



PROCESS AND CHEMICAL ENGINEERING

Process Simulation and Modelling

5 day course

Classroom, online or in-house

Course overview

A process simulation is only as good as the thermodynamic package behind it and the data used to tune it, and a confident but wrong model is worse than no model at all. This course covers building trustworthy ones. Delegates work through model construction, unit operation models and their assumptions, and thermodynamic package selection as the decision that most affects the answer. Convergence problems and how to resolve them are covered practically. Model validation against plant data receives full attention, including reconciling data that does not close. The course closes on using models for debottlenecking, case studies and operator decision support.

What you will learn

- Build a process model and select appropriate unit operation models
- Choose a thermodynamic package suited to the system
- Diagnose and resolve convergence problems
- Validate a model against reconciled plant data
- Recognise where a model's assumptions break down
- Use models for debottlenecking and case studies
- Present model results with their uncertainty stated

Who should attend

- Process and technical services engineers
- Design and project engineers
- Optimisation and planning engineers
- Graduate engineers building models
- Operations engineers using simulation output

Course outline

- 01 What makes a simulation trustworthy
- 02 Model construction and unit operations
- 03 Thermodynamic package selection
- 04 Physical property data and its limits
- 05 Convergence problems
- 06 Data reconciliation and validation
- 07 Debottlenecking and case studies
- 08 Presenting results with uncertainty

Upcoming dates

Dates	Venue	Format	Fee per delegate
28 December 2026 to 1 January 2027	Cape Town, South Africa	Classroom	R19,950
1 to 5 February 2027	Durban, South Africa	Classroom	R19,950
8 to 12 February 2027	Maseru, Lesotho	Classroom	R19,950
15 to 19 February 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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