



QUALIFICATION FILE

Fitter – Electrical and Electronic Assembly

☐ 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: 3

Submitted By:

Capital Goods and Strategic Skill Council

39, 1st Floor, Samyak Tower, Pusa Road, New Delhi-110005

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Section 1: Basic Details

1.	Qualification Name	Fitter – Electrical and Electronic Assembly														
2.	Sector/s	Capital Goods and Manufacturing														
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: <i>(change to previous, once approved)</i> 2022/CCM/CGSC/06607 V3.0		Qualification Name of existing/previous version: Fitter – Electrical and Electronic Assembly												
4.	a. OEM Name b. Qualification Name <i>(Wherever applicable)</i>															
5.	National Qualification Register (NQR) Code &Version <i>(Will be issued after NSQC approval)</i>	QG-03-CG-03931-2025-V2-CGSSC V4.0	6. NCrf/NSQF Level: 3													
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other <i>(Wherever applicable specify multiple entry/exits also & provide details in annexure)</i>	Certificate														
8.	Brief Description of the Qualification	A Fitter- Electrical and electronic assembly is responsible for assembling electrical and electronic panels, equipment/systems, components, sub-assemblies, etc.														
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Grade 10 pass or equivalent</td> <td>No Experience required.</td> </tr> <tr> <td>2</td> <td>Grade 8 pass with two year of (NTC/ NAC) after 8th</td> <td>No Experience required.</td> </tr> <tr> <td>3</td> <td>8th grade pass</td> <td>3-years relevant experience</td> </tr> </tbody> </table>			S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	Grade 10 pass or equivalent	No Experience required.	2	Grade 8 pass with two year of (NTC/ NAC) after 8th	No Experience required.	3	8th grade pass	3-years relevant experience
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2	Grade 8 pass with two year of (NTC/ NAC) after 8th	No Experience required.														
3	8th grade pass	3-years relevant experience														

		<table border="1"> <tr> <td>4</td><td>Previous relevant Qualification of NSQF Level 2.5</td><td>1.5-years relevant experience</td></tr> <tr> <td>5</td><td>Previous relevant Qualification of NSQF Level 2</td><td>3-years relevant experience</td></tr> </table>	4	Previous relevant Qualification of NSQF Level 2.5	1.5-years relevant experience	5	Previous relevant Qualification of NSQF Level 2	3-years relevant experience													
4	Previous relevant Qualification of NSQF Level 2.5	1.5-years relevant experience																			
5	Previous relevant Qualification of NSQF Level 2	3-years relevant experience																			
		b. Age: <As per Govt. Norms>																			
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	12	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 <table border="1"> <thead> <tr> <th>Training Delivery Modes</th><th>Theory (Hours)</th><th>Practical (Hours)</th><th>OJT Mandatory (Hours)</th><th>Viva (Hours)</th><th>Total (Hours)</th></tr> </thead> <tbody> <tr> <td>Classroom (offline)</td><td>102</td><td>198</td><td>60</td><td>-</td><td>360</td></tr> <tr> <td>Online</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table> (Refer Blended Learning Annexure for details)		Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	Viva (Hours)	Total (Hours)	Classroom (offline)	102	198	60	-	360	Online					
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	Viva (Hours)	Total (Hours)																
Classroom (offline)	102	198	60	-	360																
Online																					
14.	Aligned to NCO/ISCO Code/s (if no code is available mention the same)	NCO-2015/7241.10, 7241.20, 7242.90, 7242.10																			
15.	Progression path after attaining the qualification (Please show Professional and Academic progression)	- Capital Equipment -Calibration Technician - 4, - Digital factory Automation - 5.5																			
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	Yes via Industry or College Engagement																			
20.	Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)	☐ Yes ☒ No																			
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: Ridhima Email : technicaladvisors@cgssc.org Website: www.cgssc.org Contact No.: +91-8882907092				
23.	Final Approval Date by NSQC: 30th April 2025	24. Validity Duration: 3 Years		25. Next Review Date: 30th April 2028		

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 Man.-Mandatory Training Rec.-Recommended Proj.-Project Vi-Viva

