



TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL (TVET CDACC)

# Programme Description and Assessment Tools

# Simple Automation Control Inspector



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	Workplace foundation	
	<i>AGEN 001 001</i>	Workplace Health and Safety
	<i>AGEN 001 002</i>	Fire Fighting
	<i>AGEN 001 003</i>	Perform First Aid Practices
	<i>AGEN 001 004</i>	Emergency Plans
	<i>AGEN 001 005</i>	Environmental Integrity
	<i>AGEN 002 001</i>	Principles of work ethics
	<i>AGEN 002 002</i>	Conflict Resolution Techniques
	<i>AGEN 002 003 004</i>	Speaking, Listening and Reading Skills
	<i>AGEN 002 005 006</i>	Team Work

<i>AGEN 003 001</i>	Time Management Techniques
<i>AGEN 003 002</i>	Quality Improvement Principles
<i>AGEN 003 003</i>	Productivity Improvement Measures
<i>AGEN 004 001</i>	Measurements
<i>AGEN 004 002</i>	Carry out simple mathematical calculations
<i>AGEN 005 001</i>	Basic Drawings

#### Specific Fundamentals

<i>AIAC 012 001I</i>	IAC Basics
<i>AIAC 012 003</i>	PLC Basics
<i>AIAC 026 001</i>	IAC Drawings
<i>AIAC 026 006</i>	IAC Math
<i>AIAC 012 005</i>	SAC Connections
<i>AIAC 012 006</i>	SAC Configuration
<i>AIAC 012 008</i>	SAC Functions

#### Elective

<i>AIAC 021 001</i>	Project 1 - Hold Circuit Controller
<i>AIAC 021 002</i>	Project 2 - Stairwell Circuit
<i>AIAC 021 003</i>	Project 3 - Tank Filling system
<i>AIAC 021 004</i>	Project 4 - Outdoor Lighting
<i>AIAC 021 005</i>	Project 5 - Star Delta Circuit

#### Final Project

<i>AIAC 021 006</i>	Project 6 – Motor Starter Circuit
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## 1. Programme Description

### 1.1. Overview:

Program Code:	PIAC 001
Workplace foundation:	156 hours
Specific fundamentals:	60 hours
Elective:	140 hours
Industrial Attachment	3 Months
Final Project	8 hours
Total Teaching Hours:	364 hours

#### Note:

The hours were based on experience of members. All times in the initial phases of curriculum and standard development are best estimates based on experience. Only the pilot will give actual timings that should then be amended in the OS and Curriculum documents.

### 1.2. Entry Requirements

This course is intended for individuals who have attained at least a KCSE D+ or its equivalent from recognized institutions. Some candidates may require Assessment before Admission.

### 1.3. Competency Based Assessment

The mode of assessment of this course will be both continuous (formative assessment) and summative assessment. Internal assessment will be conducted during training while summative assessment will be conducted at the end of each unit of learning or cluster of units of learning.

The assessment system will comprise internal and external assessment and verification. The system will be managed by trained internal and external assessors and verifiers. Experts from industry will participate as external assessors and verifiers while the trainers will be the internal assessors.

### 1.4. Competence Certification

On successful completion the candidates are awarded a Certificate of Competence that is internationally benchmarked. The Certificate will be issued by the Technical University. Depending on the selected specialization, a trainee who demonstrates competence in all units of learning he/she will be issued with a Certificate of Competence in Simple Automation Control Inspector.

## 1.5. List of Training Modules

### 1.5.1. Workplace foundation

Unit Code	Unit Name	Pre Requisites	Learning Hours	Reference Unit Standard in Occupational Standards	Assessment Tools
GEN001	Workplace HSE	KCSE D+ or its equivalent	54	<p>GEN 001, Element 1, 4,5 Apply workplace health, safety, environmental and emergency practices (30 hours)</p> <p>GEN 001, Element 2 Perform basic fire-fighting techniques (8 hours)</p> <p>GEN 001, Element 3 Perform basic first aid (16 hours)</p>	<ul style="list-style-type: none"> <li>· AGEN 001 001 Workplace Health and Safety</li> <li>· AGEN 001 004 Emergency Plans</li> <li>· AGEN 001 005 Environmental Integrity</li> <li>· AGEN 001 002 Fire Fighting</li> <li>· AGEN 001 003 Perform First Aid Practices</li> </ul>
GEN002	Workplace Skills	KCSE D+ or its equivalent	47	<p>GEN 002, Element 1 Principles of Work Ethics (7 hours)</p> <p>GEN 002 Element 2 Resolve conflict with others (8 hours)</p>	<ul style="list-style-type: none"> <li>· AGEN 002 001 Principles of work ethics</li> <li>· AGEN 002 002 Conflict Resolution Techniques</li> </ul>
				<p>GEN 002, Element 3 Demonstrate effective speaking and listening skills (8 hours)</p> <p>GEN 002, Element 4 Read and interpret work document (8 hours)</p>	<ul style="list-style-type: none"> <li>· AGEN 002 003 004 Speaking, Listening and Reading Skills</li> </ul>
				<p>GEN 002, Element 5 Interact with team members (8 hours)</p> <p>GEN 002, Element 6 Perform individual role in a team (8 hours)</p>	<ul style="list-style-type: none"> <li>· AGEN 002 005 006 Team Work</li> </ul>
GEN003	Work Activities	KCSE D+ or its equivalent	25	<p>GEN 003, Element 1 Apply Time Management Techniques (9 hours)</p>	<ul style="list-style-type: none"> <li>· AGEN 003 001 Time Management Techniques</li> </ul>
				<p>GEN 003, Element 2 Apply Quality Improvement Principles (8 hours)</p>	<ul style="list-style-type: none"> <li>· AGEN 003 002 Quality Improvement Principles</li> </ul>
				<p>GEN 003, Element 3 Productivity Improvement Measures (8 hours)</p>	<ul style="list-style-type: none"> <li>· AGEN 003 003 Productivity Improvement Measures</li> </ul>

