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CEMENT MANUFACTURING

Advanced Cement Technology: Chemistry, Manufacturing and Testing

DURATION	CONTACT HOURS	LEVEL	FEE PER DELEGATE
5 days	30	Advanced	US$1,500

Cement chemistry at depth, linked to how it is made and how it is tested.

This week connects three things usually taught apart: the chemistry of clinker phases, the manufacturing decisions that produce them, and the tests that measure the result. It covers the phase system and the moduli, how burning and cooling conditions change phase composition and crystal size, and what each standard test actually measures about the cement that comes out. The point throughout is to let somebody trace a test result back to a process decision.

Available as classroom, in house.

Who it is for

Process and quality engineers, laboratory managers and chemists, production superintendents, and technical sales staff who have to explain cement behaviour.

What you will be able to do

- Describe the clinker phases and what each contributes.
- Use the moduli to understand and adjust a raw mix.
- Relate burning and cooling conditions to phase composition.
- Interpret the standard tests and what they do not measure.
- Trace a cement property back to a manufacturing decision.

The outline

DAY 1

Chemistry

Oxides, phases and the Bogue calculation · Lime saturation factor, silica and alumina moduli · Minor constituents and their effects

DAY 2

Clinker formation

Reactions through the kiln · Burnability and its measurement · Cooling rate, crystal size and reactivity

DAY 3

From clinker to cement

Gypsum, sulphate optimisation and setting · Supplementary materials and their contribution · Fineness, particle size distribution and strength

DAY 4

Testing

Chemical analysis methods · Strength, setting, soundness and consistency · Microscopy and X ray diffraction

DAY 5

Diagnosis

Low strength and its usual causes · Setting irregularities · Reading a cement back to the kiln that made it

What you leave with

- A phase composition calculation from real chemical analysis.
- A raw mix adjustment worked through.
- A test interpretation guide linking results to process causes.

Published dates

DATES	WHERE	FEE
23 to 27 November 2026	Nicosia, Cyprus	**US$1,500**
30 November 2026 to 4 December 2026	Nairobi, Kenya	**US$1,500**
7 to 11 December 2026	Cairo, Egypt	**US$1,500**
14 to 18 December 2026	Accra, Ghana	**US$1,500**

Fees are per delegate and co
arranged by the delegate. Reg

Register or ask a question

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