



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 · Website: www.aaticd.co.za

COURSE BROCHURE

Structural Steel Detail Drawing For Light Industrial Buildings Training

Physical Planning and Construction / Building Construction

Unit Standard 114195 · NQF Level 5 · 25 Credits · 22 Days

COURSE OVERVIEW

This course equips learners with the skills to produce detailed structural steel detail drawings specifically for light industrial buildings. Participants will gain competence in interpreting architectural and engineering sketches, applying standard detailing conventions, and creating accurate fabrication and erection drawings. The training ensures compliance with South African building regulations and industry standards.

Category	Physical Planning and Construction
Subfield	Building Construction
Unit Standard	114195
Accreditation	SAQA Accredited · NQF Level 5 · 25 Credits
Duration	22 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Interpret architectural and structural engineering sketches to extract steelwork requirements for light industrial buildings.
- Apply standard detailing conventions, symbols, and abbreviations in accordance with SANS 10163 and relevant codes.
- Prepare detailed fabrication drawings for structural steel members, including beams, columns, bracing, and connections.
- Generate erection drawings showing assembly sequences, bolt schedules, and welding symbols.
- Demonstrate the use of computer-aided design (CAD) software to produce accurate 2D and 3D steel detail drawings.
- Evaluate drawings for dimensional accuracy, material specifications, and compliance with project requirements.

WHO SHOULD ATTEND

- This course is designed for drafters, detailers, and technicians in the steel construction industry, as well as engineering graduates seeking practical detailing skills.
- It is also suitable for site supervisors and project managers who need to interpret structural steel drawings.

COURSE OUTLINE

Day 1: Introduction to Structural Steel Detailing

- Overview of light industrial buildings
- Roles and responsibilities of a structural steel detailer
- Introduction to steel sections: I-beams, channels, angles, hollow sections
- Basic building terminology: column, beam, brace, girt, purlin
- Safety considerations in detailing

Day 2: Reading Architectural and Structural Drawings

- Architectural vs structural drawings
- Grid lines, column lines, and setting out
- Dimensioning standards (SANS 10111)
- Common symbols for welds, bolts, and surface finishes
- Abbreviations in steel detailing

Day 3: Steel Material Specifications and Properties

- Steel grades: S235, S355, S450
- Mechanical properties and their significance
- Material standards (SANS 50025, EN 10025)
- Corrosion protection: galvanising, painting, weathering steel
- Handling and storage of steel

Day 4: Connection Types and Fasteners

- Bolted connections: bolts, nuts, washers, tension control bolts
- Welded connections: fillet welds, butt welds, plug welds
- Weld symbols per SANS 10163
- Standard connection details: beam-to-column, column base plate
- Introduction to connection design principles

Day 5: Introduction to CAD for Steel Detailing

- CAD software overview (AutoCAD or similar)
- Drawing setup: units, limits, layers, linetypes
- Basic drawing commands: line, circle, rectangle, polyline
- Editing commands: trim, extend, mirror, copy, move
- Saving and plotting basics

Day 6: Detailing Columns and Base Plates

- Column types: UC, UB, hollow sections
- Base plate details: dimensions, bolt holes, stiffeners
- Anchor bolt setting out and templates
- Column splice details
- Dimensioning and annotation

Day 7: Detailing Beams and Girders

- Beam types: UB, PFC, beams with end plates
- Beam-to-column connections: fin plate, end plate, seated
- Beam splices and stiffeners
- Coping and notching for clearance

- Bolt group layout and weld lengths

Day 8: Detailing Bracing Systems

- Types of bracing: X-bracing, V-bracing, K-bracing
- Brace member selection: angles, rods, cables
- Brace connection details: gusset plates, cleats
- Tensioning and adjustment details
- Portal frame bracing

Day 9: Detailing Purlins, Girts, and Cladding Supports

- Purlin types: Z, C, and channel sections
- Purlin connection to rafters: cleats, brackets
- Girt connection to columns
- Sheeting rails and cladding supports
- Setting out for roofing and wall cladding

Day 10: Detailing Stairs, Platforms, and Handrails

- Stair types: straight, dogleg, spiral
- Stringer design and connection
- Tread and riser dimensions
- Handrail and balustrade details
- Safety requirements per SANS 10400

Day 11: Detailing Crane Girders and Runway Beams

- Overhead crane types: top running, under running
- Crane girder sections and stiffeners
- Rail fixing details: clips, pads, expansion joints
- Crane stops and buffer details
- Column bracket connections

Day 12: Detailing Mezzanine Floors and Platforms

- Mezzanine floor types: steel deck, precast planks
- Beam layout for floor loads
- Composite action with shear studs
- Edge beams and curbs
- Fire protection: intumescent paint, boarding

Day 13: Detailing Canopies and Shelters

- Canopy types: flat, pitched, curved
- Column and tie-back connections
- Roof sheeting and flashing
- Gutter and downpipe sizing
- Integration with existing building

Day 14: Introduction to 3D Modelling for Steel Detailing

- 3D modelling software overview (Tekla Structures or similar)
- Creating 3D parts: profiles, plates, bolts
- Assembly and positioning
- View creation: plans, sections, elevations
- Clash detection basics

Day 15: Advanced 3D Modelling and Detailing

- Modelling connections: end plates, stiffeners, gussets
- Adding weld beads and bolt groups
- Drawing extraction: single parts, assemblies, general arrangement
- Bill of materials and material take-off
- Model checking and reporting

Day 16: Drawing Production and Standards

- Fabrication drawing layout: views, dimensions, notes
- Title block information: project, scale, date, revision
- Revision control and change management
- Quality checks: dimension accuracy, clarity
- Standards: SANS 10111, SANS 10163, SAQA requirements

Day 17: Bill of Materials and Material Take-Off

- BOM components: profiles, plates, bolts, welds
- Calculating lengths, weights, and surface areas
- Ordering lengths vs cutting lengths
- Material optimisation: nesting, standard lengths
- BOM formatting and submission

Day 18: Quality Control and Drawing Review

- Common detailing errors: dimension mismatches, missing items
- Checklist for drawing review
- Interdisciplinary coordination: architectural, mechanical
- Revising and updating drawings
- Document control and filing

Day 19: Project Management for Detailers

- Detailing work breakdown structure
- Scheduling and milestone tracking
- Communication with engineers, fabricators, erectors
- Change order process and impact
- As-built documentation

Day 20: Integration and Final Assessment

- Capstone project: detail a light industrial building frame
- Project presentation and peer review
- Final assessment: written and practical
- Course wrap-up and certification
- Career pathways and continuous learning

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 **25 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 69,900.00	R 69,900.00
1	In-House	R 90,900.00	R 90,900.00
1	On-Campus (Pretoria)	R 104,900.00	R 104,900.00

UPCOMING SESSIONS

Start	End	Method	Venue
03 Aug 2026	01 Sep 2026	On-Campus	Dubai, UAE
04 Aug 2026	02 Sep 2026	On-Campus	Pretoria, South Africa
04 Aug 2026	02 Sep 2026	On-Campus	Lagos, Nigeria
05 Aug 2026	03 Sep 2026	On-Campus	Johannesburg, South Africa
06 Aug 2026	04 Sep 2026	On-Campus	Mauritius
07 Aug 2026	07 Sep 2026	On-Campus	Cape Town, South Africa
10 Aug 2026	08 Sep 2026	On-Campus	Pretoria, South Africa
11 Aug 2026	09 Sep 2026	On-Campus	Abu Dhabi, 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 114195) 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.

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 · WhatsApp: +27 65 077 6310 · apply@aaticd.co.za · www.aaticd.co.za