



ENGINEERING AND TECHNICAL TRAINING

Process Engineering Essentials

5 day course

Classroom, online or in-house

Course overview

A grounding in the unit operations and calculations that underpin any continuous process plant. Delegates work through mass and energy balances, fluid flow and pressure drop, heat transfer and exchanger duty, separation processes, and the reading of process flow and piping and instrumentation diagrams. The emphasis is on the arithmetic an engineer needs at the plant rather than on design theory, so delegates practise on worked plant data throughout and finish able to check whether a unit is performing as it should. Suitable for engineers moving into a process role and for technical staff supporting process operations without a chemical engineering background.

What you will learn

- Construct mass and energy balances across a unit and across a plant
- Calculate fluid flow, pressure drop and pump duty for a given service
- Assess heat exchanger performance against design duty
- Describe the common separation processes and the variables that control them
- Read and interpret process flow diagrams and piping and instrumentation diagrams
- Determine whether a unit is operating within its design envelope

Who should attend

- Process, production and plant engineers
- Operations and technical support staff
- Maintenance engineers working on process plant
- Graduate engineers entering a process role
- Technical managers overseeing process operations

Course outline

- 01 Process plant fundamentals and the unit operations concept
- 02 Mass balances across a unit and across the plant
- 03 Energy balances and thermal duty
- 04 Fluid flow, pressure drop, pumps and compressors
- 05 Heat transfer and exchanger performance assessment
- 06 Separation processes and their controlling variables
- 07 Process flow diagrams and piping and instrumentation diagrams
- 08 Checking a unit against its design envelope

Upcoming dates

Dates	Venue	Format	Fee per delegate
2 to 6 November 2026	Maputo, Mozambique	Classroom	USD 1,325
7 to 11 December 2026	Lusaka, Zambia	Classroom	USD 1,325
15 to 19 February 2027	Online	Online	R8,500
8 to 12 March 2027	Dar es Salaam, Tanzania	Classroom	USD 1,325

Fees and how to register

This 5 day course is **R8,500** per delegate online, **R19,950** in the classroom in South Africa, Botswana, Namibia, Lesotho and Eswatini, and **USD 1,325** 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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