

A C A D E M I C C O M M I T T E E B R I E F I N G

A U T O D I G I T I D A F R I C A

BTech in AIDC & Intelligent Automation.

Architecture, Systems & Strategy track.

Curriculum architecture, accreditation alignment, faculty enablement, assessment model, and adoption pathway — for review by the academic committee.

P R E P A R E D F O R

[University Name] · Academic Programmes Committee

Senate / Faculty Board / Accreditation Sub-Committee · 2026

What this committee will review today.

P A R T 1 Programme Rationale

Workforce gap, market context, programme philosophy.

P A R T 2 Curriculum Architecture

BTech structure, units, credits, exit awards.

P A R T 3 Accreditation & Assessment

PLOs, NQF/OBE alignment, assessment model, capstone.

P A R T 4 Faculty & Resourcing

Staffing, enablement, software environment, labs.

P A R T 5 Adoption & Governance

MoU, IP, certification separation, 90-day onboarding.

01

PART 01

PROGRAMME RATIONALE

Why this programme.

Why now.

Workforce gap, market context, and the architectural philosophy behind the BTech.

Africa's digital infrastructure is scaling faster than its workforce.

T H E G A P

Architecture-ready talent.

Industry needs people who can architect intelligent operational systems — not configure devices. African universities have not yet built that pipeline at scale.

- 1 Logistics, healthcare, manufacturing, and public-sector systems are digitising rapidly across the continent.
- 2 AI, automation, traceability, and identity systems all sit on top of AIDC infrastructure that few graduates understand.
- 3 Universities still teach generic IT and engineering — with little operational systems focus and no architecture exposure.
- 4 Industry struggles to find architecture-ready talent. Roles either go unfilled or get filled by expatriate consultants.

AIDC has become strategic infrastructure.



GS1 Sunrise 2027

Universal 2D barcode adoption deadline reshaping retail and supply chain.



Digital Product Passport

EU DPP compliance reaches African exports across multiple verticals.



AI-Driven Operations

Operational intelligence becomes a baseline expectation, not a feature.



Smart Warehousing

RTLS, robotics, and intelligent picking move from pilot to standard.



RTLS + Digital Twins

Real-time visibility moves from pilot to enterprise standard.



Mobile-First Edge

Edge devices become the front door of operations — and the data source.

Implication for the academy: *graduates without architectural fluency in AIDC will be locked out of the most defensible roles in African industry over the next decade.*

We separate architecture from deployment.



THE UNIVERSITY

Teaches THINK.

- Architecture & systems thinking
- AI strategy & operational intelligence
- Integration concepts (ERP/WMS/MES/EHR)
- Standards & interoperability
- Governance, ethics, compliance
- ROI engineering & business case design



THE CERTIFICATION TRACK

Teaches DO.

- Device configuration & RFID tuning
- Printer setup & label-stock management
- MDM and device fleet management
- Workflow tooling & integration consoles
- Vendor-specific deployment
- Field-service troubleshooting

Critical: the BTech does not teach configuration. The certification track does not teach architecture. The separation is structurally enforced — and is what protects the academic integrity of the degree.

What graduates will be able to do.



Architect AIDC ecosystems

Across the 5-layer Intelligence Stack — capture, network, data, intelligence, decision.



Design AI-enabled workflows

Move beyond dashboards to embedded operational decisions with human-in-the-loop oversight.



Defend ROI to executives

Build and present executive-grade business cases for transformation programmes.



Design identity & traceability

Including DPP, GS1, biometrics, and digital identity for enterprise and public sector.



Evaluate ERP / WMS / MES integration

Read enterprise architecture, identify gaps, and lead integration design.



Apply governance & ethics

AI governance, privacy, security, and compliance in real African operating contexts.

02

PART 02

CURRICULUM ARCHITECTURE

BTech structure, units, credits, exits.

4 years, 8 semesters, 128 credits — with diploma and higher-diploma exit options.

BTech in AIDC & Intelligent Automation — at a glance.

