QUALIFICATION FILE

MEP Supervisor - Maintenance

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship
☐ Upskilling ☐ Dual/Flexi Qualification ☒ For ToT ☒ For ToA

☐ General ☒ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills ☐ OEM
NCrF/NSQF Level: 5

Submitted By:

The Institution of Civil Engineers
Address: 309-310, Suncity Trade Tower, Sector-21, Gurugram, Haryana-122016

Table of Contents

Section 1: Basic Details

1.	**Qualification Name**	**MEP Supervisor - Maintenance**	
2.	**Sector/s**	**Construction**	
3.	**Type of Qualification: ☒ New ☐ Revised ☐ Has Electives/Options ☐OEM**	**NQR Code & version of existing/previous qualification:** *(change to previous, once approved)*	**Qualification Name of existing/previous version:**
4.	**a. OEM Name** **b. Qualification Name** (*Wherever applicable)*	**NA**	
5.	**National Qualification Register (NQR) Code&Version** (*Will be issued after NSQC approval)*		**6. NCrF/NSQFLevel:** *5*
7.	**Award (Certificate/Diploma/Advance Diploma/Any Other***(Wherever applicable specify multiple entry/exits also & provide details in annexure)*	Certificate	
8.	**Brief Description of the Qualification**	A MEP Supervisor - Maintenancesupervises the maintenance and repair of Mechanical, Electrical and Plumbing (MEP) systems in a building. The individual also uses computer and applies appropriate IT skills in work. The person may optionally supervise the maintenance of the infrastructure and use of the Building Management System (BMS).	
9.	**Eligibility Criteria for Entry for Student/Trainee/Learner/Employee**	**a. Entry Qualification & Relevant Experience:**	

S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)

		1. 2-year Diploma (after12th) in Civil OR Mechanical OR Electrical — 1-year relevant experience 2. 3-year Diploma (after 10th) in Civil OR Mechanical OR Electrical — 1.5-year relevant experience 3. 12th grade pass — 3-year relevant experience 4. Previous relevant Qualification of NSQF Level 4.0 — 3-year relevant experience 5. Previous relevant qualification of NSQF Level 4.5 — 1.5-year relevant experience *Relevant experience in Civil or Mechanical or Electrical b. **Age:**20 years
10.	**Credits Assigned to this Qualification, Subject to Assessment***(as per National Credit Framework (NCrF))*	20 — **11. Common Cost Norm Category (I/II/III)** *(wherever applicable)*:I
12.	**Any Licensing requirements for Undertaking Training on This Qualification***(wherever applicable)*	
13.	**Training Duration by Modes of Training Delivery** *(Specify **Total Duration** as per selected training delivery modes and as per requirement of the qualification)*	☒**Offline** ☐**Online** ☐**Blended**

Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
Classroom (offline)	150	180	180		510
Online					

(Refer Blended Learning Annexure for details)

Maximum Duration:

☒**Offline** ☐**Online** ☐**Blended**

Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
Classroom (offline)	180	210	210		600
Online					

(Refer Blended Learning Annexure for details)

14.	**Aligned to NCO/ISCO Code/s** *(if no code is available mention the same)*	*NCO-2015/3123.0302 & 3123.0400 & 3122.5600*
15.	**Progression path after attaining the qualification** *(Please show Professional and Academic progression)*	Supervisor – MEP (L5) → MEP Site Engineer (L6)

16.	**Other Indian languages in which the Qualification & Model Curriculum are being submitted**	**Hindi**	
17.	**Is similar Qualification(s) available on NQR-if yes, justification for this qualification**	**☐ Yes ☒ No URLs of similar Qualifications:**	
18.	**Is the Job Role Amenable to Persons with Disability**	**☐ Yes ☒ No** **If "Yes", specify applicable type of Disability:**	
19.	**How Participation of Women will be Encouraged**	**To encourage women to participate in Mechanical, Electrical and Plumbing (MEP) job roles, it is important to provide education, mentorship, and networking opportunities, as well as training and development programs. Flexible work arrangements and promoting successful women in Mechanical, Electrical and Plumbing (MEP) can also inspire and encourage women to pursue careers in this field. Creating a culture of inclusion and diversity can help women feel welcome and valued in Mechanical, Electrical and Plumbing (MEP) job roles, through policies and practices that support work-life balance, equal pay and promotion opportunities, and a safe and respectful workplace.**	
20.	**Are Greening/ Environment Sustainability Aspects Covered** *(Specify the NOS/Module which covers it)*	**☒ Yes ☐ No** **(Covered in DGT/VSQ/N0102)**	
21.	**Is Qualification Suitable to be Offered in Schools/Colleges**	**Schools☐ Yes ☒ No Colleges ☒ Yes ☐ No**	
22.	**Name and Contact Details of Submitting / Awarding Body SPOC** *(In case of CS or MS, provide details of both Lead AB & Supporting ABs)*	**Name:Maya Thakur** **Email: dg@ice.net.in Contact No.: +91 9717900050** **Website: www.ice.net.in**	
23.	**Final Approval Date by NSQC:** *TBD*	**24. Validity Duration: 3 Years post NSQC Approval**	**25. Next Review Date:** *TBD*

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

***Th.**-Theory **Pr.**-Practical **OJT**-On the Job Training **Man.**-Mandatory **Rec.**-Recommended **Proj.**-Project*

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.	Supervise themaintenance and repair of mechanical systems	ICE/N1101, v1.0	Core	5	4	20	40	60	-	120	30	50	-	20	100	30
2.	Supervise the electrical works	ICE/N1102, v1.0	Core	5	5	30	60	60	-	150	30	50	-	20	100	30
3.	Supervise the maintenance and repair of the plumbing system	ICE/N1103, v1.0	Core	5	4	20	40	60	-	120	30	50	-	20	100	20
4.	Apply computer and IT skills at work	ICE/N1104, v1.0	Non - Core	5	1	10	20	-	-	30	30	50	-	20	100	5
5.	Ensure adherence to health and safety guidelines at work	ICE/N1105, v1.0	Non-Core	5	1	10	20	-	-	30	30	50	-	20	100	5
6.	Employability Skills (60 Hours)	DGT/VSQ/N0102, v1.0	Non-Core	4	2	60	-	-	-	60	20	30	-	-	50	10
Duration (in Hours) / Total Marks					17	150	180	180	-	510	170	280		100	550	100

Optional NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

***Th.**-Theory **Pr.**-Practical **OJT**-On the Job Training **Man.**-Mandatory **Rec.**-Recommended **Proj.**-Project*

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.	Supervise the use and control of BMS	ICE/N1106, v1.0	Core	5	3	30	30	30	-	90	30	50	-	20	100	20

