g., solvent welding, soldering, threading, crimping), and testing.
- **Sanitary Appliance Installation:** Installing and connecting a wide range of sanitary fixtures and fittings, including sinks, toilets, showers, bathtubs, bidets, and water heaters (both electric and solar).
- **Water Storage Systems:** Installing and connecting water tanks (storage and booster tanks) and associated auxiliary fittings.
- **Drainage Systems:** Installing and maintaining efficient wastewater collection and disposal systems, including traps, vents, and main drains, ensuring proper gradient and preventing blockages.
- **Maintenance and Repair of Plumbing Systems:** Diagnosing and troubleshooting common plumbing issues like leaks, blockages, low water pressure, and faulty fixtures. Performing repairs, replacements, and routine maintenance.
- **Hot Water Systems:** Installing, maintaining, and troubleshooting various hot water systems, including solar water heaters and electric water heaters. Some curricula may also include basic solar PV system installation skills.
- **Fire Control Systems (Basic):** Installing and maintaining basic fire fighting plumbing components like hose reels and hydrants.
- **Reading and Interpreting Plumbing Drawings:** Accurately understanding plumbing schematics, blueprints, and technical specifications.
- **Material Quantification and Estimation:** Preparing and quantifying materials needed for plumbing installations and repairs, and assisting with basic cost estimation.
- **Tools and Equipment:** Competence in using a wider range of specialized plumbing tools and equipment, including pipe wrenches, cutters, threaders, soldering torches, drain cleaning equipment, and testing tools.
- **Safety Practices:** Strict adherence to occupational safety and health (OSH) regulations and practices specific to plumbing work, including working with pressurized systems, hot water, and in confined spaces.

- **Troubleshooting and Problem Solving:** Systematically identifying and resolving complex plumbing issues.
- **Customer Service:** Effectively communicating with clients, understanding their needs, and providing professional service.
- **Basic Entrepreneurial Skills:** The CDACC curriculum often integrates skills to enable graduates to operate as independent plumbers or start small plumbing businesses.

Where a Graduate Can Work/Get Employed:

- **Construction Companies:**
    - **Plumbing Technician/Artisan:** Direct involvement in installing and commissioning plumbing systems in new residential, commercial, and industrial buildings.
    - **Site Plumber:** Working on construction sites, ensuring plumbing work adheres to plans and quality standards.
- **Real Estate Developers:** Employed by developers to handle plumbing installations and maintenance for their housing projects and properties.
- **Water and Sanitation Companies (e.g., Water Service Boards):** Working on water supply networks, distribution systems, and sanitation infrastructure maintenance and connection.
- **Hotels, Hospitals, and Large Institutions:** Employed in their maintenance departments to manage and repair plumbing systems, including kitchens, laundries, and sanitary facilities.
- **Manufacturing and Industrial Plants:** Maintaining plumbing and piping systems within factories and industrial complexes.
- **Plumbing Service and Repair Companies:** Working as field technicians, responding to service calls for plumbing repairs, installations, and maintenance for residential and commercial clients.
- **Building Management Companies:** Providing plumbing maintenance services for managed properties.
- **Building Material Suppliers:** Providing technical advice to customers, or assisting with inventory management for plumbing supplies.

- **Self-Employment/Freelance Plumbing:** Many Level 5 plumbers successfully establish their own businesses, offering a range of services from new installations to repairs and maintenance for individual clients, small businesses, and contractors. This is a very common and lucrative path for skilled plumbers in Kenya.
- **Local Government/County Councils:** Involved in the maintenance of public infrastructure and facilities.
- **Solar Water Heating Companies:** Installing and maintaining solar water heating systems.
- **Appliance Repair Companies:** Specializing in the repair of water-related appliances.

