



CIVIL ENGINEERING AND CONSTRUCTION TRAINING

Structural Engineering for Non Structural Engineers

5 day course

Classroom, online or in-house

Course overview

Plant teams regularly ask a building to carry something it was never meant for: a new tank on a mezzanine, solar panels on an old roof, a core cut through a slab for a pipe. This course gives mechanical, electrical, process and project staff enough structural intuition to recognise when such a change needs proper engineering input and to brief it well. Using physical demonstrations and sketches rather than heavy mathematics, delegates explore how loads travel to the ground, why beams bend and columns buckle, what tension, compression and stability mean in steel, timber, masonry and concrete, and how wind and vibrating machinery affect equipment supports. Later sessions cover reading structural drawings, warning signs that something is overloaded, and the questions to put to a consulting engineer. Delegates leave able to hold an informed conversation about structural risk.

What you will learn

- Explain how loads travel from roofs and floors through beams and columns to the foundations
- Describe bending, shear, tension, compression and buckling in plain physical terms
- Recognise how steel, timber, masonry and concrete behave differently under load
- Identify plant changes such as new equipment, openings and roof additions that require structural review
- Read general arrangement and member schedules on structural drawings
- Recognise visible signs of overload, movement and distress in buildings and supports
- Prepare a clear brief and set of questions for a consulting structural engineer

Who should attend

- Mechanical and electrical engineers in plants and facilities
- Process and production engineers planning equipment changes
- Project and facilities managers
- Architects and architectural technologists
- Maintenance planners and plant superintendents

Course outline

- 01 Why structures stand up: load paths
- 02 Forces in members: bending, shear and axial load
- 03 Stability, bracing and buckling
- 04 How common building materials behave
- 05 Wind, vibration and equipment supports
- 06 Reading structural drawings
- 07 Openings, new loads and plant modifications
- 08 Warning signs and when to call an engineer

Upcoming dates

Dates	Venue	Format	Fee per delegate
16 to 20 November 2026	Online	Online	R8,500
7 to 11 December 2026	Nairobi, Kenya	Classroom	USD 1,325
8 to 12 February 2027	Kigali, Rwanda	Classroom	USD 1,325
22 to 26 February 2027	Johannesburg, South Africa	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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