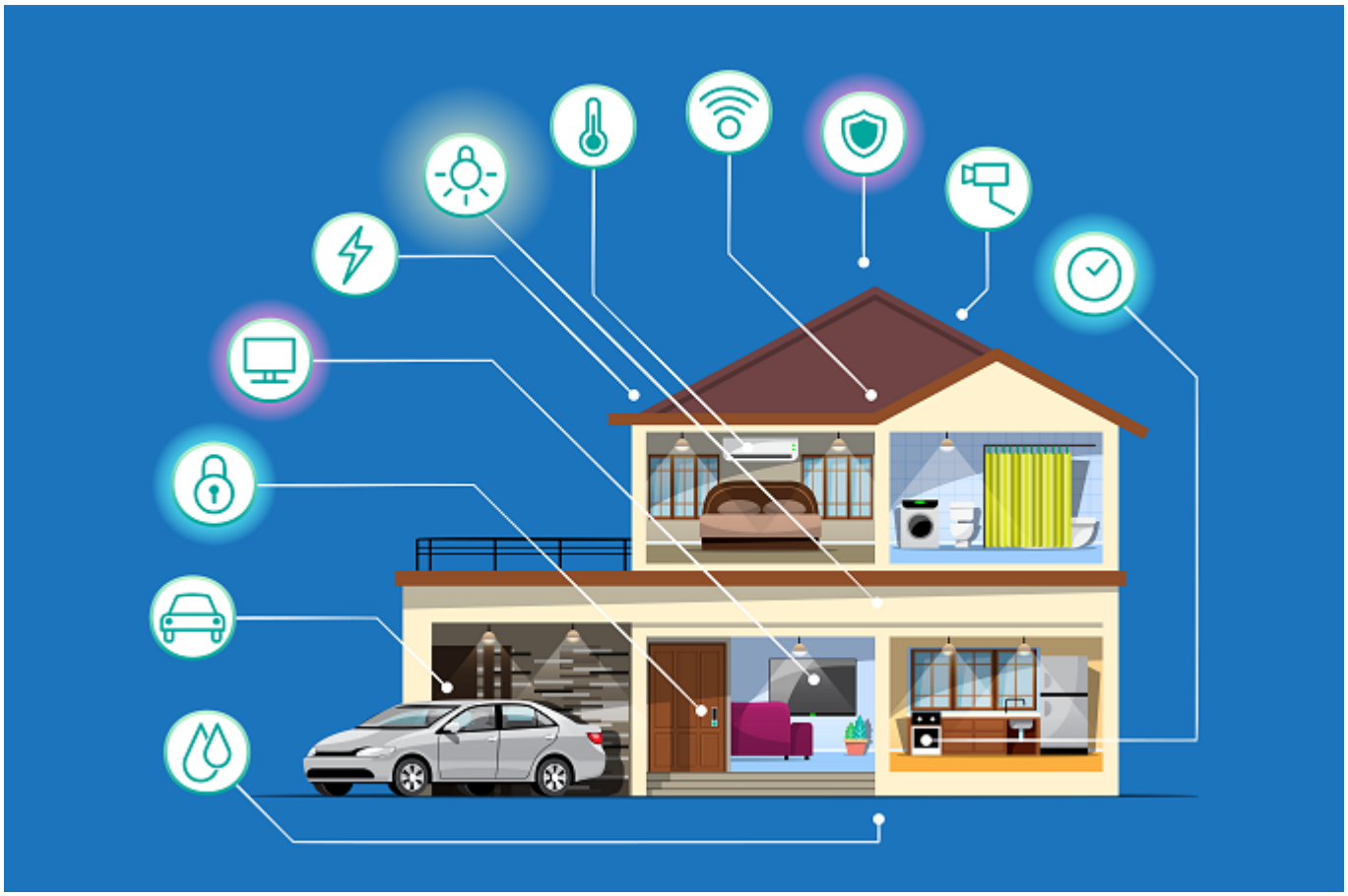
Qualification Pack



Building Automation Specialist

QP Code: IAS/Q3006

Version: 6.0

NSQF Level: 5

Contents

Qualification Pack

IAS/Q3006: Building Automation Specialist

Brief Job Description

Performs system design, wiring, integration, testing, installation & maintenance of automation systems in buildings involving HVAC, FAS, ACS & CCTV Systems.

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.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. IAS/N2103: Install and Provide Technical Support for CCTV Surveillance Systems
2. IAS/N2104: Integrating and Controlling Building automation System
3. DGT/VSQ/N0102: Employability Skills (60 Hours)
4. IAS/N8014: Design, install, & Provide Technical Support for the HVAC System
5. IAS/N8015: Design Install and Provide Technical Support for Fire Alarm System
6. IAS/N8016: Install and Provide Technical Support for Access Control Systems
7. IAS/N8012: Integration of Smart Technologies in HVAC,Lighting, Security and other building Automation

Qualification Pack (QP) Parameters

Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Occupation	Product Engineering/System Design
Country	India
NSQF Level	5
Credits	19

Qualification Pack

Aligned to NCO/ISCO/ISIC Code	NCO-2015/2149.0100
Minimum Educational Qualification & Experience	Completed 3 year diploma after 10th (Engg Diploma Instrumentation/Mechanical/EEE/ECE/Mechtronics) with 1.5 years of experience OR B.E./B.Tech (2nd Year Completed Instrumentation/Mechanical/EEE/ECE/Mechatronics) OR Previous relevant Qualification of NSQF Level (4.5) with 1.5 years of experience Building Automation Domain OR Previous relevant Qualification of NSQF Level (4) with 3 Years of experience Building Automation Domain
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	07/10/2030
NSQC Approval Date	07/10/2025
Version	6.0
Reference code on NQR	QG-05-CG-045542025-V2-IASC
NQR Version	2.0

IAS/N2103: Install and Provide Technical Support for CCTV Surveillance Systems

Description

This OS unit is about Installing and Providing Technical Support for CCTV Surveillance Systems at the customers premises

Scope

The scope covers the following :

- This unit/task covers the following: Capturing the requirements of CCTV Surveillance Systems by site survey Suggesting and taking approval from the customer for CCTV System to be installed Installing approved CCTV components as per site requirements Wiring Electrical and Electronics components as per specifications Testing CCTV systems at customer premises Providing Technical Support for CCTV Systems Achieving Quality and Productivity as per company norms

Elements and Performance Criteria

Capturing the requirements of CCTV Surveillance Systems by site survey

To be competent, the user/individual on the job must be able to:

PC1. Capturing work requirements of the client by site survey

PC2. Developing BOQ according to the requirement of the client

PC3. Assisting customer about different types of technologies used in CCTV Surveillance Systems according to the need of site

PC4. Ensuring that Suggesting components matches to customers requirement

PC5. Assisting the customers about the company policies towards services and warranty

PC6. Managing proper documentation of site survey and customer requirements

Suggesting and taking approval from the customer for CCTV System to be installed

To be competent, the user/individual on the job must be able to:

PC7. Suggesting appropriate CCTV components to the customer according to the site

PC8. Assisting the customers about technologies used in CCTV systems with their specifications

PC9. Taking approval for installing CCTV Systems from the customer

PC10. Preparing and assembling CCTV Systems components as per the requirement

PC11. Creating check list before going to the site for installation

PC12. Maintaining complete documentation of the components to be installed

Installing approved CCTV components as per site requirements

To be competent, the user/individual on the job must be able to:

PC13. Assisting procurement of hardware required for CCTV system installation

PC14. Collecting and checking of components before going to customer premises

PC15. Assisting technicians for checking hardware components before Installation

PC16. Replacing components if found malfunctioning

PC17. Preparing Checklist and ensure the availability of every component before installation
PC18. Installing CCTV components at the customers site
PC19. Mounting the CCTV camera so as to cover maximum area
PC20. Deciding on the height of camera installation according to the end purpose
PC21. Setting up the camera such as pan, tilt, zoom unit as per customer requirements
PC22. Set camera controls
PC23. Connecting the power and video output cable to the camera
PC24. Ensuring that all the hardware matches the customer requirement, agreed features and specifications