PLUMBING LEVEL 4

Skills Gained:

A CDACC Plumbing Level 4 program emphasizes the core competencies required to perform basic plumbing installations, maintenance, and repairs. Key skills gained include:

- **Basic Pipework Installation:**
    - **Joining Pipes:** Ability to cut, prepare, and join common piping materials such as PVC, galvanized iron (GI), and possibly basic copper, using appropriate methods (e.g., solvent welding for PVC, threading for GI, basic soldering for copper).
    - **Fitting Components:** Installing simple pipe fittings like elbows, tees, unions, and valves.
    - **Simple Layouts:** Understanding and setting up basic pipe runs for water supply and drainage.
- **Installation of Basic Sanitary Appliances:** Connecting and securing standard fixtures like sinks, wash hand basins, and toilets to existing water supply and drainage points.
- **Basic Drainage Systems:** Understanding and performing basic drainage pipe installation, including traps, waste pipes, and vent pipes for single fixtures.
- **Basic Maintenance and Repair:**
    - **Leak Detection and Repair:** Identifying and fixing simple leaks in pipes and fittings.

    - **Clearing Blockages:** Using basic tools and techniques to clear minor clogs in sinks, toilets, and drains.
    - **Replacing Fixtures:** Removing old, faulty fixtures and installing new ones.
- **Reading Basic Plumbing Drawings:** Interpreting simple plumbing diagrams, symbols, and layouts.
- **Tool and Equipment Proficiency:** Safe and correct use of common plumbing hand tools (e.g., wrenches, pliers, pipe cutters, measuring tapes) and basic power tools.
- **Material Recognition:** Identifying and understanding the basic properties and uses of common plumbing materials.
- **Occupational Safety and Health (OSH):** Adhering to fundamental safety protocols on a job site, including proper handling of tools, wearing PPE, and awareness of hazards.
- **Basic Measurement and Calculation:** Performing accurate measurements and simple calculations for material quantities and pipe lengths.
- **Basic Communication:** Effective verbal communication to understand instructions and report progress.

Where a Graduate Can Work/Get Employed:

- **Construction Sites:**
    - **Plumbing Artisan/Assistant Plumber:** Working directly on new building projects, installing water supply and drainage systems for residential or small commercial buildings.
    - **Skilled Labourer:** Performing specific plumbing-related tasks as part of a larger construction crew.
- **Individual Plumbing Contractors / Freelance:** Many Level 4 graduates can work as self-employed individuals for small-scale plumbing jobs, including:
    - Fixing leaks and blockages in homes.
    - Installing or replacing sinks, toilets, and other fixtures.
    - Carrying out minor plumbing renovations.
    - Offering basic plumbing maintenance services.

- **Building Maintenance Departments:** Employed by institutions (e.g., schools, hospitals, hotels, residential apartments, factories) to handle routine plumbing maintenance, repairs, and minor installations within their facilities.
- **Property Management Companies:** Providing plumbing services for properties under their management.
- **Hardware Stores / Plumbing Material Suppliers:** Working in sales or technical support roles, advising customers on plumbing products.
- **Water and Sanitation Companies (e.g., Water Service Boards):** Potentially in entry-level roles for connecting new water lines or assisting with basic network maintenance.
- **Real Estate Developers:** As part of their in-house construction or maintenance teams for their properties.
- **Government Agencies (Local/County Level):** In departments responsible for public buildings, housing, or municipal water and sanitation, as technical assistants or skilled laborers.

ICT Technician level 6

A trainee who has completed training in ICT Technician Level 6 will acquire a range of practical and theoretical skills such as the following:

Networking: The trainee would be able to configure, troubleshoot, and maintain computer networks. This includes understanding network protocols, hardware, and security measures. They could set up and manage network devices, diagnose connectivity issues, and implement network security protocols.

Software Installation: The trainee would be proficient in installing, configuring, and updating various software applications. This includes operating systems, productivity software, security software, and specialized applications.

Controlling ICT Security Threats: The trainee would be able to identify, assess, and mitigate ICT security threats. This includes understanding security vulnerabilities, implementing security

measures, and responding to security incidents. They would be able to protect systems and data from unauthorized access, use, disclosure, disruption, modification, or destruction.

Providing ICT System Support: The trainee would be able to provide technical support to users, troubleshoot hardware and software issues, and maintain IT systems. This includes responding to user inquiries, resolving technical problems, and ensuring the smooth operation of IT infrastructure.

Performing Computer Repair and Maintenance: The trainee would possess the skills to diagnose and repair hardware and software problems on computers. This includes replacing components, troubleshooting hardware failures, and performing preventative maintenance to ensure optimal system performance. They would also be able to recover data and secure systems against malware.