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
Duration (in Hours) / Total Marks					3	30	30	30	-	90	30	50	-	20	100	20

Assessment - Minimum Qualifying Percentage

*Please specify**any one** of the following:*

Minimum Pass Percentage –Aggregate at qualification level: 70%*(Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)*

Minimum Pass Percentage –NOS/Module-wise:70%*(Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)*

Section 3: Training Related

1.	**Trainer's Qualification and experience in the relevant sector (in years)***(as per NCVET guidelines)*	B. Tech in Civil Engineering or Electrical Engineering or Mechanical Engineering with 3 years of experience in Mechanical, Electrical and Plumbing (MEP) Diploma in Civil Engineering or Electrical Engineering or Mechanical Trades with 5 years of experience in Mechanical, Electrical and Plumbing (MEP) ITI in Civil or Mechanical or Electrician or Electrical Technician with 7 years of experience in Mechanical, Electrical and Plumbing (MEP) General BA/BSc/ EX-Army/ 12th in Civil or Mechanical or Electrical Trades or Electrical Systems with 7 years of experience in Mechanical, Electrical and Plumbing (MEP)
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	B. Tech in Civil Engineering or Electrical Engineering or Mechanical Engineering with 5 years of experience in Mechanical, Electrical and Plumbing (MEP) Diploma in Civil Engineering or Electrical Engineering or Mechanical Trades with 7 years of experience in Mechanical, Electrical and Plumbing (MEP)
3.	**Tools and Equipment Required for Training**	☒Yes ☐No (*If "Yes", details to be provided in Annexure)*
4.	**In Case of Revised Qualification, Details of Any Upskilling Required for Trainer**	

Section 4: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	B. Tech in Civil Engineering or Electrical Engineering or Mechanical Engineering with 3 years of experience in Mechanical, Electrical and Plumbing (MEP) Diploma in Civil Engineering or Electrical Engineering or Mechanical Trades with 6 years of experience in Mechanical, Electrical and Plumbing (MEP) ITI in Civil or Mechanical, Electrician or Electrical Technician with 8 years of experience in Mechanical, Electrical and Plumbing (MEP)
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	B. Tech in Civil Engineering or Electrical Engineering or Mechanical Engineering with 2 years of experience in Mechanical, Electrical and Plumbing (MEP) Diploma in Civil Engineering or Electrical Engineering or Mechanical Trades with 3 years of experience in Mechanical, Electrical and Plumbing (MEP) ITI in Civil orMechanical or Electrician or Electrical Technician with 6 years of experience in Mechanical, Electrical and Plumbing (MEP)
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	B. Tech in Civil Engineering or Electrical Engineering or Mechanical Engineering with 5 years of experience in Mechanical, Electrical and Plumbing (MEP) Diploma in Civil Engineering or Electrical Engineering or Mechanical Trades with 7 years of experience in Mechanical, Electrical and Plumbing (MEP)
4.	**Assessment Mode***(Specify the assessment mode)*	**Online and Offline**
5.	**Tools and Equipment Required for Assessment**	☒ Same as for training ☐ Yes ☐ No *(details to be provided in Annexure-if it is different for Assessment)*

Section 5: Evidence of theneed for the Qualification

Provide Annexure/Supporting documents name.

1.	**Latest Skill Gap Study (not older than 2 years)(Yes/No):**No
2.	**Latest Market Research Reports or any other source (not older than 2years) (Yes/No):**No
3.	**Government /Industry initiatives/ requirement (Yes/No):**No
4.	**Number of Industry validation provided:**31
5.	**Estimated nos. of persons to be trained and employed:**1800
6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments:***In Process* If "No", why:

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	**Annexure:** NCrF/NSQF level justification based on NCrF level/NSQF descriptors *(Mandatory)*	*Annexure-1*
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	*Annexure-2*
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	*Annexure-5*
4.	**Annexure:** Assessment Strategy*(Mandatory)*	*Annexure-6*
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is "Blended Learning")*	*NA*
6.	**Annexure:** Multiple Entry-Exit Details *(Mandatory, in case qualification has multiple Entry-Exit)*	*NA*
7.	**Annexure:** Acronym and Glossary *(Optional)*	*Annexure-7*
8.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	*Yes*
9.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	*Attached*
10.	**Supporting Document:** Occupational Map *(Mandatory)*	*Attached*
11.	**Supporting Document:** Assessment SOP *(Mandatory)*	*Attached*
12.	**Any other document you wish to submit:**	*No*

Annexure 1: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	• Process ofcarrying out electrical and electronic works in the construction sector. • Process of carrying out installation of conduits and LV wiring. • Process of carrying out plumbing work and maintaining the plumbing system. • Process of maintaining the infrastructure and controlling the BMS. • Process of applying computer and Information Technology (IT) skills in work. • Process of maintaining effective communication and coordination at work. • Process of showing hospitality and maintaining safety at work.	As detailed, the entire process followed by a MEP Supervisor - Maintenanceis tocarry out electrical and electronic works, plumbing work, install conduits and LV wiring, maintain infrastructure and control BMS, apply computer and IT skills, maintain effective communication and coordination, and uphold hospitality and safety at work.	5
Professional and Technical Skills/ Expertise/ Professional Knowledge	• Understanding of electricity principles including Ohm's law, resistance, and circuitry • Proficiency in electrical work, power, and energy concepts, including measurement • Knowledge of AC and DC currents, advantages of AC, and effects of electric current • Familiarity with wiring methods, materials, and standards • Ability to design and interpret electrical diagrams and circuits • Know the Indian Electricity (IE) rules for domestic and industrial wiring • Understanding of lighting systems and fixtures • Knowledge of motor types, transformers, and their functioning • Proficiency in basic HVAC principles and maintenance • Competence in operating systems, software applications, and internet usage • Understanding of plumbing materials, layouts,	AMEP Supervisor - Maintenance should have the knowledge of electrical principles, materials, circuitry, power concepts, measurement techniques, and system maintenance, including plumbing, HVAC, LV wiring and computer networking.	5

	and fault troubleshooting.		
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• Select and use appropriate tools and equipment for electrical work. • Examine electrical units, trace short circuits, and measure wires. • Install electrical components for temporary lighting, following specifications. • Perform necessary tests on electrical circuits and install fixtures safely. • Check HVAC components for proper functioning and monitor DG parameters. • Identify and rectify problems with DG operation. • Select the appropriate type and size of conduits based on the wiring requirements • Select appropriate single or three-phase cables based on load requirements • Ensure safety during electrical maintenance and repairs. • Determine plumbing work requirements, select appropriate tools, and plan installations around obstructions. • Test joints and fixtures for proper functioning, and check the installed system for potential problems and faults. • Replace faulty components, perform maintenance tasks efficiently, and ensure quality finishing with minimal material wastage. • Clean work area, dispose of waste responsibly, and follow safety measures and applicable waste management practices. • Select the appropriate tools for infrastructure management and estimate the required quantity of materials. • Use appropriate software for monitoring the building automation system and recording incidents. • Operate and control various components such as power supply systems, locks, alarms, etc.	As indicated, the skill set is required to efficiently and safely carry out a wide range of tasks related to electrical, plumbing, and infrastructure maintenance, as well as building automation and system monitoring, using appropriate tools, equipment, and software applications.	5