YEAR 1	YEAR 2	YEAR 3	YEAR 4
Foundations of AIDC Systems Understand: AIDC concepts, IoT, standards, enterprise systems. 38 credits	Systems, Standards & Architecture Structure: architecture, integration, standards literacy. 36 credits · Diploma exit	Industry Systems Design & Integration Design: sector design, capstone foundations, attachment. 36 credits · Higher Dip. exit	AI, Automation & Enterprise Strategy Architect: AI in operations, governance, capstone defence. 33 credits · Capstone
128 Total Credits	Level 7 NQF Alignment	8 Semesters	8–12 wks Industrial Attachment

How the 128 credits are distributed.



Category	Credits	%
Core AIDC & Systems	74	58%
Common Units	18	14%
Integration & AI	18	14%
Research & Capstone	12	9%
Industrial Attachment	6	5%
TOTAL	128	100%

One credit corresponds to approximately 10 notional learning hours per semester week. Mappable to ECTS and SAQA frameworks during adoption.

Foundations and architecture phase.

YEAR 1 · FOUNDATIONS · 38 CREDITS		
AID 101	Introduction to AIDC Systems	3
AID 102	Fundamentals of Digital Systems	3
AID 103	Principles of Data Capture	3
AID 104	Communication & Tech Writing	2
AID 105	Mathematics for Intelligent Sys I	3
AID 106	Intro to Supply Chain Systems	3
AID 107	Computer Apps & Productivity	2
AID 108	Barcode & Identification Stds	3
AID 109	RFID, Biometrics & Identity	3
AID 110	Networking & Connectivity	3
AID 111	Data Quality & Integrity	3
AID 112	Fundamentals of IoT & Edge	3
AID 113	Intro to Programming Logic	2
AID 114	Entrepreneurship & Innovation	2

YEAR 2 · ARCHITECTURE · 36 CREDITS		
AID 201	AIDC Systems Architecture	3
AID 202	Enterprise Systems Fundamentals	3
AID 203	Digital Identity & Security	3
AID 204	Standards & Interoperability	3
AID 205	Database Concepts & Info Flows	3
AID 206	Workflow Mapping & Process Anlys	3
AID 207	Data Modelling & Integration	3
AID 208	Real-Time Visibility Systems	3
AID 209	Mobile & Edge Computing Strat	3
AID 210	Cloud Systems & Enterprise Pltf	3
AID 211	Research Methods & Tech Doc	3
AID 212	Systems Failure Analysis	3

After Year 2, students may exit with a Diploma in AIDC Systems & Operations Architecture and articulate to industry or return for Years 3–4.

Industry integration and architectural defence.

YEAR 3 · INDUSTRY DESIGN · 36 CREDITS		
AID 301	Logistics & Warehouse Sys Arch	3
AID 302	Healthcare Traceability Systems	3
AID 303	Retail, POS & Omnichannel	3
AID 304	Public Sector Identity Systems	3
AID 305	Enterprise Integration Arch	3
AID 306	API & Event-Driven Systems	3
AID 307	Workflow Engineering & Auto	3
AID 308	Industrial IoT & Smart Mfg	3
AID 309	RTLS, Digital Twins & Visibility	3
AID 310	Business Value Eng. & ROI	3
AID 311	AI Foundations for Operations	3
AID 312	Industrial Attachment I	3

YEAR 4 · ENTERPRISE STRATEGY · 33 CREDITS		
AID 401	AI in AIDC Systems	3
AID 402	Machine Vision & Inspection	3
AID 403	Enterprise Auto & Orchestration	3
AID 404	Governance, Ethics & Compliance	3
AID 405	Strategic Technology Leadership	3
AID 406	Research Project I	3
AID 407	Change Mgmt & Tech Adoption	3
AID 408	Smart Infrastructure & Future	3
AID 409	Innovation, Policy & Digital Tx	3
AID 410	Capstone Project & Defence	6

Capstone (AID 410) is a 6-credit, industry-defended architecture project assessed by a mixed academic and industry panel.