Performing Website Design: The trainee would be able to design and develop websites. This includes understanding web design principles, using web development tools, and creating user-friendly and visually appealing websites. They would be able to create websites that meet specific requirements and goals.

Managing Database Systems: The trainee would be able to design, implement, and manage database systems. This includes understanding database structures, query languages (like SQL), and database administration tasks such as backups, security, and performance optimization. They could create and manage databases to store and retrieve data efficiently.

Performing Management Information Systems (MIS): The trainee would be able to understand and utilize MIS to support organizational decision-making. This includes understanding data analysis, reporting, and the use of information systems to improve business processes. They would be able to analyze data, generate reports, and provide insights to support strategic planning and operational efficiency.

Performing Graphic Design: The trainee would be able to create visual content for various purposes. This includes understanding design principles, using graphic design software, and creating graphics for websites, marketing materials, and other applications. They would be able to create visually appealing and effective designs.

Developing Computer Programs: The trainee would be able to write, test, and debug computer programs. This includes understanding programming languages, software development methodologies, and the software development lifecycle. They could create applications to automate tasks, solve problems, and provide specific functionalities.

Developing Mobile Applications: The trainee would be able to design, develop, and deploy mobile applications. This includes understanding mobile app development platforms, programming languages, and user interface design. They would be able to create applications for smartphones and tablets.

ICT Technician Level 5

Networking: The trainee would be able to configure, troubleshoot, and maintain computer networks. This includes understanding network protocols, hardware, and security measures. They could set up and manage network devices, diagnose connectivity issues, and implement network security protocols.

Software Installation: The trainee would be proficient in installing, configuring, and updating various software applications. This includes operating systems, productivity software, security software, and specialized applications.

Perform Computer Repair and Maintenance: The trainee will be proficient in installing various types of software, including operating systems, applications, and utilities. This includes understanding software compatibility, system requirements, and installation procedures. The trainee also will be able to troubleshoot software-related issues, such as installation errors, software conflicts, and performance problems. This involves identifying the root cause of the problem and implementing appropriate solutions.

Manage Database System: The trainee will be able to diagnose and repair hardware issues, such as component failures, system crashes, and performance bottlenecks. This includes understanding computer hardware components, diagnostic tools, and repair procedures. Also the trainee will be able to perform preventive maintenance tasks, such as cleaning computer components, updating drivers, and backing up data. This helps to ensure the long-term reliability and performance of computer systems.

Develop Computer Program: The trainee will be able to manage database systems, including installing, configuring, and maintaining databases. This includes understanding database concepts, database management systems (DBMS), and database security principles. The trainee will also be able to manage data within a database, including creating and modifying database tables, querying data, and backing up and restoring databases. This involves understanding database query languages (SQL) and data modeling techniques.

ICT Technician Level 5 graduates have diverse career opportunities. The skills acquired in this program prepare individuals for various roles within the Information and Communications Technology (ICT) sector such as:

- **Private Sector:** Companies across various industries often require ICT technicians to maintain and support their IT infrastructure. This can include roles in areas like network administration, help desk support, and system maintenance.
- **Public Sector:** Government agencies at the local, state, and federal levels also employ ICT technicians. These roles can involve supporting internal IT systems, managing networks, and providing technical assistance to government employees. The USAJOBS website lists numerous IT-related positions within the federal government, including some that may be suitable for ICT Technician Level 5 graduates
- **Educational Institutions:** Schools, colleges, and universities often have IT departments that require technicians to manage their computer systems, networks, and other technology resources.
- **Telecommunications Companies:** These companies require ICT professionals to install, maintain, and troubleshoot telecommunications equipment and networks.
- **Healthcare Organizations:** Hospitals and clinics rely on ICT technicians to manage their IT infrastructure, including electronic health records systems and medical devices.
- **Other Industries:** Virtually any organization that relies on technology, from manufacturing to retail, may need ICT technicians to support their operations.

ICT level Assistant level 4

A trainee who has completed training in ICT Assistant Level will acquire a range of practical and theoretical skills. These skills are essential for performing the duties of an ICT Assistant at Level 4.

1. **Use ICT Devices:** This encompasses the ability to operate various ICT devices effectively. This includes computers, printers, scanners, and other peripherals. The trainee should be able to understand the basic functionalities of these devices and troubleshoot common issues.