	• Prepare and fix door and window frames, including assessing size, type, and material. • Dismantle infrastructure as necessary and carry out regular maintenance on equipment. • Lay floor tiling, finish plastering and flooring, and clean and polish different surfaces/floors as needed. • Use different types of Operating Systems (OS). • Determine the functions of different networking components.		
Broad Learning Outcomes/Core Skill	• Technical Proficiency in Electrical and Electronic Works • Proficiency in conduits installation and LV wiring. • Skilled Plumbing Work and System Maintenance • Effective Infrastructure Maintenance and BMS Control • Competence in Computer and IT Applications • Strong Communication and Coordination Skills • Hospitality and Safety Management Mastery	A MEP Supervisor - Maintenanceis expected to acquire proficiency in various technical tasks, including electrical and electronic works, plumbing work and system maintenance, conduits installation and LV wiring, infrastructure maintenance and Building Management System (BMS) control, computer and IT applications, effective communication and coordination, as well as mastery in hospitality and safety management.	5
Responsibility	The individual in this job role will be responsible for the below-mentioned activities: • Arrange the appropriate tools and equipment • Supervise the use of tools and equipment • Check the installation of electrical material components and fixtures • Supervise the maintenance of HVAC equipment • Inspect the generator operation • Supervise the maintenance of generator • Supervise electrical maintenance and repairs • Oversee the installation of conduits • Oversee the LV wiring process • Supervise the plumbing tasks • Supervise the maintenance of the plumbing system • Use the appropriate operating system	A MEP Supervisor – Maintenancecarries out different types of activities in the management of a building infrastructure. It includes electrical, electronic, plumbing and infrastructure maintenance. The individual also uses computer and applies appropriate IT skills in work.	5

	• Use the Internet • Use Microsoft Word • Use Microsoft Excel • Use Microsoft PowerPoint • Undertake computer networking • Undertake e-commerce • Ensure effective hospitality • Ensure health and safety at work • Supervise the infrastructure maintenance • Monitor and control the BMS		

Annexure 2: Tools and Equipment(Lab Set-Up)

List of Tools and Equipment

Batch Size:30 Candidates

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1.	Adjustable Wrench	Units	5
2.	Pipe Cutter	Units	5
3.	Tubing Cutter	Units	5
4.	Flaring Tool	Units	5
5.	Crimping Tool	Units	5
6.	Hammer	Units	5
7.	Drill and Bits	Units	5
8.	Hole Saw	Units	5
9.	Pliers	Units	5
10.	Nut Driver	Units	5
11.	Wire Strippers	Units	5
12.	Voltmeter	Units	5
13.	Duct Tape	Units	5
14.	Sheet Metal Snips	Units	5
15.	Ladder	Units	5
16.	Refrigerant Gauges	Units	5
17.	Deburring Tool	Units	5
18.	Refrigerant Recovery Machine	Units	5
19.	Vacuum Pump	Units	5
20.	Manifold Gauge Set	Units	5
21.	Hex Keys (Allen Wrenches)	Units	5
22.	Tube Bender	Units	5
23.	Insulation Tape	Units	5
24.	Brazing Torch Kit	Units	5
25.	Brazing Rods	Units	5
26.	Refrigerant Scale	Units	5
27.	Pressure Test Kit	Units	5
28.	Leak Detector	Units	5
29.	Multimeter	Units	5
30.	Drill (hand or power)	Units	5
31.	Saw (hand or power)	Units	5
32.	PVC insulation tapes	Rolls	5

33.	Terminal leads	Units	5
34.	Conduit threader	Units	5
35.	Couplings	Units	30
36.	Brackets for conduit support	Units	30
37.	Digital ammeter	Units	5
38.	Tong tester	Units	5
39.	Earth tester	Units	5
40.	Lights (temporary)	Units	30
41.	Sockets (temporary)	Units	30
42.	Cables	Metres	30
43.	Conduits	Metres	30
44.	Distribution Boards (DB)	Units	5
45.	HVAC system components	Units	30 (assorted)
46.	Control components	Units	30 (assorted)
47.	Clamps	Sets	5
48.	Safety equipment (e.g., gloves, goggles)	Sets	30
49.	Cleaning Agent	Unit	10

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Training Kit (Trainer Guide, Presentations)
2. Whiteboard/ Blackboard
3. Marker
4. Projector
5. Working Model

Annexure 3: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile *(if available)*
1.	Gangaram Pvt. ITI	Surendra Dhakad	Principal	Morena, MP	9302970717	gripti@gmail.com	
2.	Dhanush Engg Services India Pvt Ltd	Chakradhar Majety	Founder Director	Durga Nagar Colony, Opp: Sitara Paradise Lane, Ameerpet, Hyderabad, Telangana	9849172771	chakradhar@mepcentre.com	
3.	L&T Construction (Skill Trainers Academy)	Bhuvan SinghDamahe	Head	L&T Skill Trainers Academy, Madh Campus, Near Custom House,Versova Creek Madh Jetty,Madh, Mumbai – 400061, India	9833078355	bhuvan.damahe@larsentoubro.com	
4.	Know How Schools LLP	Dipesh Bafna	Partner	Know How Schools LLP, C 601, Royal Casa, Ravet, Pune 412 101	9405266123	learn@knowhowschools.com	
5.	Feedback Advisory	Mohit Sharma	Manager	Tower B, DTJ-209, 2nd Floor DLF, District Centre, Jasola, New Delhi, 110025	8800091932	mohit@advisoryfeedback.com	
6.	Manpower Group Services India, Delhi	Durgesh Bagariya	Head Branch Operations	Unit No. 4-A/1 & Unit No. 4-A/2, $th Floor, Plot No. 6, Uppal Plaza, M-6, Jasola, New Delhi, Delhi, 11025	9824054165	durgesh.b@manpower.co.in	
7.	Prodegios Architect and Interiors	Rekha Srichandan	Founder	Srk gardens, KudluMain Road, Bangalore -560068	9986484007	rekhakanungo@gmail.com	
8.	Durga Buildwell	Mr. Rohit	Consultant Engineer	Near Rita Memorial Hospital, Sector-110 Naida (Gautam Budha Nagar) Uttar Pradesh - 201304	7009097811		
9.	Balakrishna R Kulkarni	Balakrishna R Kulkarni	Retired (Associate Vice President)	Mumbai	9819657656	brkulkarni1@gmail.com	
10.	Shrikant Gajanan	Shrikant Gajanan	Consulting	SHIV NIWAS / Sagar	9689728209	sshri1000@gmail.com	