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non-Core	NCrF/N SQF 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.	Bridge Module & Follow the health and safety practices at work	CSC/N1335 NOS Version- 2.0	Non-Core	3	2	25	35	-	-	60	30	70	-	-	100	15
2.	Coordinate with co-workers to achieve work efficiency.	CSC/N1336 : Version No. – 2.0	Non-Core	3	1	10	20	-	-	30	30	70	-	-	100	10
3.	Assemble and wire electrical components and systems to mechanical equipment	CSC/N0305: : Version No. – 2.0	Core	3	4	30	60	30		120	30	70	-	-	100	35
4.	Assemble and wire electronic equipment and	CSC/N0306 , v2.0	Core	3	4	25	65	30		120	30	70	-	-	100	35

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/N SQF 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)
	systems to mechanical equipment															
5.	Employability Skills (30 hours)	DGT/VSQ/N 0101- Version No. – 1.0	Non-Core	4	1	12	18	-	-	30	20	30	-	-	50	5
Duration (in Hours) / Total Marks					12	102	198	60		360	140	310	-	-	450	100

Elective NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/N SQF 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.																
2.																
Duration (in Hours) / Total Marks																

Optional NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/N SQF 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.																
2.																
Duration (in Hours) / Total Marks																

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)	Diploma in Mechanical with 2 years of relevant industry experience specialization in Fitter – Electrical & Electronic Assembly (Practical Skills & knowledge required in the relevant field). B. Tech in Mechanical with 1 year of relevant industry experience specialization in Fitter – electrical & Electronic Assembly (Practical Skills & knowledge required in the relevant field).
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	B. Tech in Mechanical/ Electronics/ Mechatronics with 6 years of relevant experience. M. Tech in Mechanical/ Electronics/ Mechatronics with 4 years of relevant experience.

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	NA

Section 4: Assessment Related

	Assessor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma in Mechanical with 3 years of relevant industry experience specialization in Fitter – Electrical & Electronic Assembly (Practical skills & knowledge required in the relevant field). B. Tech in Mechanical with 2 years of relevant industry experience specialization specialization in Fitter- Electrical & Electronic Assembly (Practical Skills & knowledge required in the relevant field).
	Proctor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B. Tech in Mechanical/ Electronics/ Mechatronics with 6 years of relevant experience. M. Tech in Mechanical/ Electronics/ Mechatronics with 4 years of relevant experience.
	Lead Assessor’s/Proctor’s Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B. Tech in Mechanical/ Electronics/ Mechatronics with 8 years of relevant experience. M. Tech in Mechanical/ Electronics/ Mechatronics with 4 years of relevant experience.
	Assessment Mode (Specify the assessment mode)	Formative, Summative & Skill Assessment
	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 the need 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 2 years) (Yes/No): No (Industry driven)
3.	Government /Industry initiatives/ requirement (Yes/No): Yes
4.	Number of Industry validation provided: 11
5.	Estimated nos. of persons to be trained and employed: 3449 1582
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: Yes 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 <i>(Mandatory)</i>	Q File
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	Q File
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	Q File
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	Q File
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is “Blended Learning”)</i>	NA
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	NA
7.	Annexure: Acronym and Glossary <i>(Optional)</i>	NA
8.	Supporting Document: Model Curriculum <i>(Mandatory – Public view)</i>	Attached
9.	Supporting Document: Career Progression <i>(Mandatory - Public view)</i>	Attached
10.	Supporting Document: Occupational Map <i>(Mandatory)</i>	Attached
11.	Supporting Document: Assessment SOP <i>(Mandatory)</i>	Available in Qualification Pack
12.	Any other document you wish to submit:	NA

Annexure: 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	Wide-ranging specialized theoretical learning requirements - Analyse the assembly drawings and charts; interconnection net diagrams; schedules of specified components; wiring specifications; wire running lists to determine the job specifications - Select the appropriate tools and equipment for the assembly and testing operations - Check the tools and equipment are calibrated, tested and in a safe and usable condition - Check the availability of the required components and examine them to ensure they are in a usable condition - Select the appropriate software as specified for use, and load it on electronic components following the SOP - Follow the applicable risk assessment procedures and regulations	The job role involves a range of theoretical skills as can be seen from the job requirements given in the adjacent cell. The skills include analysing the relevant technical drawings and charts; selecting and checking the relevant tools and equipment for use; checking the suitability of relevant components, etc.	3
Professional and Technical Skills/ Expertise/ Professional Knowledge	Process of determining the job specifications by analysing the assembly drawings, charts, interconnection net diagrams, circuit and physical layouts, graphical electrical symbols, etc.	As indicated by the knowledge and understanding requirements mentioned in the adjacent cell, the job holder needs to have a variety of knowledge for assembling electrical and electronic panels,	3

