



ENGINEERING AND TECHNICAL TRAINING

Process Control Loop Tuning and Optimisation

3 day course

Classroom, online or in-house

Course overview

Most plants have loops running in manual, cycling, or tuned once at commissioning and never revisited, and the cost appears as variable product quality rather than as a fault anybody logs. This three day course covers finding and fixing them without capital spend. Delegates work through diagnosing the causes of poor loop performance, PID theory and the main tuning methods, and the contribution the valve and the instrument make to behaviour that is usually blamed on the controller. Cascade, ratio and feedforward strategies are applied where they genuinely help, alongside an introduction to advanced regulatory control. The course closes on loop performance monitoring, because a tuned plant drifts back within a year unless somebody is watching.

What you will learn

- Diagnose common causes of poor control loop performance
- Apply PID tuning methods to improve loop stability and response
- Evaluate control valve and instrument contributions to loop performance
- Apply cascade, ratio and feedforward control strategies where appropriate
- Use loop performance monitoring tools to sustain improvements
- Identify process interaction between loops and detune to stop them fighting
- Rank loops by economic benefit so tuning effort follows the money

Who should attend

- Process control engineers
- Instrumentation engineers
- Process engineers
- Plant optimisation specialists
- Control room supervisors

Course outline

- 01 Diagnosing poor control loop performance
- 02 Process characterisation and model identification
- 03 PID control theory and tuning methods
- 04 Valve and instrument contributions to loop behaviour
- 05 Cascade, ratio and feedforward control strategies
- 06 Loop interaction and detuning
- 07 Advanced regulatory control concepts
- 08 Ranking loops by benefit and sustaining performance through monitoring

Upcoming dates

Dates	Venue	Format	Fee per delegate
21 to 23 September 2026	Cape Town, South Africa	Classroom	R14,950
23 to 25 November 2026	Pretoria, South Africa	Classroom	R14,950
16 to 18 December 2026	Lagos, Nigeria	Classroom	USD 995
8 to 10 February 2027	Online	Online	R6,500



Fees and how to register

This 3 day course is **R6,500** per delegate online, **R14,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 995** in the classroom elsewhere in Africa. In-house training is quotation on request. Book 2 or more delegates on this course and save 10%.

To register or request an in-house proposal, visit www.afrisciencegroup.com, email info@afriscience.co.za, or WhatsApp us on **+27 63 479 1136**.

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