

# BRENDATT SERVICES

## Educational & Consultancy Services

P.O BOX 52142-00100, NAIROBI

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Main Office: 2<sup>nd</sup> Floor, Imani House, Juja Town, Kiambu County, Kenya  
Nairobi Office: Land Vale, Plot No.30, Along Westlands Road, Nairobi, Kenya.  
P.O Box 52142-00100, Nairobi  
Mob :(+254)731371542  
Email: [training@eeekenya.com](mailto:training@eeekenya.com): Web: [training.eeekenya.com](http://training.eeekenya.com)

## AutoCAD and Building Services Electrical Training Program

Training Program: <https://training.eeekenya.com/program/>

Training Registration: <https://training.eeekenya.com/contact/>

**A. Training time**

Customizable depending on the institution/individual.

**Duration:** 2 hours per session

**B. Venue**

Hybrid: Physical and Online through the Zoom platform\*

**C. What you also get**

1. Drawing templates to practice on (in AutoCAD). Includes already designed electrical drawings.
2. Schedule of symbols for all electrical drawings (in AutoCAD) to use in your future projects.
3. Bills of Quantities (BoQs) templates to start from (in Excel, priced and unpriced) and use in future projects. BoQs to include all sections covered during training.
4. Non-Academic, hands-on training by a practising professional.
5. Training certificate (optional).
6. Bonus Premium prerecorded videos on AutoCAD and DIALux.
7. No examinations.
8. A softcopy of the book, '[Electrical Services for Buildings: A Consultant's Guide](#)' by Eng. Benard Makaa.\*\*
9. Three different projects to work on under the guidance of the trainer. [Download sample instructions here:](#)

**D. Requirements**

1. Background in basic electrical engineering principles.
2. \*\*Laptop with installed AutoCAD and Dialux.
3. Dedication and commitment to the program.

\*\*Laptop specifications: At least 8GB RAM.

\*Training can also be in person in our offices in Juja Town or at our clients' offices in cases of corporate training by companies(for firms located in Nairobi).

**Our Delivery Style**

- Direct instructions=40%
- Assisted Practice=60%
- Classes are one on one and very personalized

E. Training Schedule

Session	Content	Detailed Content	Time(Hours)
Sessions One, Two & Three	<p>Introduction to Building Services (Electrical) and Introduction to AutoCAD:</p> <p>Drafting in AutoCAD                      Cleaning drawings                      Basic AutoCAD commands                      Advanced AutoCAD commands                      Layers                      Blocks                      Annotation                      Editing drawings</p>	<p><b>Building Services(Electrical)</b></p> <ul style="list-style-type: none"> <li>• Typical project teams</li> <li>• Project Types</li> <li>• Design Process</li> </ul> <p><b>AutoCAD:</b></p> <p><i>Module 1: Introduction</i></p> <ul style="list-style-type: none"> <li>• Introduction to AutoCAD</li> <li>• Understanding the Requirements to Use the Software</li> </ul> <p><i>Module 2: Understanding Basic User Interface</i></p> <ul style="list-style-type: none"> <li>• Navigate through the Software</li> <li>• Starting Tips</li> <li>• Set Up the Drawing Environment</li> </ul> <p><i>Module 3: Drawing in AutoCAD</i></p> <ul style="list-style-type: none"> <li>• Drawing Techniques</li> <li>• Design Specifications</li> <li>• Using Modify</li> <li>• Using Annotation</li> <li>• Layer Properties</li> <li>• Command Prompt Toolbar</li> <li>• Creating Views of Objects</li> <li>• Deleting Files</li> </ul> <p><i>Module 4: Layout</i></p> <ul style="list-style-type: none"> <li>• Understanding Physical Components</li> <li>• Design and Layout of Object</li> <li>• Intent of Design</li> </ul> <p><i>Module 5: Techniques and Documentation</i></p> <ul style="list-style-type: none"> <li>• Input Devices</li> <li>• Useful Technical Illustrations Techniques</li> <li>• Importance of Documentation</li> </ul>	6

		<ul style="list-style-type: none"> <li>• <i>Ideas for Creating Documentations</i></li> </ul> <p><i>Module 6: Creating Blocks</i></p> <ul style="list-style-type: none"> <li>• <i>Blocks: Overall Review</i></li> <li>• <i>How to Create Multiple Blocks?</i></li> <li>• <i>Using the Block Editor</i></li> <li>• <i>Changing Existing Block Attributes</i></li> </ul> <p><i>Module 7: Viewports</i></p> <ul style="list-style-type: none"> <li>• <i>Viewports: General Overview</i></li> <li>• <i>Creating Working Templates in Layouts</i></li> </ul>	
Sessions Four, Five & Six	Lighting Installations, AutoCAD & Bills of Quantities	<ul style="list-style-type: none"> <li>• <i>Design.</i></li> <li>• <i>Formulae.</i></li> <li>• <i>Specifications.</i></li> <li>• <i>Street Lighting Design</i></li> <li>• <i>Creating layouts</i></li> <li>• <i>BoQs</i></li> <li>• <i>Specifications</i></li> </ul>	6
Session Seven, Eight & Nine	Power Distribution, Design, AutoCAD & Bills of Quantities	<ul style="list-style-type: none"> <li>• <i>Load scheduling</i></li> <li>• <i>Cable Sizing,</i></li> <li>• <i>DBs, CU's,</i></li> <li>• <i>Protection, etc.</i></li> <li>• <i>Diversity factors</i></li> <li>• <i>Uninterruptible power supply.</i></li> <li>• <i>Sockets, Twin, Single. Double Poles, Three Phase Outlets.</i></li> <li>• <i>Schedule of Symbols</i></li> <li>• <i>Design Drawings, Schematics.</i></li> </ul>	6
Session Ten	Fire Alarms Systems Design, AutoCAD & Bills of Quantities	<ul style="list-style-type: none"> <li>• <i>Design Considerations,</i></li> <li>• <i>Design Drawings</i></li> <li>• <i>Bill of Quantities.</i></li> <li>• <i>Specifications</i></li> <li>• <i>Detectors, Alarm System: Sounder and beacon.</i></li> </ul>	2

