

CONTINUOUS ASSESSMENT TEST (CAT)

Web Design & Development

Total Marks: 80

Inner Circle
Electricals

Company: Inner Circle Electricals

Industry: Electrical Services & Home Electronics Repair

Location: Kesses, Uasin Gishu County

Lecturer: Dr. Eng. Cedric Okinda

Group Members

1. JOSHUA KIPRUTO – EC/2595/23
2. BRIAN IRUNGU – EC/2564/23
3. BRIAN WANYIRI – EC/2577/23
4. EMMANUEL OOKO – EC/2584/23
5. TIMOTHY MUYELELE – EC/2585/23

Contents

1 Q1. CONCEPTION & STRATEGY (20 Marks)	2
1.1 (a) Company Profile & Purpose (10 Marks)	2
1.1.1 Company Name and Industry	2
1.1.2 Company Overview	2
1.1.3 Primary Goals of the Website	2
1.2 (b) Design Thinking Process (10 Marks)	3
1.2.1 1. Target Audience — Who Are the Users and What Do They Need?	3
1.2.2 2. Empathize — Key User Pain Points	4
1.2.3 3. Define — The Main Problem the Website Solves	4
1.2.4 4. Ideate — Three Proposed Website Features	5
1.2.5 5. Prototype — How the Layout Will Be Visualized	5
1.2.6 6. Test — How Success Will Be Evaluated	5
2 Q2. ARCHITECTURE & LOGIC (30 Marks)	7
2.1 (a) Information Gathering & Branding Logic (15 Marks)	7
2.1.1 Five Specific Pieces of Information Required Before Development	7
2.1.2 Color Choice Justification	7
2.2 (b) Site Structure & Navigation Design (15 Marks)	8
2.2.1 Site Sections (Single-Page Architecture with Anchor Navigation)	8
2.2.2 Page Flow Diagram	9
2.3 Pricing List — Inner Circle Electricals	10
2.4 Advantages Over Competitors	12
3 Q3. DEVELOPMENT (25 Marks)	14
3.1 Code Features Summary	14
4 Q4. QUALITY ASSURANCE (5 Marks)	16
4.1 Method 1: Browser and Responsive Testing	16
4.2 Method 2: Usability Testing — Task-Based Testing with Target Users	17

1 Q1. CONCEPTION & STRATEGY (20 Marks)

1.1 (a) Company Profile & Purpose (10 Marks)

1.1.1 Company Name and Industry

Company Name: Inner Circle Electricals

Industry: Electrical Services, Home Electronics Repair & General Household Mounting Solutions (Residential Electrical Maintenance Industry)

1.1.2 Company Overview

Inner Circle Electricals is a student-run electrical services company based in Kesses, Uasin Gishu County, strategically located to serve the residential areas surrounding Moi University. The company specializes in a comprehensive range of household services including but not limited to:

- Installing and fixing shower heads (electric and standard)
- Repairing faulty sockets and switches
- Diagnosing electrical and electronic faults in household appliances
- Wiring inspections and safety checks
- Bulb and lighting fixture installations
- Extension cable setup and management
- **TV wall mounting** with professional brackets and cable concealment
- **LED strip light re-mounting** when factory adhesive fails
- **Basic hook and shelf mounting** for household organization
- **Custom budget study lamp wiring** — fashioning affordable desk lighting solutions from basic components for students studying on a tight budget
- General electrical safety consultations

The company is founded and operated by a team of five university students who combine their technical knowledge with affordable, reliable, and transparent service delivery. A key differentiator is the team's investment in **proper, calibrated professional tools** — from digital multimeters and voltage testers to power drills and spirit levels — ensuring every job is completed to a professional standard, not with improvised household tools.

1.1.3 Primary Goals of the Website

1. **Brand Awareness:** Introduce Inner Circle Electricals to the local community. Many students living off-campus in rented houses in Chebarus, Talai Centre, Mabs, and surrounding areas lack knowledge of reliable, affordable electricians. The website serves as a digital storefront presenting a professional image that builds credibility and trust.

