



AGRICULTURE AND AGRIBUSINESS

Irrigation System Design and Scheme Planning

5 day course

Classroom, online or in-house

Course overview

An irrigation scheme is sized on a water right, a crop and a peak demand that occurs for a few weeks a year, and schemes fail when any one of those was assumed rather than established. This course establishes them. Delegates work through crop water requirement, reference evapotranspiration and the crop coefficients that convert climate data into a demand figure. Peak demand and system capacity follow, including the irrigation interval and the arithmetic that links area, flow and hours of operation. Water source assessment is covered across rivers, dams and boreholes, with reliability rather than average yield as the design basis. System selection is addressed between surface, sprinkler and micro methods, matched to crop, soil, topography and the labour available. Hydraulic design follows through pipe sizing, friction loss, pressure variation and the uniformity a design achieves. Layout and block design are covered. Costing and the water cost per hectare are addressed. The course closes on commissioning, on evaluation and on the reasons schemes underperform.

What you will learn

- Convert climate data into crop water requirement using crop coefficients
- Size peak demand and link area, flow and operating hours
- Assess a water source on reliability rather than average yield
- Select between surface, sprinkler and micro systems for the conditions
- Size pipes for friction loss, pressure variation and uniformity
- Lay out blocks and cost the scheme per hectare
- Commission, evaluate and diagnose underperformance

Who should attend

- Irrigation designers and agricultural engineers
- Scheme managers and extension engineers
- Consultants planning irrigation development
- Farm managers investing in irrigation
- Donor and government staff appraising irrigation projects

Course outline

- 01 Sized on three assumptions
- 02 Evapotranspiration and crop coefficients
- 03 Peak demand and system capacity
- 04 Water source reliability
- 05 Surface, sprinkler and micro selection
- 06 Pipe sizing, friction and pressure variation
- 07 Uniformity, layout and block design
- 08 Costing, commissioning, evaluation and underperformance

Upcoming dates



Dates	Venue	Format	Fee per delegate
12 to 16 October 2026	Online	Online	R8,500
16 to 20 November 2026	Gaborone, Botswana	Classroom	R19,950
14 to 18 December 2026	Casablanca, Morocco	Classroom	USD 1,325
28 December 2026 to 1 January 2027	Durban, 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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