

Model Curriculum

Industrial Automation Technician

**SECTOR : INSTRUMENTATION AUTOMATION SURVEILLANCE &
COMMUNICATION**

SUB-SECTOR : INSTRUMENTATION & AUTOMATION

OCCUPATION : INSTALLATION & COMMISSIONING

REF ID : IAS/Q5601, V3.0

NSQF LEVEL : 4



Certificate

**CURRICULUM COMPLIANCE TO
QUALIFICATION PACK - NATIONAL OCCUPATION STANDARDS**

Is hereby issued by the
INSTRUMENTATION AUTOMATION SURVEILLANCE & COMMUNICATION SECTOR SKILL COUNCIL
For the
MODEL CURRICULUM

Complying of National Occupational Standards of
Job Role/Qualification Pack : **'Industrial Automation Technician'** QP No. **'IAS/Q5601 v1.0 NSQF Level 4'**

Date of Issuance : May 02nd, 2019

Valid up to : May 01st, 2023

*Valid up to the next review date of the Qualification Pack

Authorised Signatory
**(INSTRUMENTATION AUTOMATION SURVEILLANCE &
COMMUNICATION)**

TABLE OF CONTENTS

1. Curriculum	01
2. Trainer Prerequisites	07
3. Assessment Criteria	08

Industrial Automation Technician

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Industrial Automation Technician”, in the “Instrumentation Automation Surveillance & Communication Sector Skill Council” Sector/Industry and aims at building the following key competencies amongst the learners.

Program Name	Industrial Automation Technician		
Qualification Pack Name & Reference ID	IAS/Q5601, v3.0		
Version No.	2.0	Version Update Date	22 th Aug. 2022
Pre-requisites to Training	10th + 1 year NTC or 1 year NAC in relevant field OR 10th + 1 year experience in relevant field OR Completed 1st year or pursuing 2nd year of 3 years Engineering Diploma (after 10th) in relevant field. OR Previous relevant Qualification of NSQF Level 3 + 1 year experience in relevant field		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none"> <input type="checkbox"/> Identify client requirements of control panels. <input type="checkbox"/> Prepare installation and integration of control panel <input type="checkbox"/> Carryout installation of control panel <input type="checkbox"/> Carryout testing of control panel <input type="checkbox"/> Carryout integration of control panel with customer system <input type="checkbox"/> Carryout commissioning of control panel <input type="checkbox"/> Follow health and safety norms of the industry and the organization to ensure health and safety of self, others, asset and environment. <input type="checkbox"/> Work effectively in a team 		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “Industrial Automation Technician” Qualification Pack issued by “Instrumentation Automation Surveillance & Communication Sector Skill Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p>Install and Commission Control Panel</p> <p>Theory Duration (hh:mm) 60:00</p> <p>Practical Duration (hh:mm) 90:00</p> <p>Corresponding NOS Code IAS/N5605</p>	<ul style="list-style-type: none"> Identify the inventory of components and sub systems received at customer location Identify the wired / unwired control panel according to design Carryout installation/positioning of control panel according to drawing and specifications. Carryout cable routing and cable termination to control panel according to drawing and specification. Carryout testing of earth quality. Carryout connection of tested earth system to the control panel. Carryout continuity check of all connections. Carryout powering of control panel from correct power source (UPS or other source). Carryout basic integrity test of the control panel for proper operation, without connecting to the customer system. 	Laptop, white board, marker, projector, Model Control Panel with Instruments, Controllers, Devices, Sensors, Cables, Tool set
2	<p>Work Effectively With Teams</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 15:00</p> <p>Corresponding NOS Code IAS/N9001</p>	<ul style="list-style-type: none"> Coordinate effectively with team members to achieve work objectives Communicate effectively with the team. Demonstrate active listening skills while communicating 	Laptop, white board, marker, projector, MS Office / Open office software, email, Printer
3	<p>Health and Safety in Workplace</p> <p>Theory Duration (hh:mm) 15:00</p> <p>Practical Duration (hh:mm) 15:00</p> <p>Corresponding NOS Code IAS/N9002</p>	<ul style="list-style-type: none"> Illustrate the importance of safety and first aid. Identify the components of a basic firstaid kit, safety tools, equipments. Administer basic first aid at the time of emergency. Demonstrate correct use of fire extinguishers at the time of emergency. Follow the general safety procedures as defined by the organization Follow electrical safety measures while operating electrical tools and RF equipment Illustrate practices for maintaining safe and secure workplace Participate in safety drills at workplace 	Laptop, white board, marker, projector, Fire Drill accessories, First Aid kit, Protective Gear, ESD accessories

	<p>Employability skills Theory Duration (hh:mm) 30:00 Practical Duration (hh:mm) 30:00 Corresponding NOS Code <i>DGT/VSQ/N0102</i></p>		
	<p>Introduction to Employability Skills Mapped to NOS 60 Hours (Version No. 1) Duration:1.5 Hours (1.5 Theory + 0 Practical)</p>	<ul style="list-style-type: none"> • Discuss the Employability Skills required for jobs in various industries • List different learning and employability related GOI and private portals and their usage 	<p>Laptop, white board, marker, projector</p>
	<p>Constitutional values – Citizenship Mapped to NOS 60 Hours (Version No. 1) Duration:1.5 Hours (1.5 Theory + 0 Practical)</p>	<ul style="list-style-type: none"> • Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen • Show how to practice different environmentally sustainable practices 	<p>Laptop, white board, marker, projector</p>
	<p>Becoming a Professional in the 21st Century Mapped to NOS 60 Hours (Version No. 1) Duration:2.5 Hours (2.5 Theory + 0 Practical)</p>	<ul style="list-style-type: none"> • Discuss importance of relevant 21st century skills. • Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life. • Describe the benefits of continuous learning 	<p>Laptop, white board, marker, projector</p>