Wiring Electrical and Electronics components as per specifications

To be competent, the user/individual on the job must be able to:

PC25. Determining the type of cable requirement for different types of network type such as USB, twisted pair, etc.
PC26. Ensuring adequate length of cables are available for installation
PC27. Wiring Power Supplies, Earthing & Grounding.
PC28. Laying the cables in the building or site to connect the camera and system
PC29. Using BNC connectors for joining cables and crimping them
PC30. Using power cable of specified thickness to connect CCTV system with power supply
PC31. Connecting all the cables from multiple cameras to the CCTV system area

Testing CCTV Components at customer premises

To be competent, the user/individual on the job must be able to:

PC32. Checking voltage and resistance at all appropriate points of the system
PC33. Correcting alignment and operation of CCTV hardware
PC34. Checking correct operation of each component. Ensure that there are no malfunctioning, if yes than replace the component
PC35. Checking the signals of CCTV components
PC36. Checking all the data received by CCTV as per the requirement
PC37. Ensuring that there are no cable joins, sharp bends during cabling
PC38. Ensure 100% satisfaction from customers for all the installed components

Providing Technical Support for CCTV Systems

To be competent, the user/individual on the job must be able to:

PC39. Providing Technical Support for CCTV devices at the customer premises
PC40. Commissioning CCTV Systems performance as per customer requirements
PC41. Achieving zero errors in commissioning as per company policy
PC42. Identifying problems and alert on time
PC43. Fixing for any errors (if any) identified
PC44. Verifying software implementation checks;(AI, AO, DI,DO) I/O points
PC45. Ensuring zero-material damage while handling the equipment during installation process
PC46. Performing software functionality test

Achieving Quality and Productivity as per company norms

To be competent, the user/individual on the job must be able to:

PC47. Achieving 100% work schedule as planned for the week
PC48. Following standard operating procedure of tools and equipment and avoid any hazard
PC49. Achieving zero component damage
PC50. Keeping work area clean and organized
PC51. Achieving 100% compliance with health and safety guidelines and rules
PC52. Ensuring installed components as per company norms and standards

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Companys policies on: incentives, delivery standards and personnel management, customer management
KU2. Reporting and documentation processes
KU3. Importance of the individuals role in the workflow
KU4. Reporting structure
KU5. Complete knowledge of CCTV Surveillance System
KU6. Knowledge of Ethernet and I/P & Industrial Networks
KU7. Operation of components used in CCTV system
KU8. Elements of CCTV systems such as camera, DVR, monitor
KU9. Electrical/electronic/mechanical parts required for the ACS
KU10. Material requirement of components with their specifications
KU11. Installation procedures given in the manuals
KU12. Different type of cables used for data transmission and power transmission
KU13. Power requirement of different CCTV related equipment
KU14. Knowledge of communication between CCTV and other BAS components
KU15. Video recording of footage analog and digital
KU16. Different types of camera available in the market
KU17. Camera specifications such as focus, lens type, zoom
KU18. Controls of different options in camera such as rotation, speed of movement in pan / tilt camera
KU19. Voltage and power requirement for different hardware devices
KU20. How to operate the system and other hardware
KU21. Understanding of Networks protocols
KU22. Safety rules, policies and procedures
KU23. Quality standards to be followed

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. Preparing indents and list of equipment required for the specified Access Controls System

GS2. Compiling all the related documents as per the requirements

GS3. Record Faults in instruments and submit to the team leader.

GS4. Read warnings, instructions and other text material on product levels, components etc.

GS5. Reading drawings and job sheets or work orders

GS6. Discuss work load with superiors

GS7. Communicate with team leader for proper erstanding of work

GS8. Interact with coworkers and gather all the information related to process requirement

GS9. Make decisions according to the situations

GS10. Plan the execution of entire design activity; long term and short term activities so that he can finish the task activity wise in the stipulated time.

GS11. Organize expert support from/within outside professional environment for new technology and feasibility studies.

GS12. Understand real needs of the customer and suggest most appropriate solution

GS13. Support customer when they need help

GS14. Think and provide best possible solution required for the system

GS15. Identify immediate or temporary solutions to resolve delays

GS16. Use the existing information to arrive at actionable decision points

GS17. Use the existing information for improving the customer satisfaction

GS18. Use the existing information to optimize solution and company business

GS19. Analyze problems and identify causes and possible solutions

GS20. Analyze the work flow and suggest superiors to provide improvement for better production

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Capturing the requirements of CCTV Surveillance Systems by site survey	**7**	**9**	**-**	**-**
PC1. Capturing work requirements of the client by site survey	2	1	-	-
PC2. Developing BOQ according to the requirement of the client	1	2	-	-
PC3. Assisting customer about different types of technologies used in CCTV Surveillance Systems according to the need of site	1	2	-	-
PC4. Ensuring that Suggesting components matches to customers requirement	1	2	-	-
PC5. Assisting the customers about the company policies towards services and warranty	1	1	-	-
PC6. Managing proper documentation of site survey and customer requirements	1	1	-	-
Suggesting and taking approval from the customer for CCTV System to be installed	**6**	**8**	**-**	**-**
PC7. Suggesting appropriate CCTV components to the customer according to the site	1	2	-	-
PC8. Assisting the customers about technologies used in CCTV systems with their specifications	1	1	-	-
PC9. Taking approval for installing CCTV Systems from the customer	1	1	-	-
PC10. Preparing and assembling CCTV Systems components as per the requirement	1	1	-	-
PC11. Creating check list before going to the site for installation	1	1	-	-
PC12. Maintaining complete documentation of the components to be installed	1	2	-	-
Installing approved CCTV components as per site requirements	**12**	**19**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. Assisting procurement of hardware required for CCTV system installation	1	1	-	-
PC14. Collecting and checking of components before going to customer premises	1	1	-	-
PC15. Assisting technicians for checking hardware components before Installation	-	-	-	-
PC16. Replacing components if found malfunctioning	1	1	-	-
PC17. Preparing Checklist and ensure the availability of every component before installation	1	3	-	-
PC18. Installing CCTV components at the customers site	2	3	-	-
PC19. Mounting the CCTV camera so as to cover maximum area	1	2	-	-
PC20. Deciding on the height of camera installation according to the end purpose	1	2	-	-
PC21. Setting up the camera such as pan, tilt, zoom unit as per customer requirements	1	2	-	-
PC22. Set camera controls	1	2	-	-
PC23. Connecting the power and video output cable to the camera	1	1	-	-
PC24. Ensuring that all the hardware matches the customer requirement, agreed features and specifications	1	1	-	-
Wiring Electrical and Electronics components as per specifications	**9**	**16**	**-**	**-**
PC25. Determining the type of cable requirement for different types of network type such as USB, twisted pair, etc.	1	3	-	-
PC26. Ensuring adequate length of cables are available for installation	2	3	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. Wiring Power Supplies, Earthing & Grounding.	2	3	-	-
PC28. Laying the cables in the building or site to connect the camera and system	1	2	-	-
PC29. Using BNC connectors for joining cables and crimping them	1	2	-	-
PC30. Using power cable of specified thickness to connect CCTV system with power supply	1	1	-	-
PC31. Connecting all the cables from multiple cameras to the CCTV system area	1	2	-	-
Testing CCTV Components at customer premises	**7**	**15**	**-**	**-**
PC32. Checking voltage and resistance at all appropriate points of the system	1	2	-	-
PC33. Correcting alignment and operation of CCTV hardware	1	2	-	-
PC34. Checking correct operation of each component. Ensure that there are no malfunctioning, if yes than replace the component	1	3	-	-
PC35. Checking the signals of CCTV components	1	2	-	-
PC36. Checking all the data received by CCTV as per the requirement	1	2	-	-
PC37. Ensuring that there are no cable joins, sharp bends during cabling	1	2	-	-
PC38. Ensure 100% satisfaction from customers for all the installed components	1	2	-	-
Providing Technical Support for CCTV Systems	**8**	**16**	**-**	**-**
PC39. Providing Technical Support for CCTV devices at the customer premises	1	2	-	-
PC40. Commissioning CCTV Systems performance as per customer requirements	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC41. Achieving zero errors in commissioning as per company policy	1	2	-	-
PC42. Identifying problems and alert on time	1	2	-	-
PC43. Fixing for any errors (if any) identified	1	2	-	-
PC44. Verifying software implementation checks;(AI, AO, DI,DO) I/O points	1	2	-	-
PC45. Ensuring zero-material damage while handling the equipment during installation process	1	2	-	-
PC46. Performing software functionality test	1	2	-	-
Achieving Quality and Productivity as per company norms	**6**	**12**	**-**	**-**
PC47. Achieving 100% work schedule as planned for the week	1	2	-	-
PC48. Following standard operating procedure of tools and equipment and avoid any hazard	1	2	-	-
PC49. Achieving zero component damage	1	2	-	-
PC50. Keeping work area clean and organized	1	2	-	-
PC51. Achieving 100% compliance with health and safety guidelines and rules	1	2	-	-
PC52. Ensuring installed components as per company norms and standards	1	2	-	-
NOS Total	**55**	**95**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IAS/N2103
NOS Name	Install and Provide Technical Support for CCTV Surveillance Systems
Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Occupation	Product Engineering/System Design
NSQF Level	5
Credits	3
Version	4.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