Stackable credentials at every stage.

AFTER YEAR 2

Diploma

Diploma in AIDC Systems & Operations Architecture

CREDITS

74 credits

PARALLEL CERTIFICATION

Auto DigitID Professional

AFTER YEAR 3

Higher Diploma (optional)

Higher Diploma in AIDC Integration & Industry Systems

CREDITS

110 credits

PARALLEL CERTIFICATION

Auto DigitID Specialist

AFTER YEAR 4

BTech

Bachelor of Technology in AIDC & Intelligent Automation

CREDITS

128 credits

PARALLEL CERTIFICATION

Auto DigitID Expert

Parallel certifications are not bundled into the academic award. Students enrol in them separately through the Auto DigitID Africa platform.

Year 3 grounds the curriculum in real verticals.



Logistics & Warehousing



Healthcare & Pharma



Manufacturing



Retail & eCommerce



Public Sector & Identity



Banking & Financial Services



Utilities & Energy



CEP & Distribution

Each Year 3 unit pairs theory with sector-applied design exercises drawn from real African enterprise contexts.

03

PART 03

ACCREDITATION & ASSESSMENT

Outcomes, alignment, evidence.

Programme Learning Outcomes, NQF/OBE alignment, assessment model, and capstone defence.

10 PLOs aligned to OBE and NQF Level 7.

PLO 1	Explain the principles of AIDC, IoT, AI, and intelligent automation systems.	PLO 6	Design AI-assisted operational intelligence and decision-support systems.
PLO 2	Design enterprise-grade data capture and identification architectures.	PLO 7	Construct ROI and business justification models for technology programmes.
PLO 3	Analyse operational workflows and identify automation opportunities.	PLO 8	Evaluate governance, ethics, privacy, and security implications of AI/AIDC systems.
PLO 4	Evaluate integration architectures across ERP, WMS, MES, TMS, and EHR ecosystems.	PLO 9	Develop scalable implementation, change-management, and adoption strategies.
PLO 5	Apply standards including GS1, EPC, ISO, DPP, and digital identity frameworks.	PLO 10	Defend enterprise architecture decisions before mixed academic and industry panels.

PLOs map to Bloom's higher cognitive levels (analyse, evaluate, design, defend) — appropriate for NQF Level 7.

Designed to meet existing frameworks.



African NQF

Level 7 alignment, mappable to country-specific NQFs across the continent.



TVET Articulation

Diploma and Higher Diploma exits enable TVET pathways and lateral entry.



OBE Principles

Outcome-Based Education across PLOs, units, and assessment design.



Washington Accord

Engineering-adjacent components designed to be Washington Accord-adaptable.



ECTS / SAQA Mapping

Credit-transfer mapping documentation provided during institutional adoption.



Industry STEM Frameworks

Aligned to industry-driven STEM education frameworks (skills-first design).

Adoption support: Auto DigitID Africa provides a documentation pack for accreditation submissions, including curriculum-to-NQF crosswalks, assessment mappings, and PLO traceability matrices.

Competency-based across the cognitive ladder.

WEIGHTING

Coursework	40%
Practical simulations	20%
Projects & case studies	20%
Final examination	20%

YEAR - SPECIFIC ASSESSMENT FOCUS

Y E A R	1	Concept exams, conceptual labs, written analyses.
Y E A R	2	Architecture diagrams, standards literacy assessments.
Y E A R	3	Industry case design, ROI models presented to mock executive panels.
Y E A R	4	Strategic written exam, capstone defence before academic + industry panel.

Assessment is competency-based. Quizzes alone are insufficient — students produce defensible artefacts at every year.

Industry-defended architecture project.

