



INSPECTION, INTEGRITY AND CORROSION TRAINING

Microbiologically Influenced Corrosion

5 day course

Classroom, online or in-house

Course overview

A water injection line or a fire main dosed with biocide can still pit through in months beneath a tubercle nobody disturbed. This programme is about microbiologically influenced corrosion alone. Delegates begin with the organisms involved, sulphate reducing bacteria, acid producing bacteria, iron and manganese oxidisers and methanogens, and how biofilms build the local chemistry that drives attack. They study where MIC appears: stagnant branches, hydrotest water left standing in new piping, tank floors, cooling circuits and buried steel beneath disbonded wrapping. Sampling and diagnosis follow, from serial dilution culture vials to ATP, qPCR and gene sequencing, and the morphology of microbial pits under the microscope. Mitigation covers pigging, biocide selection and dosing, nitrate treatment and design changes. Delegates leave able to investigate a suspected microbial failure.

What you will learn

- Explain how biofilms and microbial metabolism create corrosive local conditions
- Identify the main microbial groups implicated in corrosion
- Recognise systems and conditions where microbial attack is likely
- Plan field sampling of water, solids and deposits for microbial analysis
- Interpret culture, ATP, qPCR and sequencing results
- Distinguish microbial pitting morphology from other forms of localised attack
- Select biocide, pigging and nitrate strategies for a given system
- Evaluate whether a failure was microbially driven

Who should attend

- Corrosion engineers in oil and gas, water and mining operations
- Production chemists managing biocide programmes
- Water treatment specialists for cooling and injection systems
- Pipeline integrity engineers
- Failure investigators and laboratory staff

Course outline

- 01 Microbial groups and biofilm formation
- 02 Mechanisms of microbial attack on steel
- 03 Systems and conditions at risk
- 04 Field sampling and sample preservation
- 05 Culture, ATP and molecular methods
- 06 Pit morphology and failure diagnosis
- 07 Biocides, pigging and nitrate treatment
- 08 Design and operating practices that deny microbes a foothold
- 09 Investigating a suspected microbial failure

Upcoming dates



Dates	Venue	Format	Fee per delegate
12 to 16 October 2026	Durban, South Africa	Classroom	R19,950
16 to 20 November 2026	Pretoria, South Africa	Classroom	R19,950
14 to 18 December 2026	Online	Online	R8,500
15 to 19 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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