IAS/N2104: Integrating and Controlling Building automation System

Description

This OS unit is about Integrating CCTV Surveillance Systems, Fire Alarm Systems, Access Control Devices and HVAC Components in the control Panel

Scope

The scope covers the following :

- This unit/task covers the following: Integrating HVAC Components Integrating Fire Alarm Systems Integrating Access Control Devices Integrating CCTV Surveillance Systems Controlling and Supervising Building Automation Systems using Control Panel.

Elements and Performance Criteria

Integrating HVAC Components

To be competent, the user/individual on the job must be able to:

PC1. Installing and Controlling HVAC Components using DDC Controllers

PC2. Graphically monitor, control, alarm and diagnose Building Equipment remotely

PC3. Creating communication between DDC Controllers using data Bus

PC4. Using BACnet, LON(Echelon) and MODBUS to communicate on data Bus

PC5. Integrating installed HVAC Components with other Building Automation Systems using Software and programming on Single Control Panel

Integrating Fire Alarm Systems

To be competent, the user/individual on the job must be able to:

PC6. Integrating different detectors such as Heat, Smoke, Flame Ionization Detectors, Beam Detectors etc. with control panel

PC7. Using Conventional Systems and analogue addressable systems for fire panels

PC8. Creating and testing communication between control panel and detectors

PC9. Using Intelligent addressable systems as per the requirement

PC10. Integrating Fire Alarm Components with central fire alarm system

PC11. Integrating Fire alarm system with centralized control panel

Integrating Access Control Devices

To be competent, the user/individual on the job must be able to:

PC12. Inter facing between different networks used in Access Controls systems

PC13. Integrating tailgate detectors to remove unauthorized access

PC14. Controlling and monitoring multiple doors using reader controllers

PC15. Creating communication between control panel and access control servers

PC16. Integrating DIU (Door interface Units)

PC17. Integrating access control and intrusion detection

PC18. Installing Biometric systems on application device

PC19. Installing and creating communication between magnetic locks and doors
PC20. Managing Smart card management systems
PC21. Integrating Access Control System with Time/Attendance payroll system
PC22. Managing Weigand Communication for specific interface between card and readers.
PC23. Integrating Access Control devices with BAS control Panel

Integrating CCTV Surveillance Systems

To be competent, the user/individual on the job must be able to:

PC24. Managing Iris and Auto Iris functionality of installed CCTV System
PC25. Managing Automatic Shutter Speed
PC26. Creating communication between CCTV Camera and DVR or NVR
PC27. Managing Automatic Gain Control
PC28. Managing Synchronization between installed CCTV Camera
PC29. Creating communication between IP cameras and network
PC30. Managing NVR and NVR Software
PC31. Installing and managing Facial and number plate recognition system
PC32. Integrating CCTV Surveillance System with Security system to provide centralized management of access control
PC33. Integrating centralized Access Control System with Building Automation System control Panel

Controlling and Supervising Building Automation Systems using Control Panel

To be competent, the user/individual on the job must be able to:

PC34. Testing of overall integrated Building Automation System through control panel
PC35. Ensuring proper working and controlling of every installed device using control panel
PC36. Assuring 100% satisfaction from the customer after installation of BAS
PC37. Troubleshooting errors if the system is not working as per the requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Company manufacturing processes
KU2. Existing layout for the processes
KU3. Sequence of operations for each process
KU4. Facility planning methodology being followed in the company
KU5. Future capacity expansions plans (if any) of the company
KU6. Complete knowledge of the BAS Software Integration
KU7. Understanding of the latest technologies used in HVAC Systems
KU8. Fire alarm system technology and components used
KU9. Access controller installation and integration techniques
KU10. Standard Electrical/electronic parts and assemblies
KU11. Standard Mechanical, pneumatic and hydraulic parts and assemblies
KU12. Understanding wiring and drawings for communication

KU13. Integrating all the components as per customers requirement
KU14. Understanding refrigerants, chillers and components used in air conditioning system
KU15. Understanding fixed air volume and variable air volume applications
KU16. Understanding Psychometrics
KU17. Knowledge of sensors, actuators, input devices, output devices, logic statements and PID loops
KU18. Understanding point scheduling and I/O summary
KU19. Knowledge of Building Management System (BMS) graphics screens and tags
KU20. Knowledge of Ethernet and I/P & Industrial Networks such as MODBUS, LON, BAC net etc.
KU21. Understanding Direct Digital Controllers in BAS
KU22. Understanding Laws of Thermodynamics
KU23. Understanding characteristics of fire classes
KU24. Understanding Fire Detection technologies
KU25. Knowledge of Fire panel Technologies
KU26. Understanding detectors and device wiring schema
KU27. Knowledge of Firemans Telephony, Talkback systems and Mass Evacuation
KU28. Understanding Peer-to-peer & Daisy Chain Networks
KU29. Understanding NFPA Guidelines and fire safety strategies
KU30. Knowledge of Access control System components such as Magnetic swipe, RF proximity cards, smart cards, Mifare smart cards, i-class smart cards, readers etc.
KU31. Understanding data encryption and security
KU32. Knowledge of complete CCTV Surveillance system and components used
KU33. Understanding power requirements of different components
KU34. Knowledge of different cables used with their specifications
KU35. Knowledge of different types of camera technologies used with their specifications

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. Compile all the data related to main and auxiliary equipment required in the process
GS2. Compile all the data related to study of existing facility in the form of presentation and reports
GS3. Record Faults in instruments.
GS4. Read the equipment literature and understand its features
GS5. Read the information displayed at the workplace
GS6. Discuss task lists, schedules, and work-loads with co-workers
GS7. Communicate the new equipment and facilities design activities to the higher management in meetings for their support
GS8. Spell out effectively the findings of the study to the higher management in meetings
GS9. Interact with coworkers and gather all the information related to process requirement
GS10. Make decisions pertaining to the concerned area of work

GS11. Plan the execution of entire design activity; long term and short term activities so that he can finish the task activity wise in the stipulated time.

GS12. Organize expert support from/within outside professional environment for new technology and feasibility studies.

GS13. Understand real needs of the customer and suggest most appropriate solution

GS14. Support customers when they need help

GS15. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)

GS16. Identify immediate or temporary solutions to resolve delays

GS17. Use the existing information to arrive at actionable decision points

GS18. Use the existing information for improving the customer satisfaction

GS19. Use the existing information to optimize solution and company business

GS20. Analyze problems and identify causes and possible solutions

GS21. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action.