2. **Install Computer Software:** The trainee will gain the ability to install, configure, and update software applications on computers. This includes operating systems, productivity software, and other relevant programs. They should understand software licensing and be able to troubleshoot installation problems.

3. **Repair and Maintain a Computer:** This involves diagnosing and resolving hardware and software issues. The trainee will learn to identify faulty components, perform basic repairs, and maintain computer systems to ensure optimal performance. This includes tasks like cleaning hardware, updating drivers, and running diagnostic tests.

4. **Apply Microsoft Office Tools:** Proficiency in Microsoft Office applications (Word, Excel, PowerPoint, Outlook, etc.) is crucial. The trainee will be able to create documents, spreadsheets, presentations, and manage email effectively. They should understand advanced features and be able to use these tools to improve productivity.

Pursuing an ICT Assistant Level 4 qualification offers several benefits, both for the individual and for potential employers.

Cyber Security level 5

A trainee who has pursued Cyber Security level 5 will acquire a comprehensive set of skills essential for a career in cybersecurity and IT support such as;

1. **Perform Computer Repair and Maintenance:** This training equips the trainee with the ability to diagnose and resolve hardware and software issues, maintain computer systems, and ensure optimal performance. Skills include troubleshooting, component replacement, operating system installation and configuration, data backup and recovery, and preventative maintenance.
2. **Demonstrate Understanding of Security Laws, Policies, and Regulations:** This training provides knowledge of legal and regulatory frameworks related to data protection, privacy, and cybersecurity. The trainee will understand the importance of compliance, data governance, and ethical considerations in cybersecurity practices.
3. **Perform Computer Networking:** This training focuses on the fundamentals of computer networks, including network design, implementation, and troubleshooting. The trainee will learn about network protocols, network devices (routers, switches, firewalls), network security, and network administration.
4. **Secure Software Applications:** This training covers secure coding practices, vulnerability assessment, and the implementation of security measures to protect software applications from threats. The trainee will learn about common vulnerabilities (e.g., SQL injection, cross-site scripting), secure development lifecycles, and application security testing.
5. **Secure Databases:** This training focuses on securing databases, including access control, data encryption, and database auditing. The trainee will learn how to protect sensitive data stored in databases from unauthorized access, modification, or deletion.
6. **Install Cybersecurity Systems:** This training covers the installation, configuration, and maintenance of various cybersecurity systems, such as firewalls, intrusion detection/prevention systems (IDS/IPS), antivirus software, and security information and event management (SIEM) systems.
7. **Conduct Security Assessment and Testing:** This training equips the trainee with the skills to assess the security posture of systems and networks, identify vulnerabilities, and conduct penetration testing. The trainee will learn about various security testing methodologies, vulnerability scanning tools, and reporting techniques.

Based on the acquired skills, the trainee can pursue various roles in the IT and cyber security fields across different sectors such as:

- **IT Support:**
    - **Help Desk Technician:** Providing technical support to end-users, troubleshooting hardware and software issues, and resolving network problems.
    - **Computer Repair Technician:** Diagnosing and repairing computer hardware and software issues.
    - **System Administrator:** Managing and maintaining computer systems, networks, and servers.
- **Cybersecurity:**
    - **Security Analyst:** Monitoring security systems, analyzing security events, and responding to security incidents.
    - **Cybersecurity Specialist:** Implementing and maintaining security measures to protect systems and data.
    - **Network Security Engineer:** Designing, implementing, and managing network security infrastructure.
    - **Penetration Tester/Ethical Hacker:** Conducting security assessments and penetration tests to identify vulnerabilities.
    - **Security Consultant:** Providing security advice and guidance to organizations.

FASHION DESIGN/ COSMETOLOGY DEPARTMENT

BENEFITS OF STYDING FASHION DESIGN

LEVEL 4

1. Sewing machine operations- the trainee will learn skills that help them to operate the sewing machine, trouble shoot sewing machine, service and maintain the sewing machine and promoting workshop ethical practices.

