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

Point of Care Biomedical Instrumentation and Rapid Testing

Health Sciences and Social Services / Curative Health

Unit Standard 252392 · NQF Level 4 · 11 Credits · 8 Days

COURSE OVERVIEW

This course equips healthcare professionals with the skills to correctly operate point of care (POC) biomedical instrumentation systems and use rapid testing kits in pathology or blood transfusion settings. Learners will gain the competence to perform accurate tests, interpret results, and ensure quality assurance in accordance with South African health regulations.

Category	Health Sciences and Social Services
Subfield	Curative Health
Unit Standard	252392
Accreditation	SAQA Accredited · NQF Level 4 · 11 Credits
Duration	8 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS — verifiable online

LEARNING OUTCOMES

- Apply principles of POC biomedical instrumentation and rapid testing to perform accurate diagnostic procedures.
- Demonstrate correct use of POC devices and rapid test kits according to manufacturer instructions and standard operating procedures.
- Interpret and record test results accurately, identifying potential errors and implementing corrective actions.
- Evaluate quality control measures and troubleshoot common issues with POC equipment and rapid tests.
- Implement infection control and safety protocols when handling biological specimens and using POC instruments.
- Analyze the role of POC testing in improving patient outcomes and workflow efficiency in healthcare settings.

WHO SHOULD ATTEND

- This course is designed for medical laboratory technicians, nurses, phlebotomists, and other healthcare workers who perform or oversee point of care testing in clinical, pathology, or blood transfusion environments.

COURSE OUTLINE

Day 1: Introduction to Point of Care Testing and Biomedical Instrumentation

- Overview of POCT: definition, benefits, and limitations.\n• Basic principles of biomedical instrumentation: sensors, transducers, and signal processing.\n• Regulatory bodies and standards: SAHPRA, ISO 15189, and SANAS.\n• Categories of POCT devices: glucose meters, pregnancy tests, infectious disease tests, cardiac markers.\n• Introduction to quality assurance in POCT.\n• Safety considerations in handling POCT devices.

Day 2: Principles of Rapid Testing Technologies

- Lateral flow immunoassay components and operation.\n• Agglutination assays: principles and examples.\n• Enzymatic assays: glucose oxidase and other common reactions.\n• Interpretation of test results: cut-offs, controls, and invalid results.\n• Factors influencing test performance: temperature, humidity, sample quality.\n• Comparison of rapid tests with laboratory-based methods.

Day 3: Instrumentation for Point of Care Testing

- Optical sensors: reflectance photometry, fluorescence.\n• Electrochemical sensors: amperometric, potentiometric.\n• Biosensors: enzyme electrodes, immunosensors.\n• Overview of specific devices: glucose meters, HbA1c analyzers, INR monitors.\n• Calibration protocols and quality control materials.\n• Data management: barcode scanning, connectivity to LIS/HIS.\n• Preventive maintenance and troubleshooting.

Day 4: Quality Assurance and Regulatory Compliance in POCT

- Elements of a POCT quality assurance plan.\n• Internal quality control: frequency, acceptable ranges, troubleshooting.\n• External quality assessment schemes: participation and reporting.\n• Documentation: standard operating procedures, logbooks, incident reports.\n• Regulatory compliance: SAHPRA requirements, accreditation standards.\n• Audit preparation and continuous improvement.\n• Case studies on quality failures and corrective actions.

Day 5: Infectious Disease Rapid Testing

- HIV rapid tests: algorithm, window period, confirmatory testing.\n• Malaria rapid diagnostic tests: antigen detection, species differentiation.\n• Tuberculosis: molecular and antigen-based rapid tests.\n• STI rapid tests: syphilis, hepatitis B/C, HPV.\n• Specimen types: whole blood, plasma, saliva, urine.\n• Infection control: PPE, waste disposal, spill management.\n• Reporting and notification of communicable diseases.

Day 6: Point of Care Testing for Chronic Disease Management

- Diabetes POCT: glucometers, HbA1c analyzers, continuous glucose monitors.\n• Cardiovascular POCT: lipid profile, troponin, NT-proBNP.\n• Coagulation POCT: INR meters for warfarin monitoring.\n• Renal function POCT: creatinine, eGFR.\n• Integration of POCT results into clinical decision-making.\n• Patient education and point-of-care counseling.\n• Case studies on chronic disease management using POCT.

Day 7: Emerging Technologies and Advanced Applications in POCT

- Molecular POCT: GeneXpert, LAMP, CRISPR-based assays.\n• Biosensors: wearable glucose monitors, lactate sensors.\n• Smartphone-based diagnostics: camera-based readers, apps.\n• Microfluidics and lab-on-a-chip devices.\n• Connectivity and data integration: cloud-based platforms.\n• Ethical and legal considerations in emerging POCT.\n• Future trends: AI-assisted interpretation, multiplex testing.

Day 8: Practical Integration and Competency Assessment

- Hands-on operation of glucose, HbA1c, INR, and infectious disease devices.\n• Quality control procedures: running controls, recording results.\n• Troubleshooting common errors: error codes, invalid results.\n• Simulated patient scenarios: case-based testing and interpretation.\n• Documentation: patient results, QC logs, maintenance records.\n• Competency assessment: written test and practical demonstration.\n• Course review and feedback.

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 **11 NQF credits** at **NQF Level 4**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 22,600.00	**R 22,600.00**
1	In-House	R 30,500.00	**R 30,500.00**
1	On-Campus (Pretoria)	R 33,900.00	**R 33,900.00**

UPCOMING SESSIONS

Start	End	Method	Venue
02 Dec 2026	11 Dec 2026	On-Campus	Victoria Falls, Zimbabwe
02 Dec 2026	11 Dec 2026	On-Campus	Kinshasa, DRC
03 Dec 2026	14 Dec 2026	On-Campus	Pretoria, South Africa
04 Dec 2026	15 Dec 2026	On-Campus	Dar es Salaam, Tanzania
07 Dec 2026	16 Dec 2026	On-Campus	Victoria Falls, Zimbabwe
07 Dec 2026	16 Dec 2026	On-Campus	Blantyre, Malawi
08 Dec 2026	17 Dec 2026	On-Campus	Kinshasa, DRC
09 Dec 2026	18 Dec 2026	On-Campus	Bangkok, Thailand

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

HOW TO GET A QUOTATION OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard 252392) and click **Get A Quotation**. 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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