2. **Lead Generation & Customer Acquisition:** The website functions as a lead-generation tool with clear calls-to-action such as “Request a Quote,” “Book a Service,” and “Call Us Now.” Visitors can fill out a service request form, converting casual visitors into paying customers.
3. **Promoting Online Sales:** A product listing section where customers can purchase basic electrical supplies (bulbs, sockets, extension cables, shower heads, fuses, LED strips) directly, creating additional revenue.
4. **Promoting Transparency:** Display a clear, detailed pricing guide for all services so customers know exact costs before engaging the company. This eliminates the fear of being overcharged.
5. **Portfolio Showcase & Social Proof:** A gallery displaying before-and-after images of completed jobs with customer testimonials and star ratings, building trust through visual evidence of quality work.
6. **Contact & Accessibility:** Prominently display all contact information — phone numbers, WhatsApp links, email, physical location, and operating hours — making it effortless to reach the team.

1.2 (b) Design Thinking Process (10 Marks)

1.2.1 1. Target Audience — Who Are the Users and What Do They Need?

Primary Users:

- **University students living off-campus** in residential houses and rental units surrounding Moi University, Kesses. Key zones include Chebarus, Talai Centre, Mabs, Mosop Estate, Ohspak, Kesses Town, and nearby estates. Aged 18–27, tech-savvy (smartphone-first), budget-conscious, and value convenience and speed.

Secondary Users:

- **Landlords and property caretakers** needing reliable electricians for routine maintenance.
- **Local small business owners** (shops, salons, food kiosks) requiring occasional electrical work.

What They Need:

- Fast, same-day electrical repair at affordable, student-friendly rates
- A trustworthy provider who will not overcharge
- Easy contact access (phone, WhatsApp, online form)
- Quality assurance through portfolios and reviews
- Budget-friendly custom solutions (e.g., wired study lamps, LED strip re-mounting)
- Professional mounting services (TV, hooks, shelves) without hiring expensive contractors
- Access to basic electrical supplies locally

1.2.2 2. Empathize — Key User Pain Points

#	Pain Point	Description
1	Lack of awareness of local electricians	Students new to the area do not know where to find a reliable electrician. Word-of-mouth is slow and unreliable. No centralized digital resource exists.
2	Fear of being overcharged	Many students have experienced technicians quoting exorbitant prices for simple tasks. Without price transparency, students feel vulnerable.
3	Difficulty reaching service providers	Local electricians lack digital presence — no website, no social media, unreliable phone availability.
4	Delayed response and unreliable scheduling	Electricians promise times but fail to show, or take days to respond. Urgent issues before exams are extremely frustrating.
5	No way to verify quality beforehand	Without reviews or portfolios, students take a leap of faith when hiring.
6	Safety concerns from DIY attempts	Students attempt repairs themselves due to cost/inconvenience, risking electrocution or fire.
7	Improvised tools used by competitors	Many local electricians use borrowed or improvised tools, leading to poor quality work, damaged fittings, and safety hazards.
8	No budget-friendly custom solutions	Students want affordable study lighting or LED ambiance but cannot find anyone willing to do small, cheap custom jobs.

1.2.3 3. Define — The Main Problem the Website Solves

“Students and residents in off-campus rental houses around Moi University lack a reliable, transparent, and accessible platform to find affordable electrical, mounting, and custom lighting services — leading to delayed repairs, safety risks from DIY attempts, overcharging by unverified technicians, and inability to access budget-friendly custom solutions.”

The Inner Circle Electricals website solves this by providing a centralized digital platform where users can:

- Discover the full range of services (electrical, mounting, custom lighting)
- View transparent pricing for every service
- See evidence of past work quality and read verified testimonials

- Request services or get quotes via an online form or direct WhatsApp/phone
- Learn about the professional tools and qualifications behind the work
- Purchase basic supplies online

1.2.4 4. Ideate — Three Proposed Website Features

Feature 1: Online Service Request Form with WhatsApp Integration

A user-friendly form where customers describe their issue, select location from a dropdown (Chebarus, Talai, Mabs, Mosop, Ohspak, etc.), upload a photo, choose preferred date/time, and submit. Data is forwarded to the team's WhatsApp Business number for real-time response.

Feature 2: Transparent Pricing Guide with Service Categories

A dedicated pricing section listing all services with price ranges organized into categories: Electrical Repairs, Installations, Diagnostics, Mounting Services, and Custom Solutions. Each entry includes description, estimated time, and price range. This directly combats the overcharging pain point.

Feature 3: Portfolio Gallery with Verified Customer Testimonials

Before-and-after photographs organized by category with customer testimonials, star ratings, names, and locations. Includes testimonials from real customers across multiple residential areas (Chebarus, Talai, Mabs, Mosop, Ohspak) to build trust with users from each locality.

1.2.5 5. Prototype — How the Layout Will Be Visualized

- **Low-Fidelity Wireframes:** Hand-drawn paper sketches mapping element placement without colors/typography.
- **Mid-Fidelity Digital Wireframes (Figma):** Collaborative digital wireframes with placeholder content and gray-box images.
- **High-Fidelity Mockup:** Full color scheme (deep blue-gray, mint green, sky blue accents), real content, Poppins/Open Sans fonts, and images.
- **Single-Page Architecture:** All content sections on one page with smooth-scroll navigation links pointing to section anchors — no separate HTML pages needed.
- **Mobile-First:** Designed for 375px, 768px, and 1024px+ breakpoints. Sidebar navigation collapses to hamburger menu on mobile.

1.2.6 6. Test — How Success Will Be Evaluated

Pre-Launch: Peer usability testing with 10–15 students; cross-browser/device testing on Chrome, Firefox, Safari, Edge across Android, iPhone, and laptops.

Post-Launch Success Metrics:

Metric	Target	Measurement Tool
Monthly visitors	100+ in 3 months	Google Analytics
Service requests	10+ per month	Form counter / WhatsApp log
Average time on site	Over 2 minutes	Google Analytics
Bounce rate	Under 60%	Google Analytics
Customer satisfaction	Over 4/5 stars	Google Forms survey
Conversion rate	Over 10%	Analytics funnel

2 Q2. ARCHITECTURE & LOGIC (30 Marks)

2.1 (a) Information Gathering & Branding Logic (15 Marks)

2.1.1 Five Specific Pieces of Information Required Before Development

#	Information Required	Justification
1	Complete Service List with Descriptions and Pricing	Detailed catalogue of every service (electrical repairs, installations, diagnostics, TV mounting, LED strip re-mounting, hook mounting, custom study lamp wiring) with descriptions and price ranges. Populates the Services and Pricing sections.
2	High-Quality Photographs of Completed Work	Before-and-after images of real jobs including TV mounts, socket repairs, study lamp builds, LED strip installations. Authenticity is key — no stock images.
3	Team Member Profiles	Names, photos, roles, 2–3 sentence bios for all five members. Humanizes the brand on the About Us section.
4	Contact Information and Service Area Details	Phone numbers, WhatsApp, email, hours (Mon–Sat 7AM–8PM), and service area list (Chebarus, Talai, Mabs, Mosop, Ohspak, Kesses Town).
5	Customer Testimonials and Tool Inventory List	Testimonials from customers across all service areas. Additionally, a list of professional tools owned (digital multimeters, clamp meters, voltage testers, cordless drills, spirit levels, wire strippers, cable testers) to showcase on the Advantages section.

2.1.2 Color Choice Justification

Element	Color	Hex Code	Justification
Primary Background	Deep Blue-Gray	#0F1724	Creates a premium, modern dark-mode aesthetic. Reduces eye strain for students browsing at night. Conveys technical sophistication and professionalism.

Element	Color	Hex Code	Justification
Primary Accent	Mint Green	#6EE7B7	Represents energy, freshness, and reliability . Associated with electrical circuitry and “go/active” signals. High contrast against dark backgrounds ensures CTAs are immediately visible.
Secondary Accent	Sky Blue	#60A5FA	Conveys trust, competence, and calm . Complements mint green in gradient buttons. Blue is universally the most trusted color in user psychology.
Card/Glass Surfaces	Semi-transparent White	rgba(255, 255, 255, 0.04)	Creates a frosted glass (glassmorphism) effect that adds depth and visual hierarchy without overwhelming the dark background. Modern and elegant.
Text	Light Gray-White	#E6EEF8	High readability against the dark background. Softer than pure white, reducing glare during extended reading. Meets WCAG AA contrast standards.
Muted Text	Medium Gray	#9CA3AF	Used for secondary information (descriptions, subtitles). Creates clear visual hierarchy between headings and body text.

2.2 (b) Site Structure & Navigation Design (15 Marks)

2.2.1 Site Sections (Single-Page Architecture with Anchor Navigation)

Since all navigation links point to sections within the same page using anchor IDs (e.g., `#services`, `#pricing`), the website uses a single-page architecture:

#	Section Name	Anchor ID	Purpose & Key Content
1	Home Hero	/ #hero	Landing section with headline, tagline, and primary CTAs (“Book a Service,” “Our Services”). First impression — communicates who, what, where instantly.
2	Services	#services	Detailed service cards organized into categories: Electrical Repairs, Installations, Diagnostics, Mounting, and Custom Solutions. Each card has icon, title, and description.

#	Section Name	Anchor ID	Purpose & Key Content
3	Advantages	#advantages	Competitive advantages over other local electricians: professional tools, transparency, speed, custom solutions, student pricing.
4	Pricing	#pricing	Transparent pricing table with all services, price ranges, estimated times, and included items.
5	Gallery	#gallery	Before/after project photos organized by category with descriptions and locations.
6	Testimonials	#testimonials	Customer reviews with names, locations, star ratings from across all service areas.
7	About Us	#about	Company story, mission, values, and individual team member profiles.
8	Contact	#contact	Service request form, phone, WhatsApp, email, hours, service area map. Primary conversion section .

2.2.2 Page Flow Diagram

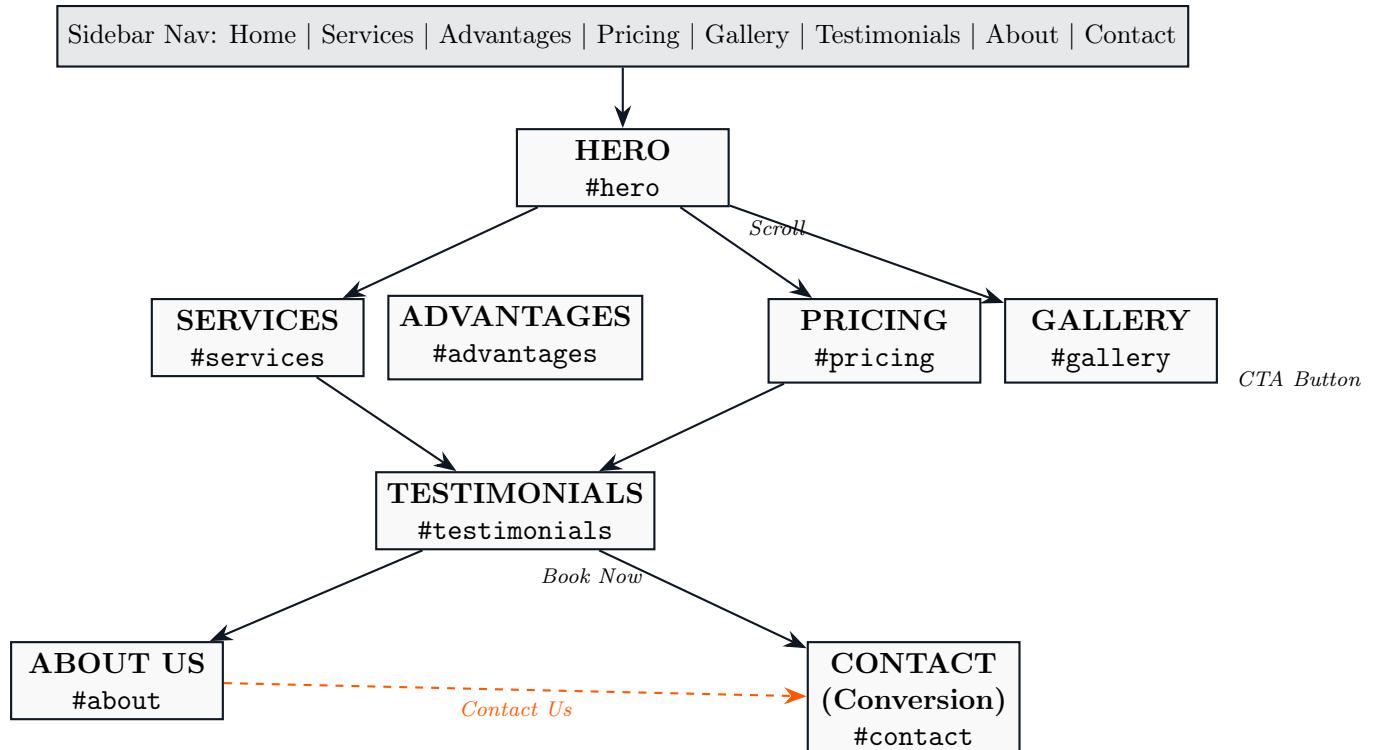


Figure 1: Single-Page Flow Diagram — Anchor Navigation to Conversion Section (#contact)

Navigation Summary: All navigation links use anchor scrolling (e.g., `href="#pricing"`) to jump to sections within the same page. Every section contains at least one CTA leading to the `#contact` conversion section.

2.3 Pricing List — Inner Circle Electricals

The following pricing table is displayed on the website in the `#pricing` section. All prices are in Kenya Shillings (KES) and represent indicative ranges. Final quotes are provided after on-site assessment.

#	Service	What is Included	Price (KES)	Est. Time
ELECTRICAL REPAIRS				
1	Socket Repair	Diagnosis, part replacement, testing	200 – 500	20–40 min
2	Switch Repair / Replacement	Remove faulty switch, install new, test	150 – 400	15–30 min
3	Circuit Breaker Reset / Repair	Diagnosis of tripping cause, reset or replace breaker	200 – 600	20–45 min
4	Extension Cable Repair	Rewire, replace damaged plugs/sockets, insulate	150 – 350	15–30 min
5	Appliance Power Cord Repair	Diagnose fault, replace cord or plug	150 – 400	15–30 min
INSTALLATIONS				
6	Shower Head Installation (Standard)	Mount, connect, test water flow	300 – 500	20–40 min
7	Shower Head Installation (Electric)	Mount, wire, connect, safety test	400 – 800	30–60 min
8	Bulb / Light Fixture Installation	Mount fixture, wire, install bulb, test	100 – 300	10–25 min
9	Extension Cable Setup (Multi-room)	Route cable, mount clips, connect	200 – 500	20–40 min
10	New Socket / Switch Installation	Cut recess, wire, mount, plaster, test	400 – 800	30–60 min
DIAGNOSTICS				

#	Service	What is Included	Price (KES)	Est. Time
11	Full Room Wiring Inspection	Multimeter testing of all circuits, safety report	500 – 1,000	45–90 min
12	Fault Finding (Single Issue)	Trace and identify cause of a specific fault	200 – 500	20–45 min
13	Appliance Diagnosis	Test appliance circuits with multimeter, advise on repair vs. replace	200 – 400	15–30 min

MOUNTING SERVICES

14	TV Wall Mounting (up to 43")	Bracket install, drill, mount TV, cable management	500 – 1,000	30–60 min
15	TV Wall Mounting (44"–65")	Heavy-duty bracket, drill, mount, conceal cables	800 – 1,500	45–90 min
16	Hook / Shelf Mounting	Drill, plug, mount hooks or shelf brackets	100 – 300	10–20 min
17	LED Strip Light Re-mounting	Clean surface, apply new adhesive/clips, reconnect	150 – 400	15–30 min
18	Curtain Rod Mounting	Drill, bracket install, mount rod	200 – 500	20–40 min

CUSTOM BUDGET SOLUTIONS

19	Custom Study Lamp (Wired)	Source affordable components, wire, assemble desk lamp	200 – 500	30–60 min
20	Budget LED Room Lighting	Plan layout, wire LED strips, connect to switch	300 – 700	30–60 min
21	Custom Extension Board	Build multi-socket board to spec, fuse, test	300 – 600	30–45 min

CONSULTATION

22	Electrical Safety Consultation	Walk-through inspection, verbal advice, written checklist	FREE – 200	15–30 min
----	--------------------------------	---	------------	-----------

#	Service	What is Included	Price (KES)	Est. Time
---	---------	------------------	----------------	-----------

Table 5: Inner Circle Electricals — Complete Pricing Guide (All prices in KES)

Notes:

- Prices are indicative ranges. Final quotes are provided after on-site assessment.
- No work begins without customer approval of the quoted price.
- Parts and materials (sockets, switches, brackets, bulbs, wire) are charged separately at cost.
- Emergency/after-hours service (after 8 PM) attracts a 50% surcharge.
- Repeat customers receive a 10% loyalty discount.

2.4 Advantages Over Competitors

The following competitive advantages are prominently displayed on the website in the #advantages section:

#	Advantage	Inner Circle Electricals	Typical Local Competitors
1	Professional Calibrated Tools	Own digital multimeters, clamp meters, voltage testers, cordless drills, spirit levels, wire strippers, cable testers — all properly calibrated	Use borrowed, improvised, or household tools (kitchen knives as screwdrivers, phone torches instead of headlamps)
2	Transparent Pricing	Full price list published on website. Quote given before work starts. No hidden charges	Prices quoted verbally, often inflated after seeing the customer is desperate or unfamiliar
3	Digital Presence & Accessibility	Professional website with online booking, WhatsApp integration, Google Maps location, portfolio gallery	No website, no social media. Found only through word-of-mouth. Phone often unreachable
4	Response Time	Respond within 30 minutes. Same-day service guaranteed within the Kesses service area	Hours or days to respond. Frequently cancel or no-show

#	Advantage	Inner Circle Electricals	Typical Local Competitors
5	Range of Services	Electrical repairs + TV mounting + LED strips + hook/shelf mounting + custom study lamps + budget lighting solutions	Only basic electrical (sockets, bulbs). Refuse small or “unusual” jobs
6	Budget Custom Solutions	Will fashion a wired study lamp for KES 200–500, re-mount LED strips, build custom extension boards — all on a student budget	Consider small custom jobs “not worth their time.” Minimum charge often KES 1,000+ regardless of job size
7	Verified Track Record	Portfolio gallery with real before/after photos. Named, located testimonials from real customers (Brian K. – Chebarus, Mercy W. – Talai, Lulu Malika – Mosop, Jamaal Abdalleh – Ohspak, etc.)	No portfolio, no reviews, no way to verify quality before hiring
8	Student-Run, Student-Priced	Founded by students, for students. Understands the “comrade budget.” Rates designed to be genuinely affordable	External contractors with no connection to student life. Rates set for employed homeowners
9	Safety Standards	Every job tested with calibrated instruments. Circuit breakers tested, earth continuity verified, polarity confirmed	“Looks fine” visual inspection only. No instrument-based verification
10	Warranty on Work	7-day warranty on all repairs. If the same issue recurs within a week, free re-service	No warranty. “Call me again” means a new full charge

3 Q3. DEVELOPMENT (25 Marks)

The following HTML5 and CSS code creates a single-page website for Inner Circle Electricals. All navigation links use anchor IDs to scroll to the relevant section. The code includes all services (including TV mounting, LED strips, hooks, custom study lamps), a pricing table, competitive advantages, and expanded testimonials (including Lulu Malika from Mosop Estate and Jamaal Abdalleh from Ohspak). No JavaScript is used.

Note: The complete HTML5 (`index.html`) and external CSS (`style.css`) source code files are submitted separately as part of the project deliverables. The code implements all features described in Q1 and Q2 including semantic HTML5 structure, CSS Grid and Flexbox layouts, glassmorphism dark theme, responsive breakpoints, anchor navigation, pricing table, and hover effects.

3.1 Code Features Summary

Requirement	Status	Implementation Details
Semantic HTML5 Tags	✓ Met	<code><header></code> , <code><nav></code> , <code><main></code> , <code><section></code> (8 sections: hero, services, advantages, pricing, gallery, testimonials, about, contact), <code><footer></code> , <code><table></code>
Navigation using Flexbox	✓ Met	.nav-list uses <code>display: flex;</code> <code>flex-direction: column</code> in sidebar. .cta-row uses <code>display: flex;</code> <code>flex-wrap: wrap</code> .
CSS Grid Layout	✓ Met	.grid uses <code>display: grid;</code> <code>grid-template-columns: repeat(3,1fr)</code> . .footer-grid and .contact-grid also use CSS Grid.
External CSS Linking	✓ Met	<code><link rel="stylesheet" href="style.css"></code> . Google Fonts linked externally via <code><link></code> .
Typography Styling	✓ Met	Poppins (headings, 800 weight) and Open Sans (body). Custom font sizes via <code>clamp()</code> , consistent weights and line-heights.
Hover Effects	✓ Met	Cards: <code>translateY(-6px)</code> + enhanced shadow. Buttons: <code>translateY(-2px)</code> + brightness filter. Nav links: background opacity. Table rows: color/background change.
Consistent Layout	✓ Met	<code>max-width: 1100px</code> container, CSS custom properties for all colors, consistent spacing, responsive at 980px and 640px.