GS22. Analyze the way in which the existing facility layout is in operation and think of more economic and feasible measures for existing layout modification.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Integrating HVAC Components	**9**	**10**	**-**	**-**
PC1. Installing and Controlling HVAC Components using DDC Controllers	2	2	-	-
PC2. Graphically monitor, control, alarm and diagnose Building Equipment remotely	2	2	-	-
PC3. Creating communication between DDC Controllers using data Bus	1	2	-	-
PC4. Using BACnet, LON(Echelon) and MODBUS to communicate on data Bus	2	2	-	-
PC5. Integrating installed HVAC Components with other Building Automation Systems using Software and programming on Single Control Panel	2	2	-	-
Integrating Fire Alarm Systems	**6**	**10**	**-**	**-**
PC6. Integrating different detectors such as Heat, Smoke, Flame Ionization Detectors, Beam Detectors etc. with control panel	1	2	-	-
PC7. Using Conventional Systems and analogue addressable systems for fire panels	1	2	-	-
PC8. Creating and testing communication between control panel and detectors	1	2	-	-
PC9. Using Intelligent addressable systems as per the requirement	1	1	-	-
PC10. Integrating Fire Alarm Components with central fire alarm system	1	1	-	-
PC11. Integrating Fire alarm system with centralized control panel	1	2	-	-
Integrating Access Control Devices	**15**	**25**	**-**	**-**
PC12. Inter facing between different networks used in Access Controls systems	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. Integrating tailgate detectors to remove unauthorized access	1	1	-	-
PC14. Controlling and monitoring multiple doors using reader controllers	1	1	-	-
PC15. Creating communication between control panel and access control servers	2	1	-	-
PC16. Integrating DIU (Door interface Units)	1	3	-	-
PC17. Integrating access control and intrusion detection	2	4	-	-
PC18. Installing Biometric systems on application device	2	3	-	-
PC19. Installing and creating communication between magnetic locks and doors	1	3	-	-
PC20. Managing Smart card management systems	1	2	-	-
PC21. Integrating Access Control System with Time/Attendance payroll system	1	1	-	-
PC22. Managing Weigand Communication for specific interface between card and readers.	1	1	-	-
PC23. Integrating Access Control devices with BAS control Panel	1	3	-	-
Integrating CCTV Surveillance Systems	**12**	**26**	**-**	**-**
PC24. Managing Iris and Auto Iris functionality of installed CCTV System	2	3	-	-
PC25. Managing Automatic Shutter Speed	2	4	-	-
PC26. Creating communication between CCTV Camera and DVR or NVR	1	3	-	-
PC27. Managing Automatic Gain Control	1	2	-	-
PC28. Managing Synchronization between installed CCTV Camera	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC29. Creating communication between IP cameras and network	1	3	-	-
PC30. Managing NVR and NVR Software	1	3	-	-
PC31. Installing and managing Facial and number plate recognition system	1	2	-	-
PC32. Integrating CCTV Surveillance System with Security system to provide centralized management of access control	1	3	-	-
PC33. Integrating centralized Access Control System with Building Automation System control Panel	1	2	-	-
Controlling and Supervising Building Automation Systems using Control Panel	**4**	**8**	**-**	**-**
PC34. Testing of overall integrated Building Automation System through control panel	1	2	-	-
PC35. Ensuring proper working and controlling of every installed device using control panel	1	2	-	-
PC36. Assuring 100% satisfaction from the customer after installation of BAS	1	2	-	-
PC37. Troubleshooting errors if the system is not working as per the requirements	1	2	-	-
NOS Total	**46**	**79**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IAS/N2104
NOS Name	Integrating and Controlling Building automation System
Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Occupation	Product Engineering/System Design
NSQF Level	5
Credits	2
Version	3.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. identify employability skills required for jobs in various industries

PC2. identify and explore learning and employability portals

Constitutional values – Citizenship

To be competent, the user/individual on the job must be able to:

PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.

PC4. follow environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC5. recognize the significance of 21st Century Skills for employment

PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC7. use basic English for everyday conversation in different contexts, in person and over the telephone

PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English

PC9. write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

To be competent, the user/individual on the job must be able to:

PC10. understand the difference between job and career

PC11. prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

To be competent, the user/individual on the job must be able to:

PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings

PC13. work collaboratively with others in a team

Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC14. communicate and behave appropriately with all genders and PwD

PC15. escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC16. select financial institutions, products and services as per requirement

PC17. carry out offline and online financial transactions, safely and securely

PC18. identify common components of salary and compute income, expenses, taxes, investments etc

PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC20. operate digital devices and carry out basic internet operations securely and safely

PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively

PC22. use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research

PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion

PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

To be competent, the user/individual on the job must be able to:

PC26. identify different types of customers

PC27. identify and respond to customer requests and needs in a professional manner.

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings

GS3. behave politely and appropriately with all
GS4. how to work in a virtual mode
GS5. perform calculations efficiently
GS6. solve problems effectively
GS7. pay attention to details
GS8. manage time efficiently
GS9. maintain hygiene and sanitization to avoid infection

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	**1**	**1**	**-**	**-**
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
Constitutional values – Citizenship	**1**	**1**	**-**	**-**
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	**2**	**4**	**-**	**-**
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
Basic English Skills	**2**	**3**	**-**	**-**
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
Career Development & Goal Setting	**1**	**2**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
Communication Skills	**2**	**2**	**-**	**-**
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**2**	**-**	**-**
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
Financial and Legal Literacy	**2**	**3**	**-**	**-**
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
Essential Digital Skills	**3**	**4**	**-**	**-**
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Entrepreneurship	**2**	**3**	**-**	**-**
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
Customer Service	**1**	**2**	**-**	**-**
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**2**	**3**	**-**	**-**
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

IAS/N8014: Design, install, & Provide Technical Support for the HVAC System

Description

This OS unit is about Design, Installation, Supervision, Testing and providing Technical Support of HVAC Systems involved in building automation systems.

Scope

The scope covers the following :

- This unit/task covers the following: Capturing the requirements of HVAC Systems by site survey Suggesting and taking approval from the customer for HVAC Systems Installing approved HVAC components as per site requirements Wiring Electrical and Electronics components as per specifications Testing of HVAC systems Providing Technical Support for HVAC Systems

Elements and Performance Criteria

Capturing the requirements of HVAC Systems by site survey

To be competent, the user/individual on the job must be able to:

PC1. Capturing work requirements of the client by site survey

PC2. Developing BOQ according to the requirement of the client

PC3. Creating 2D models using BAS Software

PC4. Developing program on BAS Tools for HVAC

PC5. Developing program on BAS Tools based on Logic gates

PC6. Developing program related to Air Conditioning on BAS Tools

PC7. Managing wiring of components in AC Drives and Soft Starters

Suggesting and takingapproval from the customer for HVAC Systems

To be competent, the user/individual on the job must be able to:

PC8. Suggesting appropriate HVAC components to the customer according to the site

PC9. Assisting the customer in choosing different types of technologies and specifications used in HVAC Systems

PC10. Taking approval from the customer

PC11. Maintaining complete documentation of the components to be installed

Installing approvedHVAC components as per site requirements

To be competent, the user/individual on the job must be able to:

PC12. Collecting and checking of components at customer premises as per checklist

PC13. Installing HVAC components including VFD at site as per the requirement

PC14. Installing AHU (Air Handling Unit)

PC15. Installing Chiller

PC16. Installing Sensors

PC17. Installing VAV (Variable Air Volume), TFA (Treated Fresh Air) etc.

