



PROCESS AND CHEMICAL ENGINEERING

Applied Process Design: Equipment Sizing and Selection

5 day course

Classroom, online or in-house

Course overview

This course covers sizing and selecting the equipment a process is built from, at the level an engineer needs to specify a duty, check a vendor proposal and troubleshoot a unit that is not performing. Delegates work through separators and vessels, pumps and compressors, heat exchangers, columns and fired equipment, taking each from the process duty through to the specification. Design margins receive attention, since equipment specified with generous margin frequently performs worse at normal rates than equipment sized correctly. The course closes on interrogating a vendor datasheet and on the rating calculation that determines whether existing equipment can handle a proposed change.

What you will learn

- Translate a process duty into an equipment specification
- Size separators, vessels, pumps, compressors and heat exchangers
- Select column internals and fired equipment against duty
- Apply design margins without degrading normal rate performance
- Interrogate a vendor datasheet against the stated duty
- Rate existing equipment against a proposed change in operation
- Recognise the sizing errors that produce chronic operating problems

Who should attend

- Process and project engineers
- Plant engineers assessing debottlenecking options
- Technical staff reviewing vendor proposals
- Operations engineers troubleshooting equipment
- Graduate engineers in design roles

Course outline

- 01 From process duty to equipment specification
- 02 Separators and pressure vessels
- 03 Pump and compressor sizing
- 04 Heat exchanger sizing and rating
- 05 Columns and internals
- 06 Fired equipment
- 07 Design margin and its cost at normal rates
- 08 Vendor datasheets and rating an existing unit

Upcoming dates

Dates	Venue	Format	Fee per delegate
2 to 6 November 2026	Port Louis, Mauritius	Classroom	USD 1,325
14 to 18 December 2026	Nairobi, Kenya	Classroom	USD 1,325
15 to 19 March 2027	Online	Online	R8,500

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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