

**DRILLING, WELLS AND RESERVOIR ENGINEERING**

Casing and Tubing Design

5 day course

Classroom, online or in-house

Course overview

When a production casing collapses behind a depleted interval, the well usually has to be sidetracked or abandoned, and the design check that would have caught it fits on one page. This course teaches that check properly. Delegates start with pipe grades, weights and connection types, then derive burst, collapse and axial loads for surface, intermediate and production strings and for tubing. Load cases include gas to surface, displacement to gas, cementing, pressure testing, tubing leak and evacuation. Biaxial and triaxial checks using API TR 5C3 methods, temperature effects, ballooning, buckling and sour service material limits under NACE MR0175 and ISO 15156 are applied to a worked well. Delegates leave able to choose a design factor set, select grades and connections and justify a string to a reviewer.

What you will learn

- Interpret API pipe grade, weight and connection designations
- Calculate burst, collapse and axial loads for each casing string
- Define realistic load cases for drilling and production phases
- Apply biaxial and triaxial checks to confirm string adequacy
- Account for temperature change, ballooning and buckling in tubing design
- Select materials for sour and corrosive service
- Specify premium or API connections against the governing load
- Prepare a casing design summary with stated design factors

Who should attend

- Drilling engineers responsible for well design
- Completion engineers designing tubing strings
- Well integrity engineers reviewing legacy designs
- Tubular procurement and quality engineers
- Engineers in regulatory bodies reviewing well plans

Course outline

- 01 Casing functions, grades and connections
- 02 Setting depths and string configuration
- 03 Burst load cases and design lines
- 04 Collapse load cases and depleted zones
- 05 Axial loads, buoyancy and shock
- 06 Biaxial and triaxial analysis
- 07 Temperature, ballooning and tubing movement
- 08 Sour service and material selection
- 09 Connection selection and design review

Upcoming dates



Dates	Venue	Format	Fee per delegate
30 November to 4 December 2026	Online	Online	R8,500
18 to 22 January 2027	Dar es Salaam, Tanzania	Classroom	USD 1,325
1 to 5 February 2027	Accra, Ghana	Classroom	USD 1,325
8 to 12 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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