	• Use of the relevant Personal Protective Equipment (PPE), such as anti-static earthed wrist straps and mats, etc. • Use of the terminology used in the electric and electronic equipment and systems The concepts and benefits of Industry 4.0 and Industrial Internet of Things (IIoT) • Functions of various items used with panels and enclosures such as drives and PLC, enclosure partitions, bases for plug-in devices, limit switches, etc. • Process of minimising and dealing with various hazards associated with assembling and wiring electrical and electronic panels • Relevant precautions to be taken to prevent Electrostatic Discharge (ESD) damage to circuits and sensitive components • Functions of different types of components and sub-assemblies used in the assembly activities such as contactors, relays/ Switch Mode Power Supply (SMPS), circuit breakers/fuses, solenoids, switches, transformers, ballast chokes, terminal blocks, etc. • Use of different types of cable and wires such as single-core, screened, twisted pair/ribbon, multicore, fibre-optic, data/communication, laminated copper, braided copper, etc. • Functions and applications of various electrical and electronic components	equipment/systems, components, sub-assemblies, etc. This also involves wiring electrical and components and systems to mechanical equipment.	
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	• Process of cable stripping, soldering, crimping, securing wires and cables using cable ties/ lacing/strapping/ harnessing of wires, insulation stripping, etc. • Applicable assembly methods and techniques to be used when wiring electrical and electronic panels or components mounted in enclosures • Importance of electrical bonding/earthing, and the process of ensuring it is mechanically and electrically secure • Benefits and methods of resource optimisation • Process of setting up, programming and using the automated wiring termination equipment • Process of setting and terminating fibre optic links • Process of testing and checking equipment for continuity, and short circuit testing • Process of performing various checks and tests carried out within wiring and assembly work such as insulation resistance, flashover testing, continuity, short circuit testing, etc.		
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• Prepare the electrical and electronic components and panels/enclosures for the assembly operations • Set up, program and use the automated wiring termination equipment • Examine the wire strippers and cutters to ensure appropriate size and usable condition	As indicated by the performance criteria in the adjacent cell, the job holder needs to have wide-ranging cognitive and practical skills to assemble and wire the electrical components, sub-assemblies.	3

	• Prepare the work area for the electrical and electronic component assembly activities • Assemble sub-units to support housings/brackets, along with connectors and allied devices • Use the recommended techniques to mount the electrical and electronic components on panels or in enclosures safely • Assemble electrical assembly components on panels or in enclosures, following the applicable standards, procedures and wiring regulations • Secure the components using the recommended connectors and secure devices • Wire and terminate cables to the appropriate connections on the components • Attach wire terminations following an appropriate method such as soldering, crimping, etc. • Set the interconnection wiring as per the requirement, and bundle/strap/tie wiring looms and cables • Use the relevant Industry 4.0 manufacturing technologies to ensure interconnectivity, automation, machine learning, and real-time data collection and analysis • Check the completed assembly to ensure adherence to the operational requirements and applicable quality standards.		
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Broad Learning Outcomes/Core Skill	Logical and mathematical skills • Perform electrical calculations using a range of variables • Follow the appropriate fitting sequence and procedures • Use the appropriate methods and techniques to assemble the components in their correct positions • Follow the relevant assembly drawings and other applicable specifications Collecting and organizing information • Collect the relevant information with respect to the assembly operations • Maintain the relevant records as per the applicable organisational procedures	The job holder requires appropriate logical and mathematical skills to perform electrical and electronic assembly operations effectively. As indicated by the performance criteria in the adjacent cell, the job involves collecting the relevant information and completing the required documentation.	3
Responsibility	• Assemble and wire electrical components and systems to mechanical equipment • Assemble and wire electronic equipment and systems to mechanical equipment • Ensure compliance with the applicable national and international wiring regulations and procedures in the assembly and wiring activities • Ensure compliance with the applicable health, safety, and quality standards	The job holder is responsible for assembling the electrical and electronic panels, equipment/systems, components, sub-assemblies, etc. The individual is also responsible for ensuring compliance with the applicable health, safety, and quality standards along with the relevant regulations.	3