		<ul style="list-style-type: none"> <li>• <i>Intergration with other systems(Audio Visual).</i></li> </ul>	
Session Eleven & Twelve	Lightning Protection & Earthing Installations & Bills of Quantities:	<ul style="list-style-type: none"> <li>• <i>Lightning Risk Assessment</i></li> <li>• <i>Lightning Protection &amp; Earthing Installations:</i></li> <li>• <i>Risk Management.</i></li> <li>• <i>Design Methods.</i></li> <li>• <i>Earthing.</i></li> <li>• <i>Surge Protective Devices.</i></li> <li>• <i>Air termination, Type Furse.</i></li> <li>• <i>Earth rods Furse.</i></li> </ul>	4
Session Thirteen	Generator Installations & Bills of Quantities	<ul style="list-style-type: none"> <li>• <i>Sizing.</i></li> <li>• <i>Design Considerations</i></li> <li>• <i>Types; Canopy.</i></li> <li>• <i>Load Profile.</i></li> <li>• <i>Altitude considerations.</i></li> <li>• <i>Future expansion considerations.</i></li> <li>• <i>External fuel tank sizing.</i></li> </ul>	2
Session Fourteen	Security Systems Installations & AutoCAD, & Bills of Quantities	<ul style="list-style-type: none"> <li>• <i>Digital CCTV systems, fixed Dome camera, Network Recorder).</i></li> <li>• <i>Electric Fences, Turnstiles.</i></li> <li>• <i>Bollards &amp; Traps.</i></li> <li>• <i>UVIS (Under Vehicle Inspection System).</i></li> </ul>	2
Session Fifteen	Access Control Installations & AutoCAD, & Bills of Quantities	<ul style="list-style-type: none"> <li>• <i>HID Proximity cards.</i></li> <li>• <i>Fingerprint reader, proximity card reader, high-quality optical sensor, magnetic door lock.</i></li> <li>• <i>Electric Door Bell.</i></li> </ul>	2
Sessions Sixteen & Seventeen	Solar Energy Systems Installations & Bills of Quantities	<ul style="list-style-type: none"> <li>• <i>Solar PV, Sizing, Viability, Cost vs Payback period.</i></li> <li>• <i>Bill of Quantities.</i></li> </ul>	4

Session Eighteen	Lifts/Elevators Installations & Bills of Quantities	<ul style="list-style-type: none"> <li>• <i>Sizing, Calculations, Considerations.</i></li> <li>• <i>Bill of Quantities</i></li> </ul>	2
Session Nineteen	Audio Visual & Public Address Systems Part 1	<ul style="list-style-type: none"> <li>• <i>Design Considerations</i></li> <li>• <i>Audio Systems</i></li> <li>• <i>Public Address Systems</i></li> <li>• <i>Visual Systems</i></li> </ul>	2
Session Twenty	Audio Visual & Public Address Systems Part 2  Introduction to Structured Cabling: Design Considerations, Drawings, BoQs	<ul style="list-style-type: none"> <li>• <i>Bill of Quantities</i></li> <li>• <i>Specifications.</i></li> </ul>	2
Session Twenty One and Twenty Two	Bills of Quantity and Value Engineering & Cost Estimating and Tendering Process	<ul style="list-style-type: none"> <li>• <i>Drafting Bills of Quantities, Value Engineering, Priced &amp; Unpriced BoQs, Cost Estimating, Tendering Process, and Tender Analysis.</i></li> </ul>	4
	Project Assessments: Three Projects	<ul style="list-style-type: none"> <li>• <i>Projects Assessments and comments</i></li> </ul>	4
<b>Total Time</b>			<b>48 Hours</b>

**Training Costs\* (Per Individual):**

- KSh.150,000 per individual for all sessions.

**Payment Details:**

**Bank Deposit:**

- Bank Name: NCBA Bank Kenya (NCBA)
- Name: BRENDATT SERVICES
- Account Number: 8092620017
- Branch: MAMA NGINA STREET BRANCH NAIROBI [250]
- Purpose: Electrical and AutoCAD Training

**M-Pesa:**

- **Pay Bill:** 880100
- **Account Number:** 8092620017

**For Corporate Clients:**

1. Discounts are available for corporate clients, for groups of at least 10 participants.
2. In-house training is available for corporate clients(in Nairobi). Classes can be hybrid-Physical and online.

**Chief Trainer:**

Eng. Benard Makaa, PE, MIEK, MAAK

**Educational Qualifications:**

- PhD. Electrical Engineering (Ongoing), Jomo Kenyatta University of Agriculture and Technology (JKUAT)
- MSc. Electrical Engineering (Power Systems), JKUAT
- BSc. Electrical and Electronic Engineering, JKUAT

**Professional Qualifications:**

- Registered & Licensed Professional Engineer, Engineers Board of Kenya (EBK)
- Registered & Licensed Electrician(Class A-1) by Energy and Petroleum Regulatory Authority(EPRA)
- Corporate Member, The Institution of Engineers of Kenya (IEK)
- Corporate Member, The Architectural Association of Kenya (AAK)