	Mhatre - Consulting Engineer & Valuer	Mhatre	Engineer & Valuer.	Society, Private High School Road I Pen -Raigad - Maharashtra -India. 402 107			
11.	Pipal Tree Ventures Pvt. Ltd.	Suresh Reddy S.	State Head	Goregaon East, Mumbai, Maharashtra	8247477793	reddy@pipaltreeventures.com	
12.	WCP Consultants	Alok Jain	Assistant Consultant-Planning	IT Infra, FC - 24, Sec-16A, Film City Noida Noida, Uttar Pradesh	9589523336	alok.harshbajaj@gmail.com	
13.	Sunbright Manpower Solutions Pvt. Ltd.	Arun Kumar	Supervisor	Shop No. 3144, Main Road Narasupara (V), Kolar Taluk, 563133	7338463588	bangalore@sunbrightgroup.com	
14.	Simplify Design Studio	Nikol Sharma	Interior Designer	33, Sutari Pura, near Canara Bank, Jaora, Distt-Ratlam, 457226	6266006019	nicolesharrma06@gmail.com	
15.	SKIPPER NIGERIA FZE	Mr. Zahoor Alam	Consultant Engineer	Dangote Industries Free Zone Development Company, Lekki Free Zone, Lekki Costal Road, Ibeju-Lekki, Lagos, Nigeria	9911793472	zahooralam10@gmail.com, pmei.dorc@skipperseil.com	
16.	Asirbadh Projects and Infrastructure Limited	Mr. Arbind Basu	GM Projects	AG Office Road, Doranda, Ranchi-834002, Jharkhand	7858801901	ahplmd@yahoo.com	
17.	Skillsonics India Pvt. Ltd.	Mr. Rajeev Ashtaputre	Manager Content	Medplus Building, 3rd Floor, Jayanagara 9th Block, Bengaluru 560011	9999787213	ashtaputre.rajeev@gmail.com	
18.	Senryaku Management Pvt. Ltd.	Mr. Udit Kaushik	Co-Founder	UTC031, DLF The Ultima, Sector 81, Gurugram, Haryana 122004	9690909024	udit.kau@gmail.com	
19.	Samerka Consultants Private Limited	Mr. Laxmikant B. Umarji	Director	302, Moreswari Kripa (B), CHS Ltd, Sawarkar Marg, Bhandup(E), Mumbai 400042	9820087948	samerkcpl@gmail.com	
20.	AK Consulting	Mr. Nirman Jain	Technical Lead	6th Cross Road, 1st Stage, Kadugondanahalli, Bengluru, Karnataka 560045	7042447336	nirmanjain777@gmail.com	
21.	KW Group	Mr. Jatin Singh	Manager	B-97, Sector 63, Noida,	9310224811	m37@kwgroup.in	

		Chaudhary		Uttar Pradesh 201301			
22.	Build it Better Pvt. Ltd.	Mr. Rahul Arora	Principal Architect	Goyal Mension, Agrasen Bhawan, Behal, Bhiwani, Haryana 127028	9568438787	arrahul.bib@gmail.com	
23.	Formworks Architects	Mr. Shant Bhardwaj	Principal Architect	D11 Janhitkari Apartment, Vasundhara, Ghaziabad	9958461665	shantbhardwaj@yahoo.co.in	
24.	Freelance Architect	Mr. Garvit Sharma	Architect	A-101, Radha Krishna Lane, Kaushambi, Ghaziabad, UP	9971967901	grsharma97@gmail.com	
25.	Jawaharlal Nehru Architecture & Fine Arts University	Mr. K Chandrakanth	Asst. Professor	Masab Tank, Hyderabad, Telangana 500028	9293163582	Kchandrakanth.f&p@jnafau.ac.in	
26.	Virtual Building Studio Pvt. Ltd.	Mr. Sachin Thakre	VP & Head HR	Siddhi Vinayak Towers, 603-604, Sarkhej - Gandhinagar Hwy, nr. Kataria Arcade, Makarba, Ahmedabad, Gujarat 380051	9372631943	sachin.thakre@virtualbuildingstudio.com	
27.	KRS Buildinfra Private Limited	Mr. Rohit Verma	Area Sales Manager	D-67, KCR Town, Agra, Uttar Pradesh-282002	8650050133	vrohit2096@gmail.com	
28.	Urban Dreams Pvt. Ltd.	Mr. Asif Khan	Owner	Barabanki, Uttar Pradesh	8756078660	urbandreams101@gmail.com	
29.	Italferr	Mr. Adil Hasan Siddiqui	Sr. Engineer	SPA, 205, South Park, Saket, New Delhi - 110017	9919990759	irconahs@outlook.com	
30.	Donge Projects Management Consultants Pvt. Ltd.	Mr. Balkrishna Kulkarni	President	401, Imperial Heights, Akshar Chowk, OP Road, Vadodra	9819657656	balkrishna.kulkarni@dongrepmc.com	
31.	Arth Design Build	Ms. Shobha	Associate Mgr. HR	301 ABK Oblee Plaza Opp. Care Hospital Road No. 1, Banjara Hills, Hyderabad	9908291188	akanksha.y@arthdesignbuild.com	
32.	Red Butterfly Pvt. Ltd.	Mr. Santosh C.T.	Interior Designer	#39/2 Unit 3, Hennur Main Road, Kalyan Nagar Post Bangluru	9886204491	design.ct.07@gmail.com	

Annexure 4: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2024	300	300	5	5	-	-
2025	500	500	15	15	-	-
2026	1000	1000	30	30	-	-

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

1.
2.