List of Tools and Equipment

Batch Size: 20-25 Nos

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Chairs/Tables	Standard	25
2	Computer with internet	Standard	25
3	LCD projector with screen	Standard	1
4	Trainer chair and Table	Standard	1
5	Demonstration table pin up boards	Standard	1
6	White board with marker	Standard	1
7	Electronic Fitting Components	Cable Ties, Clips, Plastic Strapping, Lacing, Harnessing, Sleeves or Grommets, Spade End, Loops, Tags and Pins Single Core, Screened, Twisted Pair/Ribbon, Multicore, Fibre-optic, Data/Communication	1 Each
8	Measuring Tools	Standard	1 Each
9	Hand Tools	Standard	1 Each
10	Soldering Tools & Consumables	Standard	1 Each
11	Electrical Fitting Components	Standard	1 Each
12	Fire Extinguisher	Standard	1
13	Safety Gloves (Rubber)	Standard	25
14	Ear Plugs	Standard	25
15	Safety Shoes & Helmet	Standard	25
16	Goggles	Standard	25
17	First-Aid Kit	Standard	2

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Computer / Laptop
2. Whiteboard and marker
3. Projector

Annexure: 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	Wangfeng Aluminium Wheel (India) Pvt. Ltd.	Sanjeev Chaudhary	HR Head	Plot No. 15 to 18, Sec-8, Industrial Model TWP, Bawal, Haryana - 123501	8750231400		
2	Palak Plastic Pvt.Ltd.	Hem Chander Yadav	Director	Plot No. 25, Sec-3, Phase 1, IMT, Bawal, Rewari, Haryana - 123501	0124-4019506	palakplastic@gmail.com	
3	Hay Industry	Harshit Yadav	HR Head	504/4, Gali No. 4, Near Rajendra Hospital, Om Nagar, Gurugram, Haryana-122001	9212154114	industryhay@gmail.com	
4	AG Enterprises	Durgesh Gupta	Manager -HR	Room No. 1, 2 nd Floor, Plot No. 345, Sector-08, IMT,	8750279555	bd@agenterpriseshr.com	

				Manesar, Gurugram Haryana -122051			
5	Hans Enterprises	OP Yadav	Sr. OP Manager	Cyberwalk, Plot No.CP 9,Tower E,GF,Cabin No4, Sec-5,IMT,Manesar, Gurugram Haryana	8750801333	Enterprises@hans@gmail.com	
6	Palak Plastic Pvt.Ltd.	Sunil Kumar	Director	Plot No.345, Sec-8, IMT, Manesar, Gurugram Haryana-122051	9810075433	sunilyadav7143@gmail.com	
7	Revent	Krishnakant Shukla	DGM- Training	Forging Division, unit 2nd, Begumpur, Khataula, Post Office- Khandsa,,Gurugram , Haryana-122004	9262708933	Krishnakant.shukla@reventengineering.com	
8	Sudhir Foundation	Ravi Prakash	DGM- Training	Plot No.93, Sector- 8,IMT,Manesar,Gurugram , Haryana-122051	7988101508	965sudhirfoundation@gmail.com	
9	JBM Group	Rajeev Kumar Sharma	VP-Head Skill Development – JBM Group	JBM Auto Limited,Skill Development Centre, Plot No.16, sector- 20B,Faridabad, (Haryana)- 121007	8860281177	Rajeev.sharma@jbmgroupp.com	
10	Subros	Pawan Yadav	HR Head	Plot No. 395-396, Sec- 8, Phase-3, IMT Manesar, Gurugram, - 122050	9818148609	p.yadav@subros.com	
11	Texmaco	Rajeev Gupta	Chief Business Officer	Belgharia,24 Parganas(North), Kolkata-700056	7042644994	Rajeev.gupta@texmaco.in	

Annexure: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates	Women	People with Disability
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	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2025-2026	5902	939	590	94	59	9
2026-2027	6492	1032	649	103	65	10
2027-2028	7141	1136	714	114	71	11