	<p>Basic English Skills Mapped to NOS 60 Hours (Version No. 1) Duration: 10 Hours (5 Theory + 5 Practical)</p>	<ul style="list-style-type: none"> • Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone • Read and interpret text written in basic English • Write a short note/paragraph / letter/e - mail using basic English 	<p>Laptop, white board, marker, projector</p>
	<p>Career Development and Goal Setting Mapped to NOS 60 Hours (Version No. 1) Duration: 2 Hours (1 Theory + 1 Practical)</p>	<ul style="list-style-type: none"> • Create a career development plan with well-defined short- and long-term goals 	<p>Laptop, white board, marker, projector</p>
	<p>Communication skills Mapped to NOS 60 Hours (Version No. 1) Duration: 5 Hours (2 Theory + 3 Practical)</p>	<ul style="list-style-type: none"> • Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette. • Explain the importance of active listening for effective communication • Discuss the significance of working collaboratively with others in a team 	<p>Laptop, white board, marker, projector</p>
	<p>Diversity and Inclusion Mapped to NOS 60 Hours (Version No. 1) Duration: 2.5 Hours (2.5 Theory+ 0 Practical)</p>	<ul style="list-style-type: none"> • Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD • Discuss the significance of escalating sexual harassment issues as per POSH 	<p>Laptop, white board, marker, projector</p>
	<p>Financial and Digital Literacy Mapped to NOS 60 Hours (Version No. 1) Duration: 5 Hours (2 Theory+ 3 Practical)</p>	<ul style="list-style-type: none"> • Outline the importance of selecting the right financial institution, product, and service • Demonstrate how to carry out offline and online financial transactions, safely and securely 	<p>Laptop, white board, marker, projector</p>

	<p>Essential Digital Skills Mapped to NOS 60 Hours (Version No. 1) Duration: 10 Hours (4 Theory+ 6 Practical)</p>	<ul style="list-style-type: none"> Describe the role of digital technology in today's life Demonstrate how to operate digital devices and use the associated applications and features, safely and securely Discuss the significance of displaying responsible online behaviour while browsing, using various social media platforms, e-mails, etc., safely and securely Create sample word documents, excel sheets and presentations using basic features utilize virtual collaboration tools to work effectively 	<p>Laptop, white board, marker, projector</p>
	<p>Entrepreneurship Mapped to NOS 60 Hours (Version No. 1) Duration: 7 Hours (3 Theory+ 4 Practical)</p>	<ul style="list-style-type: none"> Explain the types of entrepreneurship and enterprises Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement Create a sample business plan, for the selected business opportunity 	<p>Laptop, white board, marker, projector</p>
	<p>Total Duration 390:00</p> <p>Theory Duration 90:00</p> <p>Practical Duration 120:00</p> <p>OJT 120:00</p> <p>ES (Employability Skills) 60:00</p>	<p>Unique Equipment Required:</p> <ul style="list-style-type: none"> Laptop, white board, marker, projector, Model Control Panel with Instruments, Controllers, Devices Sensors, switches, indicators, pushbuttons etc. Electrical safety accessories, Electrical switchgear, Conductivity meter, Earth pit and its components Tool sets, Meter sets, Wires, Cables, Terminals, Sockets, Panels, Cable tray, Ferrules, Cable Glands, Supporting infrastructure Fire Drill accessories, First Aid kit, Protective Gear, ESD accessories AUTOCAD Software, MS Office / Open office software, email, Printer 	

Grand Total Course Duration: 390 Hours, 00 Minutes

(This Syllabus/curriculum has been made by Instrumentation Automation Surveillance & Communication Sector Skill Council)

Trainer Prerequisites for Job role: “Industrial Automation Technician” mapped to Qualification Pack: “IAS/Q5601, V3.0”

Sr. No.	Area	Details
1	Description	Industrial Automation Technician is employed by System Integrators who develop control systems for industries using OEM C&I products and other bought out components. The Technician assembles and wires these in control panels; programs, tests, installs and integrates with customer systems, under guidance of the Installation Engineer. The Technician assists the Engineer in Commissioning and powering up the panel at the customer site.
2	Personal Attributes	This job requires interdisciplinary aptitude, ability to learn, ability to deal with a variety of technology and people of different trades and skills.
3	Minimum Educational Qualification	I.T.I (Electrical, Electronics, Instrumentation, or similar trades) OR Diploma (Electrical, Electronics, Instrumentation, or similar trades)
4a	Domain Certification	Certified for Job Role: “Industrial Automation Technician” mapped to QP: “IAS/Q5601, V3.0”. Minimum accepted score is 80%
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the applicable Qualification Pack: “MEP/Q0102”. Minimum accepted score is 80%.
5	Experience	I.T.I (Electrical, Electronics, Instrumentation, or similar trades) with 2 years’ experience (Industry), and 1 year experience (Teaching) OR Diploma (Electrical, Electronics, Instrumentation or similar trades) with 2 years’ experience (Industry), and 1 year experience (Teaching)