Content availability for previous versions of qualifications:

☐ Participant Handbook ☐ Facilitator Guide☐ Digital Content ☐ Qualification Handbook ☐ Any Other:

Languages in which Content is available:

Annexure5: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
ICE/N1101: Supervise the maintenance and repair of mechanical systems	*Prepare for maintenance and repair work*	*14*	*20*	*-*	*8*
	PC1. inspect the mechanical systems and identify and document any existing issues or potential areas of concern	-	-	-	-
	PC2. review the mechanical drawings, specifications and engineering plans, including HVAC drawings	-	-	-	-
	PC3. conduct site survey to identify any constraints to repair and maintenance work	-	-	-	-
	PC4. develop a maintenance plan outlining regular inspection schedules, preventive maintenance tasks, and a timeline for repairs	-	-	-	-
	PC5. create a maintenance schedule to minimise disruption to building occupants	-	-	-	-
	PC6. schedule and coordinate contractor visits, ensuring they are briefed on the scope of work and building protocols	-	-	-	-
	Supervise the maintenance and repair work	*16*	*30*		*12*
	PC7. ensure all necessary materials, tools, and equipment are available for the maintenance and repair work	-	-	-	-
	PC8. review safety procedures and ensure all team members are aware of them	-	-	-	-
	PC9. monitor the maintenance or repair work to ensure it is performed according to the maintenance plan and safety standards	-	-	-	-
	PC10. identify and address any unforeseen issues that arise during the repair and maintenance process	-	-	-	-
	PC11. conduct inspection of the completed work to ensure the mechanical systems work correctly	-	-	-	-
	PC12. ensure the repair and maintenance work meets the applicable standards and specifications	-	-	-	-
	PC13. perform functional tests on repaired or maintained systems to ensure they are working as intended.	-	-	-	-
	PC14. implement improvements to enhance efficiency, safety, and reliability of mechanical systems	-	-	-	-
	PC15. maintain detailed records of all maintenance and repair activities	-	-	-	-
	PC16. provide reports to the building owner/ management, highlighting completed work, and any upgrade recommendations	-	-	-	-
	Total Marks	**30**	**50**	**-**	**20**

ICE/N1102: Supervise the electrical works	*Arrange the appropriate tools and equipment*	*2*	*7*	*-*	*2*
	PC1. ensure the availability of appropriate tools and equipment, e.g. electrical measuring device and multimeter based on the work requirements	-	-	-	-
	PC2. supervise appropriate checks on the equipment to ensure their correct functioning and usability	-	-	-	-
	PC3. direct the relevant workers to carry out appropriate troubleshooting for any issues identified with the tools and equipment	-	-	-	-
	Supervise the use of tools and equipment	*4*	*9*	*-*	*3*
	PC4. ensure the use of appropriate tools and equipment to examine electrical units in power interruptions/ continuity and trace short circuits/faults and leakages in the electrical wiring	-	-	-	-
	PC5. direct the workers to measure the size and dimension of wires and conduits using the appropriate tools	-	-	-	-
	PC6. check for the use of proper tools to cut and bend wires and conduits	-	-	-	-
	PC7. direct the workers to splice wires by stripping insulation from terminal leads and twisting wires together with the help of relevant tools	-	-	-	-
	PC8. ensure proper threading of conduit ends as per the standard procedure	-	-	-	-
	PC9. instruct the workers to connect couplings and fabricate and secure conduit support brackets using the appropriate tools	-	-	-	-
	PC10. supervise the use of digital ammeter, multimeter, tong tester, earth tester or similar devices for the repair of power connections	-	-	-	-
	Check the electrical material components and fixtures	*4*	*7*	*-*	*3*
	PC11. ensure the use of appropriate cables, conduits, lights, sockets, temporary power distribution panels and other required fixtures and accessories for repairs	-	-	-	-
	PC12. use lights with appropriate illumination to replace the faulty lights	-	-	-	-
	PC13. ensure the use of relevant accessories, brackets, bulkheads, screws and bolts for fixing lights	-	-	-	-
	PC14. instruct the workers to lay cables through ducts or conduits, pull wires through conduit leading to connection boxes, temporary panels/ distribution boards or other temporary electrical terminals	-	-	-	-
	PC15. check for the splicing of cables together using secured joints, i.e. PVC insulation tapes, caps, etc.	-	-	-	-
	PC16. direct the workers to terminate Low-Voltage (LV) cables and tag embedded, exposed electrical lines and other key equipment appropriately	-	-	-	-

Supervise the maintenance of HVAC equipment	*6*	*7*	*-*	*2*
PC17. check the components of the critical HVAC system for the correct functioning	-	-	-	-
PC18. ensure the workers understand the mechanical drawings for HVAC equipment	-	-	-	-
PC19. inspect the compressor for appropriate functioning and identify the common problems arising from the failure of the compressor	-	-	-	-
PC20. ensure the applicable procedures and checklists are followed for the preventive, predictive and corrective maintenance of the HVAC equipment/system	-	-	-	-
PC21. check for the functionality of various control components, such as the thermostat, time delay relay, solenoid valves, relays and contactors	-	-	-	-
PC22. check for the functionality of various control components such as the thermostat, time delay relay, solenoid valves, relays and contactors	-	-	-	-
PC23. analyse circuit diagrams to determine the operating sequence of micro-processor-controlled systems	-	-	-	-
Inspect the generator operation	*4*	*5*	*-*	*2*
PC24. monitor the Diesel Generator (DG) parts and their parameters, such as daily panel reading, battery charging current, specific gravity terminal connection, diesel level, oil level, coolant level and air cleaner of the DG	-	-	-	-
PC25. implement the appropriate safety measures to mitigate the operational hazard concerning a DG	-	-	-	-
PC26. identify the electrical hazards associated with automatic transfer switch, bad wiring connections, DC batteries (24-to-30-volt DC), generator voltage (415 VAC) and implement appropriate preventive measures	-	-	-	-
PC27. identify the chemical hazards associated with the battery, diesel, and engine oil, and implement appropriate preventive measures	-	-	-	-
PC28. identify the mechanical and thermal hazards associated with diesel engines (moving parts) hot exhaust, mufflers, engine surface eye hazard, and battery wash splash, and implement appropriate preventive measures	-	-	-	-
PC29. identify the air hazard and symptoms of carbon monoxide poisoning, and implement appropriate preventive and remedial measures	-	-	-	-
PC30. ensure the appropriate procedure of starting and stopping DG is followed	-	-	-	-
PC31. identify the fire hazards and implement the appropriate fire safety measures	-	-	-	-
PC32. inspect the regulation of the flow of power from the generator to the connecting load to match the phase sequence, frequency and voltage	-	-	-	-