Unit Code	Unit Name	Pre requisites	Learning Hours	Reference Unit Standard in Occupational Standards	Assessment Tools
GEN 004	Measurement and Calculations	KCSE D+ or its equivalent	15	IAC 026 Demonstrate knowledge on IAC basics, Element 6 Carry out simple mathematical calculations	<ul style="list-style-type: none"> <li>· AGEN 004 001 Measurements</li> <li>· AGEN 004 002 Carry out simple mathematical calculations</li> </ul>
GEN 005	Drawings	KCSE D+ or its equivalent	15	IAC 026 Demonstrate knowledge on IAC basics, Element 1 Read and interpret documentation such as diagrams, schematics and drawings	<ul style="list-style-type: none"> <li>· AGEN 005 001 Basic Drawings</li> </ul>
Total GEN 001 - 005			156		

### 1.5.2. Specific fundamentals:

Unit Code	Unit Name	Pre requisites	Learning Hours	Reference Unit Standard in Occupational Standards	Assessment Tools
ICF 001	IAC Basics	GEN 001 GEN 004 GEN 005	32	IAC 012 Install and Service Electrical and Electronic Equipment, Element 1 Mount electrical and electronic equipment	· AIAC 012 001 IAC Basics
				IAC 012 Install and Service Electrical and Electronic Equipment, Element 3 Diagnose electrical and electronic equipment	· AIAC 012 003 PLC Basics
				IAC 026 Element 1 Read and interpret documentation such as diagrams, schematics and drawings special for I&C  IAC 012 Element 4 Repair electrical and electronic equipment	· AIC 026 001 IAC Drawings
				IAC 026 Element 6 Carry out simple mathematical calculations for IAC	· AIAC 026 006 IAC Math
ICF 002	SAC Basics	ICF 001	28	IAC 012 Install and Service Electrical and Electronic Equipment, Element 5 Install and maintain circuit wiring  IAC 012 Install and Service Electrical and Electronic Equipment, Element 6 Install and maintain lighting systems  IAC 012 Install and Service Electrical and Electronic Equipment, Element 8 Install meters, instruments, relays and other electrical equipment	· AIAC 012 005 SAC Connections  · AIAC 012 008 SAC Functions  · AIAC 012 006 SAC Configuration
Total			60		



1.5.3. Elective:

Unit Code	Unit Name	Pre Requisites	Learning Hours	Reference Unit Standard in Occupational Standards	Assessment Tools
ICE 001	Stand Alone Controllers	ICF 001 ICF 002	140	IAC 021 Install and service stand-alone controllers (SACs), all elements  Entry Level Project: Hold Circuit Controller	· AIAC 021 001 Project 1
				IAC 021 Install and service stand-alone controllers (SACs), all elements  Entry Level Project: Stairwell Circuit	· AIAC 021 002 Project 2
				IAC 021 Install and service stand-alone controllers (SACs), all elements  Entry Level Project: Tank Filling system	· AIAC 021 003 Project 3
				IAC 021 Install and service stand-alone controllers (SACs), all elements  Advanced Level Project: Outdoor Lighting	· AIAC 021 004 Project 4
				IAC 021 Install and service stand-alone controllers (SACs), all elements  Expert Level Project: Star Delta Circuit	· AIAC 021 005 Project 5
Total			140		

#### 1.5.4. Industrial Attachment:

Description
<p>Unit Code, ICC 001, Company visits</p> <p>Learners will be exposed in industry to instrumentation and control related to the tasks learnt during their institutional training. A log book will be used to track exposure against the modules attended and to ensure learners are indeed exposed to tasks related to their training.</p>
Total 3 Months (in Minimum)

#### 1.5.5. Final Project:

Unit Code	Unit Name	Pre Requisites	Learning Hours	Reference Unit Standard in Occupational Standards	Assessment Tools
ICE 002	Final IAC Project	ICE 001 Industrial Attachment	8	IAC 012 Install and Service Electrical and Electronic Equipment, Element 9 Assemble electrical components and appliances  Expert Level Project: Motor Starter Circuit	· AIAC 021 006 Project 6
Total			8		