2. Construction of simple garments- a trainee will be able to sketch basic garments, develop free hand garment pattern pieces, Lay and cut garment pieces, construct selected basic garment, finish constructed garment, display and package garment
3. Garments production –the trainee obtains competencies required to produce various garment designs from simple to complex. He/ she will be able to produce styled skirt, produce styled trouser, produce styled short, produce styled blouse and produce styled dress.
4. Decorated Fabrics production- a trainee gains skills in fabric decoration like; tie and dye, batik, printing,

A trained level 4 trainee can work in various areas in any of the following careers

- ✓ fashion designer- creating original clothing
- ✓ tailoring
- ✓ dressmaking
- ✓ technician- minor sewing machine repairs

Level 5

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4. Decorated Fabrics production- a trainee gains skills in fabric decoration like; tie and dye, batik, printing,
5. Construction of fashion accessories – here the trainee will be able to construct various accessories like jewelry, bags and hats.

6. Textile material- the trainee will obtain competencies on various types of fabrics, their construction, their uses and identification

Prospective work areas for level 5 trainee

- ✓ fashion designer -creating original clothing and accessories
- ✓ stylist- select clothing and accessories for various purposes
- ✓ technician
- ✓ fashion consultant- advise individuals or businesses on fashion related matters
- ✓ Pattern maker- create patterns for garments from designers vision
- ✓ Fashion illustrator- create visual representation of designs
- ✓ Costume designer – create costumes for film, theater and other entertainment venues
- ✓ Fashion blogger- write and report on fashion trends, news and events
- ✓ Textile designer- designing fabrics and patterns used in clothing.

LEVEL 4 FOOD PRODUCTION

Dessert Preparation. This will help one to acquire different skills of making different types of dessert and cake and also cold and hot dessert..

Beverage preparation -A trainee in this level will be able to make variety of beverages examples the milkshake, cappuccino, Iced teas and know what beverage to be served at What meal.

Preparation of cereals _In this unit they learn variety of cereals, production and the nutritional value of the dishes which are now popular in the industry.

Preparation of soups. A trainee will be able to make different types of soups both local and International soups..

It will expose them to benefit a lot from the basic skills to the complex

LEVEL 5 FOOD PRODUCTION

Preparation of cold starters. The candidate will be able to produce different types of cold and hot starters and will have skills to make them and their method of preservation.

Cake and cake decoration. This unit basically equips a learner with skill to bake different varieties of cakes and the trainee will be able to work in a bakery or open up his own cake centre.

Beverage preparation -in this unit the trainee will be able to learn different types of beverages both hot and cold and this trainee will confidently learn on Mixology and can work in a five Star hotels, café and also international hotels

Meat preparation _This Will equip a trainee with carving skills and the trainee can confidently work in a hotel in the meat preparation and can become a saucier.

LEVEL 6 FOOD PRODUCTIONS

A Trainee in this level has a lot of skills attained From the two levels above and this is capable of becoming the overall in the various sections of the Hotel industry..

Example

Sauces preparation _This two units makes one to be a perfect chief chef in the hotel since most of the Knife skills are used there. The trainee will be able to work in the hotel.

Beverage preparation. In This area the Trainee has acquired all the beverage skills and the techniques used to serve all the beverages.

A Trainee can go work on the airline as a hostess since the trainee will have been able to know the different dietary requirements for the passengers.

One can also work on the hospital since the skill learnt at this level makes one gain alot of knowledge.

In this level one can become a manager, supervisor and since they will have learnt managerial skills at the end of the course work.

The trainee will be able to manage a kitchen, restaurant,fast food outlets with the knowledge learnt along the course.

BENEFITS OF STUDYING DIFFERENT LEVELS IN HOSPITALITY.

Helps one to have development of core competences

Preparation of advance Employment in the industry.

Helps one to gain independence in nature.

One will be able gain Independence in learning.

One will be able to gain alot of skills from the basic to the core.

Gaining social development and will have a clear mindset of what one to do .

It will enable one to gain alot of experience in the Hotel industry.

One can start his or her own business.

Become a real professional chef.

The skills learnt can make one be employed in various sectors in the hospitality industry.

It offers numerous benefits into the career.

Equips the Traineer with managerial roles in the Hotel industry.

One can become a manager and learn the business with the acquired skills and knowledge.

It gives one a clear mindset of achieving higher Goals in the career example.. going to study for further studies.