Supervise the maintenance of generators	*2*	*4*	*-*	*3*
PC33. monitor and map the performance of diesel generators	-	-	-	-
PC34. identify the problems associated with the operation of DG and ensure their resolution within the specified time	-	-	-	-
PC35. check for the use of appropriate spares and tools for the maintenance work	-	-	-	-
PC36. implement the standard procedure for the Planned Preventative Maintenance (PPM) of the DG to reduce breakdowns	-	-	-	-
Supervise electrical maintenance and repairs	*3*	*5*	*-*	*2*
PC37. ensure the safety of live cable connections	-	-	-	-
PC38. instruct the workers to shift light arrangements as per the requirement safely, disconnecting the live parts	-	-	-	-
PC39. inspect the repair and replacement of light arrangements through relevant tests to trace out power interruptions	-	-	-	-
PC40. direct the workers to carry out maintenance by replacing/repairing installed electrical components	-	-	-	-
PC41. supervise the maintenance and replacement of faulty cables, bulbs/tubes, wires, electrical switches, faulty electrical equipment etc.	-	-	-	-
PC42. inspect the necessary tests to shut down, deactivate or repair	-	-	-	-
PC43. ensure the replacement and repair of faulty components as per SLD instruction	-	-	-	-
PC44. ensure safe isolation and shifting of the panel to another location as and when necessary	-	-	-	-
PC45. carry out necessary documentation, keeping records relevant to maintenance of panels as per organizational norms	-	-	-	-
Supervise conduit laying and LV wiring processes	*5*	*6*	*-*	*3*
PC46. conduct a thorough assessment of the electrical system to identify the areas needing repair or rewiring	-	-	-	-
PC47. determine the scope of work, including the type and quantity of conduits and LV wiring required.	-	-	-	-
PC48. develop a detailed plan outlining the conduiting and wiring routes	-	-	-	-
PC49. select appropriate conduit types ensuring their correct size to accommodate the wiring without overcrowding	-	-	-	-
PC50. select the appropriate type and gauge of LV wiring	-	-	-	-
PC51. check the wiring meets the required specifications for the intended use	-	-	-	-

	PC52. ensure the power is turned off to the work area	-	-	-	-
	PC53. implement lockout/tagout procedures to prevent accidental energization	-	-	-	-
	PC54. ensure the conduit runs according to the planned routes	-	-	-	-
	PC55. monitor bending of conduits to allow them fit around corners and obstacles	-	-	-	-
	PC56. ensure conduits are secured to walls, ceilings, or other surfaces using appropriate clamps and brackets	-	-	-	-
	PC57. supervise the labelling and terminating of wires as per the applicable standards	-	-	-	-
	PC58. perform continuity tests to verify that the wiring is intact and correctly routed.	-	-	-	-
	PC59. test the LV systems to ensure they operate correctly	-	-	-	-
	Total Marks	**30**	**50**	**-**	**20**
ICE/N1103: Supervise the maintenance and repair of the plumbing system	*Plan the plumbing maintenance and repair tasks*	*16*	*25*	*-*	*9*
	PC1. inspect the plumbing system to identify any existing issues, potential problem areas, and necessary maintenance tasks	-	-	-	-
	PC2. analyse the plumbing system drawings to plan the maintenance and repair activities	-	-	-	-
	PC3. document the condition of pipes, fixtures, valves, and other components	-	-	-	-
	PC4. develop a maintenance plan outlining regular inspection schedules, preventive maintenance tasks, and a timeline for repairs	-	-	-	-
	PC5. ensure the availability of appropriate materials, tools and equipment for maintenance and repair of plumbing systems	-	-	-	-
	Supervise the maintenance and repair tasks	*14*	*25*	*-*	*11*
	PC6. check the plumbing system to identify potential problems/faults and their cause	-	-	-	-
	PC7. implement the appropriate sequence for the repair of the plumbing system	-	-	-	-
	PC8. supervise the assembling of fitting and fixtures and appropriate tools required for different plumbing tasks	-	-	-	-
	PC9. locate and mark the position of the component to be replaced/repaired, using measuring instruments such as rulers and levels	-	-	-	-
	PC10. direct the workers to cut openings in structures to remove defective pipes and pipe fittings, using the appropriate hand and power tools	-	-	-	-
	PC11. ensure the replacement of faulty pipe assemblies, fittings, valves, appliances such as dishwashers/water heaters, and fixtures such as sinks and toilets with the new ones using the appropriate hand and power tools	-	-	-	-
	PC12. test the joints and fixtures for the proper functioning	-	-	-	-

	PC13. implement appropriate measures to prevent water leakage	-	-	-	-
	PC14. supervise various activities for the maintenance of the plumbing system, e.g. installing water service lines, connecting with the main line, fixing leaky pipes, repairing/ replacing broken water pipes, repairing/replacing leaky taps, replacing blocked pipes, etc.	-	-	-	-
	PC15. ensure the plumbing tasks are performed within the applicable durations	-	-	-	-
	PC16. implement the appropriate measures to achieve quality finishing in the repair of sanitary fixtures and fittings	-	-	-	-
	PC17. ensure minimal wastage of material and minimal damage to other systems	-	-	-	-
	PC18. instruct the workers to clean the plumbing work area after work and dispose of waste safely, following the applicable waste management practices				
	Total Marks	**30**	**50**	**-**	**20**
ICE/N1104: Apply computer and IT skills at work	*Use the appropriate operating system*	*3*	*8*	*-*	*2*
	PC1. use different types of Operating Systems (OS)	-	-	-	-
	PC2. compare and select the appropriate type of OS, Network OS and their features	-	-	-	-
	PC3. add/remove programs on the computer	-	-	-	-
	PC4. access and use - My computer, Display properties, My Documents, and My Network Places on the computer	-	-	-	-
	Use the Internet	*4*	*11*	*-*	*3*
	PC5. follow the appropriate procedure to connect the computer to the Internet	-	-	-	-
	PC6. access the Internet on the computer using the appropriate browser and applications	-	-	-	-
	PC7. search/surf the Internet, accessing different sites for information and downloading	-	-	-	-
	PC8. create a personalized email account using the appropriate email service	-	-	-	-
	PC9. use email services to exchange emails with other email users	-	-	-	-
	PC10. chat with others through text and voice chat	-	-	-	-
	PC11. use official WhatsApp groups and follow chat etiquette				
	PC12. register on different social media platforms and use them to connect with other social media users	-	-	-	-
	Use Microsoft Word	*5*	*8*	*-*	*3*
	PC13. create and save documents in MS Word following the applicable procedure	-	-	-	-
	PC14. format the text with different font size and font styles	-	-	-	-
	PC15. use different images, symbols etc., to enhance the quality of MS Word content	-	-	-	-
	PC16. set up different page sizes and orientations in MS Word	-	-	-	-

