



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

Pulping Chemical Recovery Process And Variables Training

Manufacturing, Engineering and Technology / Manufacturing and Assembly

Unit Standard 114242 · NQF Level 4 · 10 Credits · 7 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to understand and manage the chemical recovery process in pulp and paper manufacturing. Participants will learn to monitor and control key variables to optimize recovery efficiency, reduce environmental impact, and ensure compliance with industry standards. The training is designed to enhance operational performance and safety in chemical recovery operations.

Category	Manufacturing, Engineering and Technology
Subfield	Manufacturing and Assembly
Unit Standard	114242
Accreditation	SAQA Accredited · NQF Level 4 · 10 Credits
Duration	7 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply the principles of the pulping chemical recovery process to optimize recovery efficiency.
- Analyze key process variables such as temperature, pressure, and chemical concentrations to identify deviations.
- Evaluate the impact of variable changes on recovery system performance and product quality.
- Demonstrate the ability to monitor and adjust recovery process parameters using standard operating procedures.
- Implement corrective actions for common recovery process issues to minimize downtime and waste.
- Design a basic monitoring plan for chemical recovery variables to ensure consistent operation.

WHO SHOULD ATTEND

- This course is ideal for process operators, shift supervisors, and technical staff working in pulp and paper mills who are involved in or responsible for chemical recovery operations.
- It is also suitable for engineers and managers seeking to deepen their understanding of recovery process variables.

COURSE OUTLINE

Day 1: Introduction to Pulping Chemical Recovery

- Overview of pulping processes and the need for chemical recovery
- The kraft recovery cycle: evaporation, combustion, causticizing, and lime kiln
- Black liquor: composition, properties, and handling
- Safety and environmental aspects of recovery operations
- Introduction to recovery boiler and its role
- Basic terminology and process variables

Day 2: Black Liquor Evaporation and Concentration

- Principles of evaporation and heat transfer
- Multiple-effect evaporator configurations and operation
- Key variables: temperature, pressure, flow rate, solids concentration
- Scaling, fouling, and cleaning strategies
- Steam economy and energy optimization
- Safety during evaporator operation

Day 3: Recovery Boiler Combustion and Heat Recovery

- Recovery boiler design and components
- Combustion of black liquor: reactions, temperature, and air distribution
- Key variables: liquor firing rate, air flow, bed temperature, draft
- Steam generation and superheater operation
- Smelt formation and handling
- Boiler tube leaks and corrosion prevention

Day 4: Causticizing and Lime Mud Reburning

- Green liquor clarification and dregs removal
- Causticizing: slaking, causticizing reactions, and white liquor production
- Key variables: temperature, lime-to-liquor ratio, residence time
- Lime mud washing and filtration
- Lime kiln operation: drying, calcination, and cooling
- Energy efficiency and emissions in lime kilns

Day 5: Process Control and Optimization of Recovery Cycle

- Control loops for evaporators, recovery boiler, causticizing, and lime kiln
- Variable interactions and process dynamics
- Optimization of chemical recovery: reducing losses, improving yield
- Troubleshooting: black liquor quality, scaling, boiler upsets
- Use of process data and key performance indicators
- Energy and chemical balances in the recovery cycle

Day 6: Environmental Compliance and Safety in Recovery Operations

- Air emissions: TRS, SO₂, NO_x, particulate matter
- Water effluent: BOD, COD, toxicity, and treatment
- Solid waste management: dregs, grits, lime mud
- Safety: smelt-water explosions, chemical burns, confined spaces
- Personal protective equipment and safe work practices

- Emergency shutdown and spill response

Day 7: Integrated Recovery System Management and Case Studies

- Review of the complete recovery cycle and variable interactions
- Case studies: efficiency improvements, incident analysis
- Best practices for recovery system management
- Assessment preparation: key concepts and calculations
- Group exercise: optimizing a recovery system given constraints
- Course evaluation and feedback

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 **10 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 28,200.00	R 28,200.00
1	In-House	R 36,700.00	R 36,700.00
1	On-Campus (Pretoria)	R 42,300.00	R 42,300.00

UPCOMING SESSIONS

Start	End	Method	Venue
07 Aug 2026	17 Aug 2026	On-Campus	Pretoria, South Africa
07 Aug 2026	17 Aug 2026	On-Campus	Lagos, Nigeria
10 Aug 2026	18 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	18 Aug 2026	On-Campus	Mauritius
11 Aug 2026	19 Aug 2026	On-Campus	Cape Town, South Africa
12 Aug 2026	20 Aug 2026	On-Campus	Dubai, UAE
13 Aug 2026	21 Aug 2026	On-Campus	Pretoria, South Africa
14 Aug 2026	24 Aug 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 114242) 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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