



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

Building Management Systems (BMS)

Custom Courses / Engineering & Technical Maintenance

Unit Standard AATICD-0252 · NQF Level 5 · 10 Credits · 5 Days

COURSE OVERVIEW

This course equips learners with the knowledge and skills to operate, monitor, and maintain Building Management Systems (BMS) in commercial and industrial environments. Participants will understand the integration of HVAC, lighting, security, and energy management systems to optimize building performance and efficiency.

Category	Custom Courses
Subfield	Engineering & Technical Maintenance
Unit Standard	AATICD-0252
Accreditation	SAQA Accredited · NQF Level 5 · 10 Credits
Duration	5 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS – verifiable online

LEARNING OUTCOMES

- Explain the fundamental principles and components of a Building Management System.
- Apply BMS protocols and communication standards to integrate subsystems.
- Analyze BMS data to optimize energy consumption and environmental conditions.
- Implement routine maintenance and troubleshooting procedures for BMS hardware and software.
- Evaluate system performance reports and recommend improvements.
- Demonstrate compliance with relevant safety and regulatory standards in BMS operations.

WHO SHOULD ATTEND

- Facility managers, maintenance technicians, electricians, and IT professionals responsible for the operation and maintenance of building automation systems.

COURSE OUTLINE

Day 1: Introduction to BMS and System Architecture

- What is a Building Management System?
- Overview of BMS components: sensors, controllers, actuators, HMIs
- BMS architecture: field level, automation level, management level
- Communication protocols: BACnet, Modbus, LonWorks
- Energy management and sustainability benefits
- Case studies: typical BMS applications (HVAC, lighting, access control)
- Introduction to BMS standards and regulations (SANS, ISO)
- Safety considerations in BMS installation and operation

Day 2: Sensors, Actuators, and Controllers

- Temperature sensors: RTDs, thermocouples, thermistors
- Humidity sensors: capacitive, resistive
- Pressure and flow sensors: transmitters, switches
- Actuators: modulating (0-10V, 4-20mA) and floating control
- Controllers: DDC controllers, PLCs, and their input/output modules
- Basics of controller programming: logic, PID loops, schedules
- Wiring, shielding, and termination techniques
- Sensor calibration procedures and documentation

Day 3: BMS Networking and Communication Protocols

- Overview of BMS communication protocols: BACnet, Modbus, LonWorks, KNX
- BACnet: objects, properties, services (Who-Is, I-Am, ReadProperty, WriteProperty)
- Modbus: RTU vs TCP, addressing, function codes
- Network topologies and media (RS-485, Ethernet, wireless)
- Configuring BACnet routers and gateways
- Troubleshooting network connectivity: termination, biasing, noise
- Cybersecurity principles: segmentation, passwords, updates
- Practical: setting up a simple BACnet network

Day 4: BMS Programming, Graphics, and Alarm Management

- Control sequences: PID, ON/OFF, floating control
- HMI graphics: building floor plans, dynamic symbols, navigation
- Alarm management: priority, acknowledgement, notification
- Trending and data logging for performance analysis
- Energy optimization: demand-controlled ventilation, optimum start/stop
- Commissioning: verifying sensor readings, actuator response, sequence of operations
- Practical: programming a simple controller (e.g., temperature control loop)
- Practical: building an HMI graphic with live data

Day 5: System Integration, Maintenance, and Troubleshooting

- Integration with lighting control (DALI, 0-10V)
- Integration with fire alarm and access control systems
- Preventive maintenance schedules: cleaning, calibration, firmware updates
- Troubleshooting methodology: isolate, test, replace
- Common faults: sensor drift, actuator failure, network dropouts

- Energy reports: kW, kWh, demand, efficiency metrics
- BMS upgrade planning: compatibility, cost-benefit, phased implementation
- Practical: fault-finding exercise on a simulated BMS

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 **10 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 24,200.00	R 24,200.00
1	In-House	R 31,400.00	R 31,400.00
1	On-Campus (Pretoria)	R 36,200.00	R 36,200.00

UPCOMING SESSIONS

Start	End	Method	Venue
10 Aug 2026	14 Aug 2026	On-Campus	Durban, South Africa
10 Aug 2026	14 Aug 2026	On-Campus	Abu Dhabi, UAE
17 Aug 2026	21 Aug 2026	On-Campus	Harare, Zimbabwe
17 Aug 2026	21 Aug 2026	On-Campus	Shenzhen, China
24 Aug 2026	28 Aug 2026	On-Campus	Bangkok, Thailand
24 Aug 2026	28 Aug 2026	On-Campus	Victoria Falls, Zimbabwe
31 Aug 2026	04 Sep 2026	On-Campus	Lusaka, Zambia
31 Aug 2026	04 Sep 2026	On-Campus	London, UK

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-0252) 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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