PC17. check spelling and grammar in MS Word to identify and remove grammatical and spelling errors	-	-	-	-
PC18. use Mail Merge to produce multiple letters, labels, envelopes, name tags, etc., using information stored in a list, database, or spreadsheet	-	-	-	-
PC19. create different types of documents using templates in MS Word, e.g. Biodata, letters, project reports, etc.	-	-	-	-
PC20. print MS Word documents with the correct orientation, following the applicable procedure	-	-	-	-
Use Microsoft Excel	*6*	*7*	*-*	*2*
PC21. create and save worksheets	-	-	-	-
PC22. edit and format worksheets	-	-	-	-
PC23. use formulas and functions, and insert charts and worksheets, as required	-	-	-	-
PC24. use data options in worksheets	-	-	-	-
PC25. create worksheets with images, and numbers and print them with different formatting effects	-	-	-	-
Use Microsoft PowerPoint	*5*	*6*	*-*	*3*
PC26. create slides of different types, e.g. running presentations	-	-	-	-
PC27. add slide transition effects and animation	-	-	-	-
PC28. run slide shows and make presentations with audio/visual effects	-	-	-	-
PC29. print PPT files maintaining the correct orientation	-	-	-	-
PC30. create PDF format of PPT files	-	-	-	-
PC31. follow the recommended practices concerning PPT presentations, e.g. the dos and don'ts of MS PPT	-	-	-	-
Undertake computer networking	*4*	*5*	*-*	*4*
PC32. determine the functions of different networking components	-	-	-	-
PC33. use different networking components for computer networking	-	-	-	-
PC34. install the network interface card	-	-	-	-
PC35. identify the limitations and merits of different network topologies and use them accordingly	-	-	-	-
Undertake e-commerce	*3*	*5*	*-*	*3*
PC36.conduct electronic data interchange	-	-	-	-
PC37.follow the appropriate e-commerce safety measures, e.g. the use of encryption to secure payment information to prevent fraud	-	-	-	-

	Total Marks	**30**	**50**	**-**	**20**
ICE/N1105: Ensure adherence to health and safety guidelines at work	*Ensure effective hospitality*	*14*	*24*	*-*	*12*
	PC1. practice appropriate etiquette and disciplined behaviour at work	-	-	-	-
	PC2. use appropriate types of verbal and non-verbal communication at work	-	-	-	-
	PC3. maintain professional and positive body language at work, e.g. appropriate eye contact	-	-	-	-
	PC4. maintain punctuality at work to ensure the timely completion of tasks	-	-	-	-
	PC5. follow the appropriate telephonic etiquette	-	-	-	-
	PC6. maintain a welcoming and positive behaviour with customers, avoiding arguments with them	-	-	-	-
	Ensure health and safety at work	*16*	*26*	*-*	*8*
	PC7. identify different types of hazards and risks in the workplace, e.g. risk of slipping on a wet floor, tripping due to unattended objects, falls, fire hazards, etc.	-	-	-	-
	PC8. follow the appropriate measures to prevent and control fire hazards, and participate in fire drills to ensure personal preparedness to deal with fire emergencies	-	-	-	-
	PC9. check the fire extinguishers for proper functioning and ensure their regular maintenance	-	-	-	-
	PC10. use the appropriate Personal Protective Equipment (PPE) to minimize the safety hazards related to the use of equipment	-	-	-	-
	PC11. follow the organizational procedure to respond to accidents and emergencies, ensuring immediate first-aid for the affected personnel	-	-	-	-
	PC12. maintain and encourage appropriate body posture while lifting, handling and carrying heavy objects to prevent personal injury	-	-	-	-
	PC13. maintain and encourage personal hygiene, such as wearing clean clothes and regular hand-washing	-	-	-	-
	PC14. use and encourage the use of appropriate Personal Protective Equipment (PPE) to ensure personal protection from harmful chemicals and hazardous substances	-	-	-	-
	PC15. ensure the cleanliness of washrooms, including the dryness of the washroom floor to avoid slipping hazard	-	-	-	-
	PC16. implement the appropriate cleaning method, e.g. scrubbing and polishing, for cleaning different types of floors	-	-	-	-

	PC17. ensure the safe use of appropriate cleaning agents and equipment as per the manufacturer's instructions	-	-	-	-
	PC18. ensure timely first aid is administered to the affected personnel	-	-	-	-
	PC19. follow and implement the appropriate procures during health and safety emergencies at work	-	-	-	-
	Total Marks	**30**	**50**	**-**	**20**
DGT/VSQ/N0102: Employability Skills (60 Hours)	*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*	*-*	*-*
	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 & Team Work	*2*	*2*	*-*	*-*

PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. interact with reporting superior concerning the job order, work output requirements, targets, performance indicators and incentives	-	-	-	-
PC14. ensure the timely completion of tasks through effective coordination, and as the applicable quality standards	-	-	-	-
PC15. ensure timely resolution of any problems, complaints and delays through coordination with the relevant personnel and superiors	-	-	-	-
PC16. practice active communication and respect with the personnel and superiors to achieve a smooth workflow and resolve work standards and quality-related concerns	-	-	-	-
PC17. maintain appropriate documentation concerning the completed work schedule as per the organizational requirements	-	-	-	-
PC18. prioritize team work and work towards achieving the shared goals by supporting team members	-	-	-	-
Diversity & Inclusion	*1*	*2*	*-*	*-*
PC19. communicate, and behave appropriately with all genders and PwD	-	-	-	-
PC20. educate the co-workers on women's rights and the respect they should be given	-	-	-	-
PC21. follow and implement the recommended practices to prevent sexual harassment, physical and verbal abuse, and objectification of women	-	-	-	-
PC22. follow the appropriate safety precautions while taking transportation facilities and night trips, as applicable	-	-	-	-
PC23. escalate any issues related to abuse and sexual harassment at workplace according to POSH Act and organizational procedure	-	-	-	-
Financial and Legal Literacy	*2*	*3*	*-*	*-*
PC24. select financial institutions, products and services as per requirement	-	-	-	-
PC25. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC26. identify common components of salary and compute income, expenses, taxes, investments etc.	-	-	-	-
PC27. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
Essential Digital Skills	*3*	*4*	*-*	*-*
PC28. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC29. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-

PC30. use basic features of word processor, spreadsheets, and presentations	-	-	-	-
Entrepreneurship	*2*	*3*	*-*	*-*
PC31. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC32. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC33. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
PC34. follow the 5S standards to organise the workplace and create a productive work environment	-	-	-	-
PC35. follow the best practices to manage clients, contractors subordinates, and labourers				
Customer Service	*1*	*2*	*-*	*-*
PC36. identify different types of customers	-	-	-	-
PC37. follow and implement appropriate hygiene, grooming standards and professional dress code at work	-	-	-	-
PC38. communicate politely, professionally and positively with customers and encourage the personnel to do the same	-	-	-	-
PC39. build effective but impersonal relationships with customers	-	-	-	-
PC40. practice and encourage active listening for effective communication with customers and co-workers	-	-	-	-
PC41. ensure effective probing of customers to identify their needs and expectations	-	-	-	-
PC42. ensure appropriate products and services and relevant information is provided to customers	-	-	-	-
PC43. follow and implement appropriate practices to respect cultural and social differences	-	-	-	-
PC44. provide appropriate products and services to customers based on their needs	-	-	-	-
PC45. maintain effective communication with customers, keeping them informed regarding any issues and developments involving them	-	-	-	-
PC46. identify and address customer dissatisfaction and complaints promptly and effectively	-	-	-	-
PC47. follow the company's code of behaviour to enhance its brand value, treating customers fairly and honestly	-	-	-	-
PC48. obtain customer feedback and implement appropriate measures to improve customer satisfaction	-	-	-	-

