



Accredited Africa Training Institute for Capacity Development

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

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COURSE BROCHURE

Bioenergy Systems

Custom Courses / Energy, Oil and Gas

Unit Standard AATICD-0489 · NQF Level 5 · 4 Credits · 2 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to understand, design, and implement bioenergy systems, focusing on sustainable energy production from biomass. Participants will explore the technical, economic, and environmental aspects of bioenergy, enabling them to contribute to renewable energy projects and policy development.

Category	Custom Courses
Subfield	Energy, Oil and Gas
Unit Standard	AATICD-0489
Accreditation	SAQA Accredited · NQF Level 5 · 4 Credits
Duration	2 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Apply the principles of bioenergy conversion technologies to assess the suitability of different biomass feedstocks.
- Analyze the environmental and socio-economic impacts of bioenergy systems using lifecycle assessment tools.
- Evaluate the technical and economic feasibility of bioenergy projects, considering local conditions and regulations.
- Design a basic bioenergy system, selecting appropriate conversion technology and feedstock supply chain.
- Implement safety and sustainability practices in bioenergy operations, adhering to South African standards.
- Demonstrate the ability to communicate bioenergy concepts and project outcomes to diverse stakeholders.

WHO SHOULD ATTEND

- Ideal for engineers, project managers, environmental scientists, and energy professionals seeking to expand their expertise in renewable energy technologies, as well as for those new to the field who wish to enter the bioenergy sector.

COURSE OUTLINE

Day 1: Foundations of Bioenergy Systems

- Introduction to bioenergy: definition, importance, and global context.
- Types of bioenergy systems: biogas, biofuels, biomass combustion, and co-firing.
- Biomass feedstocks: agricultural residues, energy crops, forestry waste, and organic waste.
- Conversion technologies: biochemical (anaerobic digestion, fermentation) and thermochemical (combustion, gasification, pyrolysis).
- End-use applications: heat, electricity, and transport fuels.
- Environmental and socio-economic considerations.
- South African policy, legislation, and incentives for bioenergy.
- Case studies of bioenergy projects in South Africa.

Day 2: Design, Operation, and Integration of Bioenergy Systems

- System design principles: sizing, feedstock logistics, and process control.
- Biogas plant operation: feedstocks, digestion process, gas collection, and residue management.
- Safety and risk management in bioenergy operations.
- Monitoring and performance indicators: gas yield, energy output, and efficiency.
- Integration with other renewable energy sources and grid connection.
- Business models and financial analysis for bioenergy projects.
- Sustainability and life cycle assessment.
- Emerging technologies and future trends.

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 **4 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 11,900.00	R 11,900.00
1	In-House	R 15,400.00	R 15,400.00
1	On-Campus (Pretoria)	R 17,800.00	R 17,800.00

UPCOMING SESSIONS

Start	End	Method	Venue
01 Oct 2026	02 Oct 2026	On-Campus	Blantyre, Malawi
05 Oct 2026	06 Oct 2026	On-Campus	Windhoek, Namibia
06 Oct 2026	07 Oct 2026	On-Campus	Kigali, Rwanda
06 Oct 2026	07 Oct 2026	Online	—
07 Oct 2026	08 Oct 2026	On-Campus	Mbabane, Eswatini
07 Oct 2026	08 Oct 2026	On-Campus	Lusaka, Zambia
08 Oct 2026	09 Oct 2026	On-Campus	Bangkok, Thailand
08 Oct 2026	09 Oct 2026	On-Campus	Nairobi, Kenya

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-0489) 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.

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