Wiring Electrical and Electronics components as per the requirements

To be competent, the user/individual on the job must be able to:

PC18. Wiring Power Supplies, Earthing & Grounding

PC19. Wiring and connecting Shielded & Unshielded Cables, Cable Gauges & AWG sizes

PC20. Wiring of HVAC hardware PC

Testing of HVAC systems

To be competent, the user/individual on the job must be able to:

PC21. Testing of installed HVAC System

PC22. Ensuring proper working of the installed HVAC System

PC23. Assuring 100% satisfaction from the customer after installation

PC24. Troubleshooting errors if the system is not working as per the requirements

Providing Technical Support for HVAC Systems

To be competent, the user/individual on the job must be able to:

PC25. Calculating total number of HVAC controllers as per I/O summary

PC26. Managing refrigeration process needed for the site by BAS controller

PC27. Managing Wiring and drawings of Components used in Centralized Air-Conditioning

PC28. Providing Technical Support for HVAC functions using BAS controller

PC29. Calculating Heat Load

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Company policies on delivery standards, services and warranty

KU2. Company sales and after sales policies

KU3. Sequence of reporting for each process

KU4. Companies policies on incentives and reimbursement

KU5. Latest technologies introduced by the company for Fire Alarm Systems

KU6. Complete knowledge of the HVAC processing consideration

KU7. Operation of machinery and equipment being used for HVAC process

KU8. Engineering drawings of existing layout/equipment

KU9. Electrical/electronic standard parts

KU10. Understanding Basic concepts of Electrical and Electronics Engineering

KU11. Knowledge of different detection technologies used in fire alarm systems

KU12. Material and information flow of HVAC process

KU13. Understanding Installation procedures given in the manuals

KU14. Power Requirements by different components used in HVAC

KU15. Knowledge of safety measures and quality standards of fire alarm components

KU16. Knowledge of integrating other systems with fire alarm systems

KU17. Compete knowledge of fire alarm system works under considerations

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. Compile all the data related to main and auxiliary equipment required in the process

GS2. Compile all the data related to study of existing facility in the form of presentation and reports

GS3. Record Faults in instruments.

GS4. Read the equipment literature and understand its features

GS5. Read the information displayed at the workplace

GS6. Discuss task lists, schedules, and work-loads with co-workers

GS7. Communicate the new equipment and facilities design activities to the higher management in meetings for their support

GS8. Spell out effectively the findings of the study to the higher management in meetings

GS9. Interact with coworkers and gather all the information related to process requirement

GS10. Make decisions pertaining to the concerned area of work

GS11. Plan the execution of entire project detailing long term and short term activities so that he/she can finish the project in the stipulated time.

GS12. Organize expert support from/within outside organization for new technology and feasibility studies.

GS13. Understand real needs of the customer and suggest most appropriate solution

GS14. Support customer when they need help

GS15. Think through the problem, evaluate the possible solution(s) and suggest an optimum/best possible solution(s)

GS16. Identify immediate or temporary solutions to resolve delays

GS17. Use the existing information to arrive at actionable decision points

GS18. Use the existing information for improving the customer satisfaction

GS19. Use the existing information to optimize solution and company business

GS20. Analyze problems and identify causes and possible solutions

GS21. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action

GS22. Analyze the way in which the existing facility layout is in operation and think of more economic and feasible measures for existing layout modification.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Capturing the requirements of HVAC Systems by site survey	**10**	**12**	**-**	**-**
PC1. Capturing work requirements of the client by site survey	1	2	-	-
PC2. Developing BOQ according to the requirement of the client	1	2	-	-
PC3. Creating 2D models using BAS Software	2	2	-	-
PC4. Developing program on BAS Tools for HVAC	1	2	-	-
PC5. Developing program on BAS Tools based on Logic gates	2	2	-	-
PC6. Developing program related to Air Conditioning on BAS Tools	1	1	-	-
PC7. Managing wiring of components in AC Drives and Soft Starters	2	1	-	-
Suggesting and takingapproval from the customer for HVAC Systems	**6**	**10**	**-**	**-**
PC8. Suggesting appropriate HVAC components to the customer according to the site	2	3	-	-
PC9. Assisting the customer in choosing different types of technologies and specifications used in HVAC Systems	2	2	-	-
PC10. Taking approval from the customer	1	2	-	-
PC11. Maintaining complete documentation of the components to be installed	1	3	-	-
Installing approvedHVAC components as per site requirements	**4**	**4**	**-**	**-**
PC12. Collecting and checking of components at customer premises as per checklist	1	-	-	-
PC13. Installing HVAC components including VFD at site as per the requirement	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Installing AHU (Air Handling Unit)	1	1	-	-
PC15. Installing Chiller	-	1	-	-
PC16. Installing Sensors	-	1	-	-
PC17. Installing VAV (Variable Air Volume), TFA (Treated Fresh Air) etc.	1	-	-	-
Wiring Electrical and Electronics components as per the requirements	**8**	**13**	**-**	**-**
PC18. Wiring Power Supplies, Earthing & Grounding	4	4	-	-
PC19. Wiring and connecting Shielded & Unshielded Cables, Cable Gauges & AWG sizes	2	4	-	-
PC20. Wiring of HVAC hardware PC	2	5	-	-
Testing of HVAC systems	**8**	**13**	**-**	**-**
PC21. Testing of installed HVAC System	3	5	-	-
PC22. Ensuring proper working of the installed HVAC System	2	3	-	-
PC23. Assuring 100% satisfaction from the customer after installation	2	2	-	-
PC24. Troubleshooting errors if the system is not working as per the requirements	1	3	-	-
Providing Technical Support for HVAC Systems	**4**	**8**	**-**	**-**
PC25. Calculating total number of HVAC controllers as per I/O summary	1	1	-	-
PC26. Managing refrigeration process needed for the site by BAS controller	-	1	-	-
PC27. Managing Wiring and drawings of Components used in Centralized Air-Conditioning	-	1	-	-
PC28. Providing Technical Support for HVAC functions using BAS controller	-	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC29. Calculating Heat Load	3	2	-	-
NOS Total	**40**	**60**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IAS/N8014
NOS Name	Design, install, & Provide Technical Support for the HVAC System
Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Occupation	Product Engineering/System Design
NSQF Level	5
Credits	4
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

IAS/N8015: Design Install and Provide Technical Support for Fire Alarm System

Description

This OS unit is about design, installation, supervision and testing of Fire Alarm Systems in building automation systems.

Scope

The scope covers the following :

- This unit/task covers the following:
- Capturing the requirements of Fire Alarm Systems by site survey
- Suggesting and taking approval from the customer for Fire Alarm System
- Installing approved Fire Alarm components as per site requirements
- Wiring Electrical and Electronics components as per specifications Testing of new systems at customer premises
- Providing Technical Support for Fire Alarm Systems at the site

Elements and Performance Criteria

Capturing the requirements of Fire Alarm Systems by site survey

To be competent, the user/individual on the job must be able to:

PC1. Capturing work requirements of the client by site survey

PC2. Developing BOQ according to the requirement of the client

PC3. Assisting customer about different types of technologies used in FAS according to the need of site

PC4. Ensuring that Suggesting components matches to customers requirement

PC5. Assisting the customers about the company policies towards services and warranty

PC6. Managing proper documentation of site survey and customers requirements

Suggesting and taking approval from the customer for Fire Alarm Systems

To be competent, the user/individual on the job must be able to:

PC7. Suggesting appropriate FAS components to the customer according to the site

PC8. Assisting the customers about Fire Alarm systems with their specifications

PC9. Taking approval for installing FAS components from the customer

PC10. Preparing and assembling FAS components as per the requirement

PC11. Creating check list before going to the site for installation

PC12. Maintaining complete documentation of the components to be installed

Installing approvedFire Alarm components as per site requirements

To be competent, the user/individual on the job must be able to:

PC13. Collecting and checking of components before moving to customer premises

PC14. Assisting technicians for checking hardware components before FAS Installation

PC15. Replacing FAS components if found malfunctioning

PC16. Preparing Checklist and ensure the availability of every component before installation

PC17. Installing FAS components at the customers site

PC18. Installing fire Detection components as per site requirement

PC19. Installing Heat/RoR Detectors, Smoke Detectors and Multi Criteria detectors as per requirement

Wiring Electrical andElectronicscomponents as per the requirements

To be competent, the user/individual on the job must be able to:

PC20. Wiring Power Supplies, Earthing & Grounding

PC21. Wiring and connecting Shielded & Unshielded Cables, Cable Gauges, SWG & AWG sizes

PC22. Ensuring adequate length of connecting cables as per the requirements

PC23. Wiring of FAS hardware

PC24. Using proper terminals as prescribed for joining cables

PC25. Use power cable for connecting power supply with proper rating

Testing of newsystems at customer site

To be competent, the user/individual on the job must be able to:

PC26. Testing installed FAS components at customer premises

PC27. Ensuring proper working of every component

PC28. Ensuring proper working of FAS systems before leaving the site and explaining the customer how to operate the system properly

PC29. Assuring 100% satisfaction from the customer after installation

PC30. Troubleshooting the errors if the system is not working as per the requirements

Providing TechnicalSupport for Fire AlarmSystems at the site

To be competent, the user/individual on the job must be able to:

PC31. Providing Technical Support for Fire Detection & Alarm System as per Fire Life cycle and Class of Fire

PC32. Providing Technical Support for intelligent Fire Panels & conventional Fire Panels installed

PC33. Managing Detector & Device Wiring Schema

PC34. Integrating Fireman's Telephony & Talkback system with fire alarm

PC35. Selecting Fire Safety Strategies for prevention

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Company policies on delivery standards, services and warranty

KU2. Company sales and after sales policies

KU3. Sequence of reporting for each process

KU4. Companies policies on incentives and reimbursement

KU5. Latest technologies introduced by the company for Fire Alarm Systems

KU6. Complete knowledge of the FAS process in consideration

KU7. Operation of machinery and equipment being used for FAS process

KU8. Engineering drawings of existing layout/equipment
KU9. Electrical/electronic standard parts
KU10. Understanding Basic concepts of Electrical and Electronics Engineering
KU11. Knowledge of different detection technologies used in fire alarm systems
KU12. Material and information flow of FAS process
KU13. Understanding Installation procedures given in the manuals
KU14. Power Requirements by different components used in FAS
KU15. Knowledge of safety measures and quality standards of fire alarm components
KU16. Knowledge of integrating other systems with fire alarm systems
KU17. Compete knowledge of fire alarm system works under considerations

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. Compile all the data related to main and auxiliary equipment required in the process
GS2. Compile all the data related to study of existing facility in the form of presentation and reports
GS3. Record Faults in instruments.
GS4. Read the equipment literature and understand its features
GS5. Read the information displayed at the workplace
GS6. Discuss task lists, schedules, and work-loads with co-workers
GS7. Communicate the new equipment and facilities required to the higher management in meetings for their support
GS8. Spell out effectively the findings of the study to the higher management in meetings
GS9. Interact with coworkers and gather all the information related to process requirement
GS10. Make decisions pertaining to the concerned area of work
GS11. Plan the execution of entire project detailing long term and short term activities so that he/she can finish the project in the stipulated time.
GS12. Organize expert support from/within outside organization for new technology and feasibility studies.
GS13. Understand real needs of the customer and suggest most appropriate solution
GS14. Support customer when they need help
GS15. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)
GS16. Identify immediate or temporary solutions to resolve delays
GS17. Use the existing information to arrive at actionable decision points
GS18. Use the existing information for improving the customer satisfaction
GS19. Use the existing information to optimize solution and company business
GS20. Analyze problems and identify causes and possible solutions
GS21. Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action

GS22. Analyze the way in which the existing facility layout is in operation and think of more economic and feasible measures for existing layout modification.

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Capturing the requirements of Fire Alarm Systems by site survey	**10**	**12**	**-**	**-**
PC1. Capturing work requirements of the client by site survey	1	2	-	-
PC2. Developing BOQ according to the requirement of the client	2	2	-	-
PC3. Assisting customer about different types of technologies used in FAS according to the need of site	2	2	-	-
PC4. Ensuring that Suggesting components matches to customers requirement	2	2	-	-
PC5. Assisting the customers about the company policies towards services and warranty	2	2	-	-
PC6. Managing proper documentation of site survey and customers requirements	1	2	-	-
Suggesting and taking approval from the customer for Fire Alarm Systems	**6**	**10**	**-**	**-**
PC7. Suggesting appropriate FAS components to the customer according to the site	1	2	-	-
PC8. Assisting the customers about Fire Alarm systems with their specifications	1	3	-	-
PC9. Taking approval for installing FAS components from the customer	1	2	-	-
PC10. Preparing and assembling FAS components as per the requirement	1	1	-	-
PC11. Creating check list before going to the site for installation	-	-	-	-
PC12. Maintaining complete documentation of the components to be installed	2	2	-	-
Installing approvedFire Alarm components as per site requirements	**5**	**8**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. Collecting and checking of components before moving to customer premises	1	1	-	-
PC14. Assisting technicians for checking hardware components before FAS Installation	-	1	-	-
PC15. Replacing FAS components if found malfunctioning	1	1	-	-
PC16. Preparing Checklist and ensure the availability of every component before installation	1	1	-	-
PC17. Installing FAS components at the customers site	1	1	-	-
PC18. Installing fire Detection components as per site requirement	1	1	-	-
PC19. Installing Heat/RoR Detectors, Smoke Detectors and Multi Criteria detectors as per requirement	-	2	-	-
Wiring Electrical andElectronicscomponents as per the requirements	**8**	**13**	**-**	**-**
PC20. Wiring Power Supplies, Earthing & Grounding	1	2	-	-
PC21. Wiring and connecting Shielded & Unshielded Cables, Cable Gauges, SWG & AWG sizes	2	2	-	-
PC22. Ensuring adequate length of connecting cables as per the requirements	1	2	-	-
PC23. Wiring of FAS hardware	1	3	-	-
PC24. Using proper terminals as prescribed for joining cables	1	2	-	-
PC25. Use power cable for connecting power supply with proper rating	2	2	-	-
Testing of newsystems at customer site	**8**	**13**	**-**	**-**
PC26. Testing installed FAS components at customer premises	2	1	-	-
PC27. Ensuring proper working of every component	1	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC28. Ensuring proper working of FAS systems before leaving the site and explaining the customer how to operate the system properly	2	2	-	-
PC29. Assuring 100% satisfaction from the customer after installation	1	3	-	-
PC30. Troubleshooting the errors if the system is not working as per the requirements	2	4	-	-
Providing TechnicalSupport for Fire AlarmSystems at the site	**3**	**4**	**-**	**-**
PC31. Providing Technical Support for Fire Detection & Alarm System as per Fire Life cycle and Class of Fire	1	1	-	-
PC32. Providing Technical Support for intelligent Fire Panels & conventional Fire Panels installed	-	1	-	-
PC33. Managing Detector & Device Wiring Schema	1	-	-	-
PC34. Integrating Fireman's Telephony & Talkback system with fire alarm	1	-	-	-
PC35. Selecting Fire Safety Strategies for prevention	-	2	-	-
NOS Total	**40**	**60**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IAS/N8015
NOS Name	Design Install and Provide Technical Support for Fire Alarm System
Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Occupation	Product Engineering/System Design
NSQF Level	5
Credits	4
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

IAS/N8016: Install and Provide Technical Support for Access Control Systems

Description

This OS unit is about Installing and Commissioning Access Controls Systems at the customers premises

Scope

The scope covers the following :

- This unit/task covers the following: Capturing the requirements of Access Controls Systems by site survey Suggesting and taking approval from the customer for Access Controls System Installing approved Access Controls components as per site requirements Wiring Electrical and Electronics components as per specifications Testing Access Control systems at customer premises Providing Technical Support for Access Controls Systems Achieving Quality and Productivity as per company norms

Elements and Performance Criteria

Capturing the requirements of Access Controls Systems by site survey

To be competent, the user/individual on the job must be able to:

PC1. Capturing work requirements of the client by site survey

PC2. Developing BOQ according to the requirement of the client

PC3. Assisting customer about different types of technologies used in Access Control Systems according to the need of site

PC4. Ensuring that Suggesting components matches to customers requirement

PC5. Assisting the customers about the company policies towards services and warranty

PC6. Managing proper documentation of site survey and customers requirements

Suggesting and taking approval from the customer for Access Controls System

To be competent, the user/individual on the job must be able to:

PC7. Suggesting appropriate Access Controls components to the customer according to the site

PC8. Assisting the customers about technologies used in Access Control systems with their specifications

PC9. Taking approval for installing Access Control Systems from the customer

PC10. Preparing and assembling Access Control Systems components as per the requirement

PC11. Creating check list before going to the site for installation

PC12. Maintaining complete documentation of the components to be installed

Installing approved Access Controls components as per site requirements

To be competent, the user/individual on the job must be able to:

PC13. Collecting and checking of components before moving to customer premises

PC14. Assisting technicians for checking hardware components before Installation

PC15. Replacing components if found malfunctioning

PC16. Preparing Checklist and ensure the availability of every component before installation

PC17. Installing components at the customers site

PC18. Installing hardware such as smart hub, RFID Card, Door control unit, card readers etc.