	Getting ready for apprenticeship & Jobs	*2*	*3*	*-*	*-*
	PC49. create a professional Curriculum vitae (Résumé)	-	-	-	-
	PC50. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
	PC51. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
	PC52. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
	PC53. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
	Total Marks	**20**	**30**	**-**	**-**
Grand Total		**170**	**280**	**-**	**100**

Optional NOS:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
ICE/N1107: Supervise the use and control of BMS	*Plan for BMS work*	*15*	*30*	*-*	*10*
	PC1. carry out effective planning using the relevant planning software tools, ensuring time bound	-	-	-	-
	PC2. scheduling and implementing all critical tasks	-	-	-	-
	PC3. assess potential risks that may arise during execution and create effective plans to mitigate	-	-	-	-
	PC4. minimizing the impact on project costs and schedules	-	-	-	-
	PC5. describe various sensors and transducers - automation components in the BMS	-	-	-	-
	PC6. define control panels and communication protocols such as HVAC and Modbus	-	-	-	-
	PC7. describe Fire Alarm System (FAS) and Security Systems in Building Automation.	-	-	-	-
	PC8. install sensors in suitable locations for use in BMS systems	-	-	-	-
	PC9. describe controllers use in BMS systems	-	-	-	-
	PC10. use programming blocks diagrams to create Direct Digital Control (DDC) configurations	-	-	-	-
	Monitor and control the BMS	*15*	*20*	*-*	*10*
	PC11. determine the building automation system and its functioning	-	-	-	-
	PC12. determine the usage and application of access control systems	-	-	-	-

	PC13. supervise the operation and control of the various components, such as the power supply systems, locks, alarms, etc.	-	-	-	-
	PC14. use the appropriate software for monitoring the building automation system	-	-	-	-
	PC15. diagnose battery problems using a multi-meter, deal with incidents and record them	-	-	-	-
	PC16. ensure the use of CCTV systems, fire alarms and firefighting systems as per the standard procedure	-	-	-	-
	PC17. identify the types and components of the camera, fire alarm system and its elements and record the analogue and digital footage	-	-	-	-
	PC18. check the condition of cables, connectors and batteries in the fire alarm system	-	-	-	-
	PC19. check for the correct working of different functions of the fire alarm system such as silence, reset, fire drill, faults, logs, working and types of sprinklers, etc.	-	-	-	-
	PC20. check the time, date, detector sensitivity, firefighting system, alarm sensors, etc., in the fire alarm system	-	-	-	-
	Total Marks	**30**	**50**	**-**	**20**
Grand Total		**200**	**330**	**-**	**120**

Annexure6: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SIP
- The batch allocation Matrix prepared for each month based on previous months' performance of AAs, which determines the quantum of Assessment which can be allocated to each AA for a month
- Post allocation of assessment, Assessment agencies send the assessment confirmation to SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process.

2. Testing Environment:

- A combination of Theory and practical/demonstration test is deployed to assess knowledge and Skill respectively of Learners.
- Assessment is conducted at Training center in in-person/offline mode
- For Skill assessment, environment is simulated to create a realistic Working Environment that should replicate the key features of the workplace. In job roles, where it is difficult to replicate the same, the OJT assessment is implemented.
- During the practical task, trainees are assessed on their workmanship, quality of finished product, time management, etc., based on the performance criteria (PC), knowledge and understanding and their professional and soft skills as specified in the qualification pack.
- Knowledge assessment is done through closed ended questions up to level 4 and from level 5 onwards, it is mixture of open ended and closed ended questions

3. Assessment Quality Assurance levels/Framework

- Assessment criteria is developed for each QP which acts as a guide for developing question set /banks
- Sample questions aligned with Assessment criteria for each QP are developed by SSC and validated by industry
- Taking reference of Assessment criteria and Sample Questions, AAs create the question bank which is further validated by SSC
- Questions are mapped to the specified assessment criteria
- It is mandatory that Assessor and Trainer must be ToA certified &ToT Certified respectively
- Continuous Monitoring through virtual and In-person mode are conducted to ensure the assessment is conducted as per stipulated process
- Process and Technical audit of assessment batches by quality team are conducted to avoid the errors in assessment process
- A well -defined comprehensive framework of NON-COMPLIANCE MATRIX is defined and implemented to identify the non-compliance made by assessor and AA and punitive actions are taken correspondingly.
- The capacity building sessions are conducted regularly for assessors and assessment agencies to update them about best practices in assessment

4. Types of evidence or evidence-gathering protocol:

- Post Assessment, the evidences are uploaded by Assessor to assessment agency and further assessment agency to SSC as per stipulated TAT
- Evidences are broadly the photographic and video graphic in nature
- Assessment agencies upload the evidence on SIP and detailed evidence on SSC digital platform (ZoHO)
- Evidences are; NOS wise-Geotagged photographs and videos of Theory Test &Practical Tasks, Attendance sheet, result summary sheet, group photographs.

5. Method of verification or validation:

- The process and technical audit of assessment batches are done by SSC
- Attendance of each candidate is verified and it is ensured that only those candidates are assessed by assessors who are meeting the stipulated minimum percentage of attendance
- The result of each candidate is verified, it is verified that that result on SIP are matching with respect to summary sheet submitted by AAs
- Under detailed technical audit for sample of batches, the knowledge and skill assessment results for each candidate is checked in technical aspect.
- All the evidences of batches are preserved on server of SSC digital platform

On the Job:

- On job training (OJT), candidates undergo training and leaning at actual workplace for a fixed period of time and a certain weightage of assessment is allocated out of total skill weightage of Qualification Pack for undergoing OJT as stipulated by ICE. This OJT score and assessors' end point score are combined to arrive at final Marking/grading of trainees' skill test. The OJT score is determined by Supervisor of company under which candidates undergo on job training.

Annexure7: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualification Framework
OJT	On the Job Training
EMF	Electromotive force
LV	Low-Voltage
AC	Alternating Current
DC	Direct Current
DB	Distribution Boards
APFC	Automatic Power Factor Control
MCB	Miniature Circuit Breaker
ELCB	Earth Leakage Circuit Breaker
CCTV	Closed-Circuit Television
HVAC	Heating, Ventilation, and Air Conditioning
BMS	Building Management System
BIM	Building Information Modeling

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf