



## Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

Tel: +27 12 004 8389 · Mobile: +27 65 077 6310

Email: [apply@aaticd.co.za](mailto:apply@aaticd.co.za) · Website: [www.aaticd.co.za](http://www.aaticd.co.za)

### COURSE BROCHURE

# Basic Gas Welding Brazing And Cutting For Electrical Environments Training

Physical Planning and Construction / Electrical Infrastructure Construction

Unit Standard 114616 · NQF Level 2 · 8 Credits · 5 Days

## COURSE OVERVIEW

This course equips learners with the knowledge and practical skills to safely perform basic gas welding, brazing, and cutting in electrical environments. It covers the principles of oxy-fuel gas processes, equipment setup and operation, and safety precautions specific to electrical contexts. By the end, participants will be able to apply these techniques while minimizing risks to personnel and equipment.

Category	Physical Planning and Construction
Subfield	Electrical Infrastructure Construction
Unit Standard	114616
Accreditation	SAQA Accredited · NQF Level 2 · 8 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

## LEARNING OUTCOMES

- Demonstrate safe work practices when setting up and using gas welding, brazing, and cutting equipment in electrical environments.
- Apply the principles of oxy-fuel gas processes to select appropriate equipment and consumables for specific tasks.
- Perform basic gas welding, brazing, and cutting operations on mild steel and copper components.
- Analyze potential hazards associated with gas processes in electrical settings and implement control measures.
- Evaluate the quality of welded, brazed, and cut joints against industry standards.
- Comply with relevant health, safety, and environmental regulations during gas welding operations.

## WHO SHOULD ATTEND

- This course is designed for electricians, maintenance technicians, and artisans who need to perform gas welding, brazing, or cutting tasks in or near electrical installations.
- It is also suitable for supervisors responsible for overseeing such work in electrical environments.

## COURSE OUTLINE

### Day 1: Fundamentals of Gas Welding, Brazing, and Cutting

- Introduction to gas welding, brazing, and cutting processes.
- Properties of fuel gases: oxygen and acetylene.
- Oxy-acetylene equipment: cylinders, regulators, hoses, torches, and safety devices.
- Personal protective equipment (PPE) and workshop safety.
- Setting up and leak testing equipment.
- Flame types: neutral, oxidising, and carburising.
- Lighting, adjusting, and extinguishing the torch.
- Safe storage and handling of gas cylinders.

### Day 2: Welding Techniques and Joint Preparation

- Welding positions: flat, horizontal, vertical, and overhead.
- Joint types: butt, lap, T-joint, and corner.
- Edge preparation and fit-up.
- Running beads and controlling weld pool.
- Tack welding techniques.
- Welding parameters: filler rod size, flame adjustment, travel speed.
- Common defects: porosity, slag inclusion, undercut, and distortion.
- Inspection of welds for quality.

### Day 3: Brazing and Soldering Techniques

- Principles of brazing vs. welding vs. soldering.
- Filler metals: brass, bronze, silver alloys.
- Fluxes: purpose, types, and application.
- Joint design and clearance for brazing.
- Heating methods: torch positioning and temperature control.
- Brazing copper to copper and copper to steel.
- Capillary action and filler flow.
- Cleaning and post-braze inspection.

### Day 4: Gas Cutting and Gouging

- Oxy-fuel cutting process and chemistry.
- Cutting torch components and nozzle selection.
- Setting cutting pressures and preheat flames.
- Piercing and starting cuts.
- Straight line and bevel cutting.
- Cutting curves and shapes.
- Gouging: principles and techniques.
- Safety during cutting: fire prevention and ventilation.

### Day 5: Electrical Environment Safety and Practical Integration

- Electrical safety: shock risks, earthing, and bonding.
- Working near live equipment: precautions and permits.
- Fire prevention and extinguishing methods.
- Hot work permits and procedures.
- Simulated tasks: welding on electrical enclosures, brazing busbars, cutting cable trays.

- Quality control and defect rectification.
- Final practical assessment.
- Course review and certification requirements.

## ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **8 NQF credits** at **NQF Level 2**.

## PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 23,000.00	<b>R 23,000.00</b>
1	In-House	R 29,900.00	<b>R 29,900.00</b>
1	On-Campus (Pretoria)	R 34,500.00	<b>R 34,500.00</b>

## UPCOMING SESSIONS

Start	End	Method	Venue
22 Jun 2026	26 Jun 2026	On-Campus	Mombasa, Kenya
22 Jun 2026	26 Jun 2026	On-Campus	Mbabane, Eswatini
22 Jun 2026	26 Jun 2026	On-Campus	Nairobi, Kenya
22 Jun 2026	26 Jun 2026	On-Campus	Maseru, Lesotho
22 Jun 2026	26 Jun 2026	In-House	–
22 Jun 2026	26 Jun 2026	On-Campus	Windhoek, Namibia
29 Jun 2026	03 Jul 2026	On-Campus	Maseru, Lesotho
29 Jun 2026	03 Jul 2026	On-Campus	Nairobi, Kenya

Contact us if no suitable date is listed – on-demand sessions can be arranged for groups.

## HOW TO GET A QUOTE OR APPLY

1. **Get an instant quotation online:** visit [www.aaticd.co.za](http://www.aaticd.co.za), open the page for this course (Unit Standard 114616) and click **Get A Quote / Apply**. Select your training method and number of delegates – your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to [apply@aaticd.co.za](mailto:apply@aaticd.co.za) – our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call **+27 12 004 8389** or WhatsApp **+27 65 077 6310** and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically – the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

### Accredited Africa Training Institute for Capacity Development

Unit F0409, Hatfield Plaza, 1122 Burnett St, Hatfield 0028, Pretoria, Gauteng, South Africa  
Tel: +27 12 004 8389 · WhatsApp: +27 65 077 6310 · [apply@aaticd.co.za](mailto:apply@aaticd.co.za) · [www.aaticd.co.za](http://www.aaticd.co.za)