Requirement	Status	Implementation Details
Anchor Navigation	✓ Met	All <code>href</code> attributes point to <code>#section-id</code> anchors within the same page. <code>scroll-behavior: smooth</code> enables smooth scrolling.
No JavaScript	✓ Met	All scripts removed. Pure HTML5 + CSS only.
Pricing Table	✓ Met	Full HTML <code><table></code> with 22 services across 6 categories, with hover effects and category row styling.
Expanded Services	✓ Met	TV mounting, LED strip re-mounting, hook/shelf mounting, custom study lamp wiring, budget LED room lighting, custom extension boards.
Expanded Testimonials	✓ Met	6 testimonials: Brian K. (Chebarus), Mercy W. (Talai), Kevin O. (Mabs), Lulu Malika (Mosop Estate), Adrian (Mosop Estate), Jamaal Abdalleh (Ohspak).
Competitive Advantages	Ad- ✓ Met	Dedicated <code>#advantages</code> section with 6 advantage cards highlighting calibrated tools, pricing, response time, range, warranty, and student focus.

4 Q4. QUALITY ASSURANCE (5 Marks)

4.1 Method 1: Browser and Responsive Testing

Method: Cross-browser and device compatibility testing using browser developer tools and real physical devices.

Process:

1. **Browser Developer Tools:** The website will be opened in Google Chrome and the built-in DevTools (F12, then Toggle Device Toolbar) will be used to simulate various screen sizes:

- **Smartphones:** iPhone SE (375×667), iPhone 14 (390×844), Samsung Galaxy S21 (360×800)
- **Tablets:** iPad (768×1024), iPad Pro (1024×1366)
- **Desktops:** 1280×720 , 1920×1080

At each breakpoint the tester will verify that:

- The sidebar navigation collapses correctly — full sidebar at $981\text{px}+$, icon-only bar at $641\text{--}980\text{px}$, and hidden completely below 640px (content fills the full width).
- The CSS Grid service cards reflow from 3 columns (desktop) to 2 columns (tablet) to 1 column (mobile) without overflow or horizontal scrolling.
- The pricing table scrolls horizontally within its `.pricing-table-wrap` container on narrow screens rather than breaking the page layout.
- All text remains readable, buttons remain tappable with adequate touch targets (minimum 44×44 px), and anchor scroll navigation lands correctly on each section.
- The hero section, CTA banner, footer grid, and contact grid all reflow gracefully to single-column layouts on mobile.
- The glassmorphism card effects (semi-transparent backgrounds, box shadows) render correctly without visual artifacts.

The same tests will be repeated in **Mozilla Firefox** (Responsive Design Mode), **Microsoft Edge**, and **Safari** (on macOS/iOS) to catch browser-specific rendering differences, particularly:

- Safari's handling of `-webkit-background-clip: text` for the gradient logo text.
 - Firefox's rendering of `backdrop-filter` (glassmorphism effect) and `scroll-behavior: smooth`.
 - Edge's handling of CSS custom properties (`var(--accent)`) and Grid auto-fit behaviour.
2. **Real Device Testing:** The website will be loaded on at least three physical devices owned by team members:

- An **Android smartphone** (most common device among target users) — testing touch scrolling, anchor navigation, button tap responsiveness, and load speed over mobile data (3G/4G, since Kesses area connectivity can be variable).
- An **iPhone** — testing Safari-specific rendering, smooth scroll behaviour, and font rendering.
- A **laptop** (Windows/Linux) — testing full sidebar navigation, hover effects on cards and table rows, and desktop layout.

Any issues discovered (layout breaks, overlapping elements, unresponsive buttons, broken anchor links, slow loading images) will be logged in a shared Google Sheet with columns for: Device, Browser, Screen Size, Issue Description, Screenshot, Severity (Critical/Major/Minor), and Status (Open/Fixed). All Critical and Major issues must be resolved before launch.

Why This Method Is Important: The target audience (university students around Moi University) predominantly accesses websites via smartphones on mobile data connections. If the website does not render correctly on mobile, loads slowly, or has broken navigation, users will leave immediately — resulting in a high bounce rate and zero conversions. The sidebar-to-hidden navigation transition is particularly critical to test since it involves three distinct layout states across breakpoints. Cross-browser testing ensures no student is excluded regardless of whether they use Chrome, Firefox, Safari, or Edge. Real-device testing catches issues that emulators miss, such as touch responsiveness, actual load times on cellular networks, and font rendering differences.

4.2 Method 2: Usability Testing — Task-Based Testing with Target Users

Method: A moderated, task-based usability test conducted with 8–10 representative users recruited from the target audience (students living off-campus in Chebarus, Talai Centre, Mosop Estate, Ohspak, Mabs, and Kesses Town).

