



Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa

Tel: +27 12 004 8389 · Mobile: +27 65 077 6310

Email: apply@aatikcd.co.za · Website: www.aatikcd.co.za

COURSE BROCHURE

Carbon Capture and Storage

Custom Courses / Energy, Oil and Gas

Unit Standard AATICD-0531 · NQF Level 5 · 6 Credits · 3 Days

COURSE OVERVIEW

This course provides a comprehensive understanding of carbon capture and storage (CCS) technologies, their role in mitigating climate change, and their application in industrial contexts. Participants will explore the technical, economic, and regulatory aspects of CCS, enabling them to contribute to sustainable energy solutions and corporate decarbonisation strategies.

Category	Custom Courses
Subfield	Energy, Oil and Gas
Unit Standard	AATICD-0531
Accreditation	SAQA Accredited · NQF Level 5 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply the principles of carbon capture, transport, and storage to design a basic CCS system for a specific industrial source.
- Analyse the technical and economic feasibility of different CCS technologies in various contexts.
- Evaluate the environmental and social impacts of CCS projects, including risk assessment and mitigation strategies.
- Demonstrate an understanding of the legal and regulatory frameworks governing CCS in South Africa and internationally.
- Design a monitoring and verification plan for a CCS site to ensure long-term storage integrity.
- Implement a stakeholder engagement strategy for a CCS project, addressing community and industry concerns.

WHO SHOULD ATTEND

- This course is designed for professionals in engineering, environmental management, energy, and sustainability roles who are involved in or interested in implementing CCS projects.
- It is also suitable for policy advisors and project managers seeking to understand CCS from a technical and regulatory perspective.

COURSE OUTLINE

Day 1: Fundamentals of Carbon Capture and Storage

- Introduction to climate change and the Paris Agreement.
- Overview of South Africa's energy landscape and emission reduction targets.
- Sources and characteristics of CO₂ emissions.
- Principles of carbon capture: absorption, adsorption, membranes, and cryogenics.
- Post-combustion capture techniques and their applications.
- Pre-combustion capture and integrated gasification combined cycle (IGCC).
- Oxy-fuel combustion and chemical looping.
- Introduction to CO₂ transport via pipelines and shipping.
- Geological storage: saline aquifers, depleted oil and gas reservoirs, and enhanced oil recovery.
- Regulatory and policy frameworks: Carbon Tax Act, CCS regulations, and international standards.

Day 2: Advanced Capture Technologies and Storage Site Selection

- In-depth analysis of capture technologies: efficiency, energy penalty, and cost.
- Emerging capture technologies: solid sorbents, metal-organic frameworks, and direct air capture.
- Criteria for site selection: geological, geophysical, and geochemical screening.
- Characterization of storage reservoirs: porosity, permeability, and caprock integrity.
- CO₂ injection techniques and well design.
- Monitoring technologies: seismic, geochemical, and satellite-based methods.
- Risk assessment: leakage pathways, induced seismicity, and environmental impact.
- Remediation and mitigation strategies.
- Case studies of CCS projects worldwide and lessons learned.

Day 3: Integration, Economics, and Implementation of CCS

- Integration of CCS with coal-fired power plants, cement production, and steel manufacturing.
- Hydrogen production with CCS (blue hydrogen) and its role in the energy transition.
- Economic analysis: capital and operational costs, revenue streams, and carbon credits.
- Financing mechanisms: public-private partnerships, green bonds, and carbon markets.
- Social license to operate: community engagement, communication, and benefit-sharing.
- Environmental impact assessment and regulatory compliance.
- Project planning, permitting, and commissioning.
- Operations and maintenance best practices.
- Future trends: carbon capture and utilization (CCU), negative emissions technologies, and policy developments.

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **6 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 13,900.00	R 13,900.00
1	In-House	R 18,100.00	R 18,100.00
1	On-Campus (Pretoria)	R 20,800.00	R 20,800.00

UPCOMING SESSIONS

Start	End	Method	Venue
30 Sep 2026	02 Oct 2026	In-House	—
30 Sep 2026	02 Oct 2026	On-Campus	Victoria Falls, Zimbabwe
05 Oct 2026	07 Oct 2026	On-Campus	Nairobi, Kenya
05 Oct 2026	07 Oct 2026	On-Campus	Lusaka, Zambia
06 Oct 2026	08 Oct 2026	On-Campus	Kigali, Rwanda
06 Oct 2026	08 Oct 2026	On-Campus	Windhoek, Namibia
06 Oct 2026	08 Oct 2026	On-Campus	Bangkok, Thailand
07 Oct 2026	09 Oct 2026	Online	—

Contact us if no suitable date is listed — on-demand sessions can be arranged for groups.

HOW TO GET A QUOTE OR APPLY

- 1. Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard AATICD-0531) and click **Get A Quote / Apply**. Select your training method and number of delegates — your quotation is generated immediately and emailed to you with the course brochure attached.
- 2. Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to apply@aaticd.co.za — our team will reply with a formal quotation.
- 3. Apply by phone or WhatsApp:** call +27 12 004 8389 or WhatsApp +27 65 077 6310 and we will prepare your quotation and reserve your seats.
- 4. Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically — the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

Accredited Africa Training Institute for Capacity Development

Unit FO409, Hatfield Plaza, 1122 Burnett St, Hatfield 0028, Pretoria, Gauteng, South Africa
Tel: +27 12 004 8389 · WhatsApp: +27 65 077 6310 · apply@aaticd.co.za · www.aaticd.co.za