



PROCESS AND CHEMICAL ENGINEERING

Hydrotreating and Hydrocracking Operations

5 day course

Classroom, online or in-house

Course overview

Hydroprocessing removes the sulphur and nitrogen that fuel specifications forbid and converts heavy feed into distillate, using high pressure hydrogen in vessels where a temperature excursion is a serious event. This course covers running those units safely. Delegates work through reaction chemistry and catalyst function, reactor operation including temperature profile and quench control, and hydrogen management across the plant. Catalyst deactivation, regeneration and end of run planning are covered. Safety receives full attention: temperature excursion, hydrogen embrittlement, high pressure release and emergency depressuring. The course closes on troubleshooting and on optimising cycle length against product quality.

What you will learn

- Explain hydroprocessing reaction chemistry and catalyst function
- Control reactor temperature profile and quench
- Manage hydrogen supply, purity and recycle
- Plan for catalyst deactivation, regeneration and end of run
- Control the specific hazards of high pressure hydrogen service
- Respond correctly to a temperature excursion
- Optimise cycle length against product quality

Who should attend

- Refinery process and operations engineers
- Panel operators on hydroprocessing units
- Catalyst and technical services staff
- Integrity engineers working on high pressure equipment
- HSE staff supporting hydroprocessing operations

Course outline

- 01 Reaction chemistry and catalyst function
- 02 Reactor operation and temperature profile
- 03 Quench control and hot spots
- 04 Hydrogen management, purity and recycle
- 05 Catalyst deactivation and regeneration
- 06 Temperature excursion response
- 07 High pressure hydrogen hazards and depressuring
- 08 Troubleshooting and cycle length optimisation

Upcoming dates

Dates	Venue	Format	Fee per delegate
28 September to 2 October 2026	Online	Online	R8,500
12 to 16 October 2026	Addis Ababa, Ethiopia	Classroom	USD 1,325
21 to 25 December 2026	Maseru, Lesotho	Classroom	R19,950
11 to 15 January 2027	Maputo, Mozambique	Classroom	USD 1,325



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@afri-science.co.za, or WhatsApp us on **+27 63 479 1136**.

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