Process:

1. **Recruitment:** Participants will be recruited through WhatsApp groups and word-of-mouth in target residential areas. Selection criteria:
 - Must be a student living off-campus in the defined service area.
 - Must own a smartphone (Android or iPhone).
 - Must **not** have been involved in the website's development (to avoid bias).
 - Aim for demographic diversity: mix of male/female, different residential areas, different year-of-study.
2. **Task Scenarios:** Each participant will be given the website URL on their own phone and asked to complete a series of realistic tasks **without any guidance** on how to accomplish them:
 - *Task 1:* “You have a faulty socket in your room. Find out how much Inner Circle Electricals would charge to repair it.” (Tests: navigation to #pricing, ability to find specific service in the pricing table.)

- *Task 2:* “You want to mount your 43-inch TV on the wall. Find out if Inner Circle offers this service and what it costs.” (Tests: navigation to #services and #pricing, discovery of mounting services category.)
- *Task 3:* “You want a custom study lamp wired for your desk on a budget. Find this service and check the price.” (Tests: discovery of the Custom Budget Solutions category — a unique differentiator.)
- *Task 4:* “You want to read what other students have said about Inner Circle. Find the customer reviews.” (Tests: navigation to #testimonials, readability of testimonial cards.)
- *Task 5:* “You are convinced and want to book a service. Find the contact information and the service request section.” (Tests: navigation to #contact, visibility of phone/WhatsApp/email details, CTA button effectiveness.)
- *Task 6:* “Find out what tools Inner Circle uses and why they claim to be better than other local electricians.” (Tests: navigation to #advantages and #about, comprehension of competitive differentiators.)

3. **Observation and Data Collection:** A team member will observe each participant (in person, looking over their shoulder, or via a screen-sharing video call) and record the following for each task:

Metric	Format	What It Tells Us
Task Completed	Yes / No	Whether the user can find the information at all
Time Taken	Seconds	How intuitive the navigation and layout are
Wrong Clicks / Detours	Count	Whether labels and section organization are clear
Points of Confusion	Notes	Specific UI elements that cause hesitation
Verbal Comments	Comments	Spontaneous user reactions (“Oh, I see it now,” “Where is the pricing?”)
Difficulty Rating	1–5 Likert	User’s self-reported difficulty per task

4. **Post-Test Questionnaire:** After completing all tasks, each participant fills out a short Google Forms questionnaire:

- Overall ease of use (1–5 scale)
- Visual appeal and design quality (1–5 scale)
- Trustworthiness of the website (1–5 scale)
- Likelihood of using Inner Circle Electricals based on the website (1–5 scale)
- “What did you like most about the website?” (open-ended)
- “What confused you or could be improved?” (open-ended)
- “Would you recommend this website to a friend who needs electrical work?” (Yes/No + reason)

5. Analysis and Iteration: All data will be compiled into a usability report. The following decision rules apply:

- If more than **20% of participants fail** a specific task → the relevant section or navigation element will be **redesigned** before launch.
- If average difficulty rating exceeds **3/5** on any task → the section's labeling, layout, or prominence will be improved.
- If average **overall ease-of-use is below 4/5** → a comprehensive layout review will be conducted with the full team.
- **Common complaints** (mentioned by 3+ participants) will be prioritized and addressed immediately.
- Specific positive feedback (e.g., “I love the pricing table,” “The testimonials are convincing”) will be documented as validated design decisions.

After fixes are implemented, a second round of testing with 3–5 **different** participants will be conducted to verify that the changes resolved the identified issues without introducing new problems.

Why This Method Is Important: Usability testing with real users from the target demographic is irreplaceable because it reveals practical problems that developers are blind to. The website development team, having built every section, knows exactly where everything is — but a first-time visitor from Chebarus or Ohspak does not. Observing actual students navigate the site on their own phones, in their own rental rooms, under real conditions (possibly with slow data, small screens, and distractions) provides ground-truth evidence of whether the website achieves its goals. If a student cannot find the pricing for TV mounting within 30 seconds, no amount of beautiful CSS will generate a service request. Task-based testing directly measures the website’s ability to convert visitors into customers — the ultimate success metric for Inner Circle Electricals.

Furthermore, testing across multiple residential areas (Chebarus, Talai/Mosop, Ohspak, Mabs, Kesses) ensures that the website resonates with users from each locality. When a participant from Ohspak sees Jamaal Abdalleh’s testimonial from their own neighborhood, and a participant from Mosop sees Lulu Malika’s review, the social proof effect can be directly observed and validated during testing.