PC19. Ensuring that components are matching with customers requirement and installed as per standard operating operation

Wiring Electrical and Electronics components as per specifications

To be competent, the user/individual on the job must be able to:

PC20. Determining the type of cable requirement for different types of network type such as USB, twisted pair, etc.

PC21. Ensuring adequate length of cables are available for installation

PC22. Wiring of Power Supplies, Earthing & Grounding.

Testing Access Control systems at customer premises

To be competent, the user/individual on the job must be able to:

PC23. Checking voltage and resistance at all appropriate points of the system

PC24. Correcting alignment and operation of access point hardware

PC25. Verifying access levels

PC26. Checking correct operation of each reader

PC27. Testing Release time for each lock using software

PC28. Checking the signals if doors are held open and signaling is required

PC29. Checking all the data for correct entry in the ACS software

PC30. Checking alarms to display correctly

PC31. Defining level of particular object in the software

Providing Technical Support for Access Controls Systems

To be competent, the user/individual on the job must be able to:

PC32. Identifying the operating system and software requirement for the access control system

PC33. Providing Technical Support for Access controls devices at the customer premises

PC34. Commissioning Access Controls Systems performance as per customer requirements

PC35. Achieving zero errors in commissioning as per company policy

PC36. Identifying problems and alert on time

PC37. Fixing for any errors (if any) identified

PC38. Verifying software implementation checks of input/output I/O points (AI, AO, DI,DO)

PC39. Verifying sensor calibration, control sequence logic, graphics and alarm code

PC40. Performing software functionality test

Achieving Quality and Productivity as per company norms

To be competent, the user/individual on the job must be able to:

PC41. Achieving 100% work schedule as planned for the week

PC42. Meeting 100% daily or monthly target

PC43. Achieving zero component damage

PC44. Keeping work area clean and organized

PC45. Identifying problems and alert in time

PC46. Achieving 100% compliance with health and safety guidelines and rules

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Companys policies on: incentives, delivery standards and personnel management, customer management
KU2. Reporting and documentation processes
KU3. Importance of the individuals role in the workflow
KU4. Reporting structure
KU5. Access Control System process
KU6. Operation of components used in Access Control system
KU7. Engineering drawings and layout of site
KU8. Electrical/electronic/mechanical parts required for the ACS
KU9. Material requirement of components with their specifications
KU10. Equipment used in Access Controls system
KU11. Knowledge of Graphic Generation Tools in BAS
KU12. Understanding of Direct Digital Controllers in BAS
KU13. Knowledge of communication between ACS and other devices
KU14. Knowledge of programming in BAS softwares
KU15. Knowledge of devices communication protocols
KU16. Knowledge of integrating communication protocols
KU17. Knowledge of different types of cables used for data transmission and power transmission
KU18. Power requirements of hardware
KU19. Different types of access controls hardware available in the market

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. Preparing indents and list of equipment required for the specified Access Controls System
GS2. Compiling all the related documents as per the requirements
GS3. Record Faults in instruments and submit to the team leader.
GS4. Read warnings, instructions and other text material on product levels, components etc.
GS5. Reading drawings and job sheets or work orders
GS6. Discuss work load with superiors
GS7. Communicate with team leader for proper understanding of the work
GS8. Interact with coworkers and gather all the information related to process requirement
GS9. Make decisions according to the situations
GS10. Plan the execution of entire design activity; long term and short term activities so that he can finish the task activity wise in the stipulated time.
GS11. Organize expert support from/within outside professional environment for new technology and feasibility studies.

GS12. Understand real needs of the customer and suggest appropriate solution
GS13. Support customers when they need help
GS14. Think and provide best possible solution required for the system
GS15. Identify immediate or temporary solutions to resolve delays
GS16. Use the existing information to arrive at actionable decision points
GS17. Use the existing information for improving the customer satisfaction
GS18. Use the existing information to optimize solution and company business
GS19. Analyze problems and identify causes and possible solutions
GS20. Analyze the work flow and suggest superiors to provide improvement for better production

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Capturing the requirements of Access Controls Systems by site survey	**9**	**9**	**-**	**-**
PC1. Capturing work requirements of the client by site survey	2	1	-	-
PC2. Developing BOQ according to the requirement of the client	2	2	-	-
PC3. Assisting customer about different types of technologies used in Access Control Systems according to the need of site	1	2	-	-
PC4. Ensuring that Suggesting components matches to customers requirement	2	1	-	-
PC5. Assisting the customers about the company policies towards services and warranty	1	1	-	-
PC6. Managing proper documentation of site survey and customers requirements	1	2	-	-
Suggesting and taking approval from the customer for Access Controls System	**6**	**8**	**-**	**-**
PC7. Suggesting appropriate Access Controls components to the customer according to the site	1	2	-	-
PC8. Assisting the customers about technologies used in Access Control systems with their specifications	1	1	-	-
PC9. Taking approval for installing Access Control Systems from the customer	1	1	-	-
PC10. Preparing and assembling Access Control Systems components as per the requirement	1	1	-	-
PC11. Creating check list before going to the site for installation	1	2	-	-
PC12. Maintaining complete documentation of the components to be installed	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Installing approved Access Controls components as per site requirements	**9**	**17**	**-**	**-**
PC13. Collecting and checking of components before moving to customer premises	1	1	-	-
PC14. Assisting technicians for checking hardware components before Installation	1	1	-	-
PC15. Replacing components if found malfunctioning	1	3	-	-
PC16. Preparing Checklist and ensure the availability of every component before installation	2	4	-	-
PC17. Installing components at the customers site	2	3	-	-
PC18. Installing hardware such as smart hub, RFID Card, Door control unit, card readers etc.	1	3	-	-
PC19. Ensuring that components are matching with customers requirement and installed as per standard operating operation	1	2	-	-
Wiring Electrical and Electronics components as per specifications	**3**	**6**	**-**	**-**
PC20. Determining the type of cable requirement for different types of network type such as USB, twisted pair, etc.	1	1	-	-
PC21. Ensuring adequate length of cables are available for installation	1	2	-	-
PC22. Wiring of Power Supplies, Earthing & Grounding.	1	3	-	-
Testing Access Control systems at customer premises	**4**	**10**	**-**	**-**
PC23. Checking voltage and resistance at all appropriate points of the system	-	1	-	-
PC24. Correcting alignment and operation of access point hardware	1	1	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. Verifying access levels	-	1	-	-
PC26. Checking correct operation of each reader	1	1	-	-
PC27. Testing Release time for each lock using software	-	1	-	-
PC28. Checking the signals if doors are held open and signaling is required	1	-	-	-
PC29. Checking all the data for correct entry in the ACS software	-	1	-	-
PC30. Checking alarms to display correctly	1	2	-	-
PC31. Defining level of particular object in the software	-	2	-	-
Providing Technical Support for Access Controls Systems	**4**	**5**	**-**	**-**
PC32. Identifying the operating system and software requirement for the access control system	1	-	-	-
PC33. Providing Technical Support for Access controls devices at the customer premises	-	1	-	-
PC34. Commissioning Access Controls Systems performance as per customer requirements	1	-	-	-
PC35. Achieving zero errors in commissioning as per company policy	-	1	-	-
PC36. Identifying problems and alert on time	1	-	-	-
PC37. Fixing for any errors (if any) identified	-	1	-	-
PC38. Verifying software implementation checks of input/output I/O points (AI, AO, DI,DO)	1	-	-	-
PC39. Verifying sensor calibration, control sequence logic, graphics and alarm code	-	1	-	-
PC40. Performing software functionality test	-	1	-	-
Achieving Quality and Productivity as per company norms	**5**	**5**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC41. Achieving 100% work schedule as planned for the week	1	-	-	-
PC42. Meeting 100% daily or monthly target	-	1	-	-
PC43. Achieving zero component damage	1	-	-	-
PC44. Keeping work area clean and organized	-	1	-	-
PC45. Identifying problems and alert in time	2	1	-	-
PC46. Achieving 100% compliance with health and safety guidelines and rules	1	2	-	-
NOS Total	**40**	**60**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IAS/N8016
NOS Name	Install and Provide Technical Support for Access Control Systems
Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Occupation	Product Engineering/System Design
NSQF Level	5
Credits	3
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

IAS/N8012: Integration of Smart Technologies in HVAC,Lighting, Security and other building Automation

Description

This NOS unit is about to Integrate Smart Technologies in HVAC, lighting, security, and other building automation systems.

