



HEALTH, SAFETY AND SECURITY TRAINING

Quantitative Risk Assessment and Consequence Modelling

5 day course

Classroom, online or in-house

Course overview

Quantitative risk assessment converts a hazard into a number that can be compared against a criterion, and the number carries the uncertainty of every assumption behind it, which is why the assumptions matter more than the software. This course covers both. Delegates work through hazard identification feeding a study, failure frequency data and its sources, and consequence modelling for the main outcomes: jet and pool fire, flash fire, explosion overpressure and toxic dispersion. Vulnerability and harm criteria are covered. Individual and societal risk are calculated and presented, including the difference between them and why a societal criterion changes a siting decision. Risk criteria and tolerability follow. The course closes on sensitivity, on communicating uncertainty, and on decisions the numbers should not make alone.

What you will learn

- Scope a study and source credible failure frequency data
- Model jet fire, pool fire, flash fire and explosion consequences
- Model toxic dispersion and its uncertainties
- Apply vulnerability and harm criteria
- Calculate and present individual and societal risk
- Compare results against tolerability criteria
- Test sensitivity and communicate uncertainty honestly

Who should attend

- Process safety engineers and risk analysts
- Design engineers on major hazard facilities
- Regulators assessing safety submissions
- Land use planners near hazardous installations
- Insurers and technical assessors

Course outline

- 01 Assumptions matter more than the software
- 02 Study scope and hazard identification
- 03 Failure frequency data and its sources
- 04 Fire consequence modelling
- 05 Explosion overpressure
- 06 Toxic dispersion
- 07 Individual and societal risk
- 08 Tolerability, sensitivity and communicating uncertainty

Upcoming dates

Dates	Venue	Format	Fee per delegate
21 to 25 December 2026	Lagos, Nigeria	Classroom	USD 1,325
25 to 29 January 2027	Windhoek, Namibia	Classroom	R19,950
8 to 12 February 2027	Online	Online	R8,500
15 to 19 February 2027	Pretoria, 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@afiscience.co.za, or WhatsApp us on **+27 63 479 1136**.

AfriScience Group | +27 61 536 6531 | info@afiscience.co.za | Pretoria, Gauteng, South Africa