



LABORATORY EXCELLENCE, SAFETY AND ACCREDITATION

Design of Experiments for Method Validation

3 day course

Classroom, online or in-house

Course overview

Changing one factor at a time is slow, misses interactions and often produces a method that works only in the hands of the person who developed it. This course applies designed experiments to method development and validation. Delegates work through factor selection and screening designs, full and fractional factorial designs, and the interpretation of main effects and interactions from real data. Robustness testing is treated as a designed experiment rather than a checklist, which is what the standards intend. Response surface methods are introduced for optimisation, and the course closes on the sample size and replication decisions that determine whether an experiment can detect the effect it was run to find.

What you will learn

- Select factors and levels for a screening design
- Design and analyse full and fractional factorial experiments
- Interpret main effects and interactions from real method data
- Run robustness testing as a designed experiment
- Apply response surface methods to optimisation
- Decide replication and sample size so an effect can actually be detected
- Report a designed experiment so the conclusion is reproducible

Who should attend

- Method development and validation scientists
- Analytical chemists and laboratory researchers
- Quality and technical managers
- Process and product development staff
- Statisticians supporting laboratory work

Course outline

- 01 Why one factor at a time fails
- 02 Factor selection and screening designs
- 03 Full factorial designs
- 04 Fractional factorial designs and confounding
- 05 Main effects and interactions
- 06 Robustness testing as a designed experiment
- 07 Response surface methods and optimisation
- 08 Replication, power and reporting

Upcoming dates

Dates	Venue	Format	Fee per delegate
18 to 20 November 2026	Online	Online	R6,500
30 November to 2 December 2026	Lusaka, Zambia	Classroom	USD 995
7 to 9 December 2026	Casablanca, Morocco	Classroom	USD 995
17 to 19 February 2027	Windhoek, Namibia	Classroom	R14,950



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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