A I D 4 1 0 · 6 C R E D I T S · Y E A R 4 S E M E S T E R 2 · 2 0 % O F F I N A L
A S S E S S M E N T

1	Problem definition	Real African industry stakeholder context. 10%	5	Governance framework	Ethics, privacy, compliance. 10%
2	Enterprise architecture	Across the 5-layer AIDC Intelligence Stack. 20%	6	Deployment roadmap	Phased plan with change management. 10%
3	AI & automation strategy	Including human-in-the-loop design. 15%	7	Industry panel defence	Oral defence under questioning. 20%
4	ROI & business case	Executive-grade, defensible. 15%			

THE BAR

Graded on the candidate's ability to defend architectural decisions — not present them. A pass requires demonstrated reasoning under questioning by senior industry assessors.

04

PART 04

FACULTY & RESOURCING

Staffing, enablement, and the lab model.

Faculty mix, train-the-trainer, software environment, and architecture-driven labs.

Recommended faculty composition.



AIDC Subject-Matter Specialists

Academic or industry-credentialed; lead conceptual and architectural units.



Supply Chain Technologists

Cover logistics, warehousing, and operations sector design units.



Enterprise Systems Architects

ERP, WMS, MES, EHR exposure; lead integration architecture units.



AI & Automation Lecturers

Lead Year 4 AI in operations, machine vision, and orchestration units.



Industry Adjunct Faculty

Case studies, capstone supervision, and panel defence — drawn from partner roster.



Standards Specialists (advisory)

GS1, ISO, DPP fluency for standards literacy and curriculum review.

Industry adjuncts are not optional — they are essential to capstone defence panels and curriculum currency.

What Auto DigitID Africa provides.

FACULTY ENABLEMENT

- Lecturer guides for every AID code
- OBE-aligned assessment rubrics
- Train-the-trainer workshops (initial)
- Annual faculty refresher workshops
- Institutional analytics dashboard
- Standardised exam blueprints
- Capstone panel access & prep materials
- Curriculum updates within 12 months

RECOMMENDED SOFTWARE

Architecture	draw.io, Lucidchart, ArchiMate
Workflow modelling	Bizagi, BPMN.io, Camunda Modeler
Data modelling	MySQL Workbench, dbdiagram.io
Analytics	Power BI, Tableau, Metabase
AI exposure	Python notebooks (Jupyter, Colab)
Workflow simulation	Camunda, BPMN simulators
Documentation	Markdown, Confluence, Notion

All tools are vendor-neutral, widely available, and aligned to architecture-first learning outcomes — no vendor lock-in.

Architecture-driven, not vendor-tooling.



INCLUDED IN LABS

- Architecture diagramming and modelling
- Workflow analysis and process redesign
- Data flow modelling and integration design
- Standards literacy exercises (GS1, ISO, DPP)
- AI scenario modelling (conceptual)
- ROI clinics and business-case studios
- Industry case-study studios
- Architecture defence panels



EXCLUDED — CERTIFICATION TRACK

- Scanner configuration and firmware
- RFID reader tuning and antenna alignment
- Printer setup and label-stock management
- MDM deployment and device fleet management
- Vendor-specific deployment tooling
- Field-service troubleshooting
- Live integration commissioning
- Hardware procurement decisions

This separation is structural. *Excluded activities live in the Auto DigitID certification ladder (Professional / Specialist / Expert) — delivered separately, priced separately.*

05

PART 05

ADOPTION & GOVERNANCE

MoU, IP separation, 90-day onboarding.

How adoption works in practice — and what the academic committee should ask before approval.

ADOPTION & DECISION

From committee approval to first cohort.



KEY GOVERNANCE GUARDRAILS

IP retention Auto DigitID Africa retains ownership of curriculum, certification standards, and frameworks. University holds non-exclusive usage rights.	Cert separation Certifications are not bundled into the academic award. Students enrol separately.	Quality assurance Annual joint reviews, capstone industry panels, standards alignment reviews.	Term & exit 3-year renewable MoU. Termination clauses protect orderly cohort completion.
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THE DECISION BEFORE THE COMMITTEE

Endorse adoption of the BTech in AIDC & Intelligent Automation under the recommended tier and authorise the partnerships team to proceed with MoU drafting and the 90-day onboarding programme.