Scope

The scope covers the following :

- Assessing the specific operational requirements of Smart Technologies.
- Developing integrated platforms that centralize control and monitoring of all building systems.
- Deploying advanced monitoring systems that provide real-time insights.

Elements and Performance Criteria

Assessing the specific operational requirements of Smart Technologies

To be competent, the user/individual on the job must be able to:

PC1. Evaluate the ability of new smart technologies to integrate seamlessly with existing building management systems (BMS).

PC2. Assess the intuitiveness and user-friendliness of the system interfaces for operators and occupants.

PC3. Check the system's capability for real-time analytics and reporting features.

PC4. Examine the ability of the system to scale up or down based on changing operational needs or technological advancements.

PC5. Analyze the total cost of ownership, including upfront costs, ongoing maintenance, and operational savings.

Developing integrated platforms that centralize control and monitoring of all building systems

To be competent, the user/individual on the job must be able to:

PC6. Develop a user-friendly interface that provides real-time monitoring and control of all building systems.

PC7. Implement a central control unit that can process inputs from various building systems and execute commands accordingly.

PC8. Define user roles and permissions to limit access to sensitive data and functions.

PC9. Incorporate tools for tracking energy usage and generating reports to support energy efficiency initiatives.

PC10. Regularly assess cybersecurity measures and aim for zero breaches or significant incidents.

Deploying advanced monitoring systems that provide real-time insights.

To be competent, the user/individual on the job must be able to:

PC11. Enhance the Capability to manage all building systems (HVAC, lighting, security) from a single interface.

PC12. Implement systems to analyze and optimize energy consumption across all building systems.

PC13. Measure the percentage of devices successfully integrated with the monitoring system.
PC14. Track the rate of successfully identified vs. undetected anomalies in system performance.
PC15. Evaluate the system's ability to incorporate future advancements in smart technologies.
PC16. Develop Automated alerts for users regarding system performance anomalies or failures.
PC17. Identify and connect all relevant data sources, including sensors, controllers, and monitoring systems.
PC18. Utilize a centralized database to securely store collected data for easy retrieval and analysis.
PC19. Develop automated report generation capabilities that can produce performance reports on a scheduled basis or upon request.
PC20. Create user-friendly dashboards that visualize system performance data in real-time, with options for drill-downs into detailed reports.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. Understanding the key components of HVAC systems (e.g., chillers, boilers, ductwork, and control systems) and their operational dynamics
KU2. Knowledge of variable refrigerant flow (VRF), smart thermostats, and energy recovery ventilators (ERVs).
KU3. Familiarity with various control methods, such as direct digital control (DDC), modulating control, and on/off control.
KU4. Understanding different types of lighting (LED, fluorescent, etc.) and smart technologies (e.g., occupancy sensors, daylight harvesting).
KU5. Knowledge of lighting control protocols such as DALI (Digital Addressable Lighting Interface) or Zigbee.
KU6. Familiarity with how lighting systems integrate with building automation systems (BAS) for dynamic controls and scheduled operations.
KU7. Knowledge of technologies like RFID, biometric scanners, and keyless entry systems
KU8. Understanding of IP cameras, motion detectors, and advanced surveillance monitoring systems.
KU9. Familiarity with intrusion detection systems and alarm management software.
KU10. Understanding of BACnet, Modbus, LonWorks, and MQTT communication protocols for data exchange between devices.

Generic Skills (GS)

User/individual on the job needs to know how to:

GS1. communicating effectively in a global organization
GS2. collaborating extensively within the organization to achieve common goals
GS3. collaborating with customers to understand their needs and translating that into solution specifications
GS4. collaborating with partners and vendors to achieve the organization goals

GS5. negotiation skills with customers, vendors, across disciplines and roles

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Assessing the specific operational requirements of Smart Technologies	**5**	**20**	**-**	**-**
PC1. Evaluate the ability of new smart technologies to integrate seamlessly with existing building management systems (BMS).	1	4	-	-
PC2. Assess the intuitiveness and user-friendliness of the system interfaces for operators and occupants.	1	4	-	-
PC3. Check the system's capability for real-time analytics and reporting features.	1	4	-	-
PC4. Examine the ability of the system to scale up or down based on changing operational needs or technological advancements.	1	4	-	-
PC5. Analyze the total cost of ownership, including upfront costs, ongoing maintenance, and operational savings.	1	4	-	-
Developing integrated platforms that centralize control and monitoring of all building systems	**5**	**20**	**-**	**-**
PC6. Develop a user-friendly interface that provides real-time monitoring and control of all building systems.	1	4	-	-
PC7. Implement a central control unit that can process inputs from various building systems and execute commands accordingly.	1	4	-	-
PC8. Define user roles and permissions to limit access to sensitive data and functions.	1	4	-	-
PC9. Incorporate tools for tracking energy usage and generating reports to support energy efficiency initiatives.	1	4	-	-
PC10. Regularly assess cybersecurity measures and aim for zero breaches or significant incidents.	1	4	-	-
Deploying advanced monitoring systems that provide real-time insights.	**20**	**30**	**-**	**-**

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. Enhance the Capability to manage all building systems (HVAC, lighting, security) from a single interface.	2	3	-	-
PC12. Implement systems to analyze and optimize energy consumption across all building systems.	2	3	-	-
PC13. Measure the percentage of devices successfully integrated with the monitoring system.	2	3	-	-
PC14. Track the rate of successfully identified vs. undetected anomalies in system performance.	2	3	-	-
PC15. Evaluate the system's ability to incorporate future advancements in smart technologies.	2	3	-	-
PC16. Develop Automated alerts for users regarding system performance anomalies or failures.	2	3	-	-
PC17. Identify and connect all relevant data sources, including sensors, controllers, and monitoring systems.	2	3	-	-
PC18. Utilize a centralized database to securely store collected data for easy retrieval and analysis.	2	3	-	-
PC19. Develop automated report generation capabilities that can produce performance reports on a scheduled basis or upon request.	2	3	-	-
PC20. Create user-friendly dashboards that visualize system performance data in real-time, with options for drill-downs into detailed reports.	2	3	-	-
NOS Total	**30**	**70**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IAS/N8012
NOS Name	Integration of Smart Technologies in HVAC,Lighting, Security and other building Automation
Sector	Instrumentation
Sub-Sector	
Occupation	Product Engineering/System Design
NSQF Level	5.0
Credits	1
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.

2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.

3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).

4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

5. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Minimum Aggregate Passing % at QP Level : 70

(**Please note**: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
IAS/N2103.Install and Provide Technical Support for CCTV Surveillance Systems	55	95	-	-	150	20
IAS/N2104.Integrating and Controlling Building automation System	46	79	-	-	125	20
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	0	0	50	10
IAS/N8014.Design, install, & Provide Technical Support for the HVAC System	40	60	-	-	100	20
IAS/N8015.Design Install and Provide Technical Support for Fire Alarm System	40	60	-	-	100	10
IAS/N8016.Install and Provide Technical Support for Access Control Systems	40	60	-	-	100	10
IAS/N8012.Integration of Smart Technologies in HVAC,Lighting, Security and other building Automation	30	70	-	-	100	10
Total	**271**	**454**	**-**	**-**	**725**	**100**

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.