



ENGINEERING AND TECHNICAL TRAINING

Foundation Design and Ground Improvement

5 day course

Classroom, online or in-house

Course overview

A foundation has to satisfy two separate requirements, that the ground does not fail and that the structure does not move too much, and the second is what usually decides the design. This course works through both. Delegates work through bearing capacity for shallow foundations and the factors that reduce it, then through settlement, immediate and consolidation, and the tolerable movement a structure can accept. Pad, strip and raft foundations are covered with their selection criteria. Piled foundations follow: driven, bored and continuous flight auger, with load transfer through shaft and base. Pile testing and integrity testing are addressed. Ground improvement is covered as the alternative to deeper foundations, including compaction, stone columns, soil mixing and preloading. Foundations on problem ground are addressed for expansive and collapsible soils. Excavation support and dewatering follow. The course closes on construction supervision and on diagnosing a structure that has moved.

What you will learn

- Calculate bearing capacity and the factors that reduce it
- Estimate settlement and compare it to tolerable movement
- Select between pad, strip and raft foundations
- Design piled foundations and understand load transfer
- Specify pile load and integrity testing
- Apply ground improvement as an alternative to deeper foundations
- Support excavations, dewater safely and diagnose structural movement

Who should attend

- Civil and structural engineers
- Geotechnical engineers and designers
- Site engineers supervising foundation works
- Piling contractors and supervisors
- Project engineers on building and infrastructure works

Course outline

- 01 Failure and movement are different questions
- 02 Bearing capacity for shallow foundations
- 03 Settlement and tolerable movement
- 04 Pad, strip and raft selection
- 05 Driven, bored and auger piles
- 06 Load transfer and pile testing
- 07 Ground improvement methods
- 08 Problem ground, excavation support and movement diagnosis

Upcoming dates



Dates	Venue	Format	Fee per delegate
2 to 6 November 2026	Online	Online	R8,500
9 to 13 November 2026	Durban, South Africa	Classroom	R19,950
14 to 18 December 2026	Johannesburg, South Africa	Classroom	R19,950
15 to 19 February 2027	Maseru, Lesotho	Classroom	R19,950

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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