



Accredited Africa Training Institute for Capacity Development

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

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COURSE BROCHURE

Build An Advanced Rail Turnout Training

Physical Planning and Construction / Civil Engineering Construction

Unit Standard 119985 · NQF Level 3 · 6 Credits · 3 Days

COURSE OVERVIEW

This course equips learners with advanced skills to construct, maintain, and inspect rail turnouts in compliance with South African railway standards. It focuses on safety protocols, precision alignment, and quality assurance to ensure reliable rail infrastructure.

Category	Physical Planning and Construction
Subfield	Civil Engineering Construction
Unit Standard	119985
Accreditation	SAQA Accredited · NQF Level 3 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply advanced principles of turnout geometry and alignment to construct rail turnouts accurately.
- Analyze turnout defects and implement corrective measures using specialized tools and techniques.
- Evaluate compliance with safety regulations and industry standards during turnout installation.
- Design a maintenance schedule for rail turnouts to optimize service life and reliability.
- Demonstrate proficiency in using gauges and measuring instruments for turnout verification.
- Implement procedures for safe handling of materials and equipment in turnout construction.

WHO SHOULD ATTEND

- Experienced rail technicians, track supervisors, and engineers responsible for building and maintaining rail turnouts in heavy-haul or passenger rail environments.

COURSE OUTLINE

Day 1: Foundational Principles of Rail Turnouts

- Overview of railway track infrastructure and turnouts.
- Components: switch rails, stock rails, frog, guard rails, and crossings.
- Types of turnouts: simple, double, and curved turnouts.
- Geometric design: frog angle, switch length, and lead distance.
- Turnout numbering and classification.
- Reading technical drawings and layout plans.
- Safety regulations and hazard identification.

Day 2: Advanced Design and Installation Techniques

- Advanced geometry: turnout curvature, divergence, and speed potential.
- Wheel-rail interaction dynamics at turnouts.
- Material selection: rail profiles, fastenings, and sleepers.
- Installation sequence: preparation, assembly, and ballasting.
- Tolerances and alignment checks.
- Maintenance regimes: lubrication, grinding, and component replacement.
- Case studies: turnout failures and corrective actions.

Day 3: Practical Integration and Quality Assurance

- Practical inspection: measuring gauge, wear, and alignment.
- Defect identification: surface irregularities, loose fastenings, and frog wear.
- Remedial actions: adjustment, replacement, and emergency repairs.
- Quality assurance: documentation, reporting, and compliance.
- Practical exercise: assembling a scale turnout model.
- Team-based problem-solving scenarios.
- Assessment and feedback session.

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 **6 NQF credits** at **NQF Level 3**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 17,900.00	R 17,900.00
1	In-House	R 23,300.00	R 23,300.00
1	On-Campus (Pretoria)	R 26,800.00	R 26,800.00

UPCOMING SESSIONS

Start	End	Method	Venue
03 Aug 2026	05 Aug 2026	On-Campus	Cape Town, South Africa
03 Aug 2026	05 Aug 2026	On-Campus	Lagos, Nigeria
04 Aug 2026	06 Aug 2026	On-Campus	Dubai, UAE
04 Aug 2026	06 Aug 2026	On-Campus	Johannesburg, South Africa
05 Aug 2026	07 Aug 2026	On-Campus	Pretoria, South Africa
05 Aug 2026	07 Aug 2026	On-Campus	Mauritius
10 Aug 2026	12 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	12 Aug 2026	On-Campus	Dubai, UAE

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, open the page for this course (Unit Standard 119985) 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 – 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.

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