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
	FY2022-2023	1669	1669	1462	1023	167	167	146	102	17	17	15	10
	FY2023-2024	862	862	600	420	86	86	60	42	9	9	6	4
	FY2024-2025	5365	1629	1219	853	537	163	122	85	54	16	12	9

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. PMKVY 4.0 CSM STT
2. Non PMKVY
3. TNSDC
4. Fee Based
5. NABARD
6. MSSDS
7. GSDM

8. SDIS Orissa State Skilling Scheme
9. NULM
10. SDIS DDU GKY

Content availability for previous versions of qualifications: PH, FG

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

Languages in which Content is available: Hindi

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

Refer NCVET “Guidelines for Blended Learning for Vocational Education, Training & Skilling” available on:

<https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf>

Annexure: Detailed Assessment Criteria

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

CSC/N1335: Follow the health and safety practices at the work

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Maintain personal health and safety	7	12	-	-

PC1. follow the recommended practices to ensure protection from infections and transmission to others, such as the use of hand sanitiser and face mask	2	3	-	-
PC2. check the work conditions, assess the potential health and safety risks, and take appropriate measures to mitigate them	1	2	-	-
PC3. select and use the appropriate Personal Protective Equipment (PPE) relevant to the task and work conditions	1	2	-	-
PC4. follow the recommended techniques while lifting and moving heavy objects to avoid injury	1	3	-	-
PC5. follow the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, tools and equipment	2	2	-	-
<i>Assist in hazard management</i>	4	10	-	-
PC6. identify existing and potential hazards at work	1	1	-	-
PC7. assess the potential risks and injuries associated with the identified hazards	1	3	-	-
PC8. coordinate with the supervisor or other relevant personnel to prevent or minimise the identified hazards	1	3	-	-
PC9. handle hazardous materials safely and store them in the designated storage	1	3	-	-
<i>Check the first aid box, firefighting and safety equipment</i>	3	7	-	-
PC10. check the first aid box to ensure it is updated with the relevant first aid supplies	1	2	-	-

PC11. check and test the firefighting and various safety equipment to ensure they are in usable condition	1	3	-	-
Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. coordinate with the supervisor for the repair and replacement of firefighting and safety equipment	1	2	-	-
<i>Assist in waste management</i>	3	8	-	-
PC13. segregate waste into appropriate categories	1	3	-	-
PC14. recycle the recyclable waste appropriately	1	3	-	-
PC15. dispose of the non-recyclable waste in an environment-friendly manner, complying with the applicable regulations	1	2	-	-
<i>Follow the fire safety guidelines</i>	3	12	-	-
PC16. use the appropriate type of fire extinguisher to extinguish different types of fires safely	1	4	-	-
PC17. follow the recommended practices for a safe rescue during a fire emergency	1	4	-	-
PC18. coordinate with the fire department to request assistance to extinguish a serious fire	1	4	-	-
<i>Follow the emergency and first-aid procedures</i>	7	12	-	-
PC19. follow the organisational health and safety guidelines during workplace emergencies to ensure own and co-workers' safety	1	2	-	-
PC20. follow the recommended practices to minimise loss to organisational property during an emergency	1	3	-	-

PC21. follow the recommended procedure to free a person from electrocution	1	2	-	-
PC22. administer appropriate first aid to the injured personnel	1	2	-	-
PC23. perform Cardiopulmonary Resuscitation (CPR) on a potential victim of cardiac arrest	1	2	-	-
PC24. coordinate with the emergency services to request medical assistance for seriously injured/ ill personnel requiring professional medical attention or hospitalisation	2	1	-	-
Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out relevant documentation and review</i>	3	9	-	-
PC25. carry out appropriate documentation following a health and safety incident at work, including all the required information	1	3	-	-
PC26. coordinate with the relevant personnel to review health and safety conditions at work regularly or following an incident	1	3	-	-
PC27. assist in implementing appropriate changes to improve the health and safety conditions at work	1	3	-	-
NOS Total	30	70	-	-

CSC/N1336: Coordinate with co-workers to achieve work efficiency

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Work effectively with co-workers</i>	20	43	-	-
PC1. plan daily tasks at work to ensure their timely completion and efficient use of time	2	4	-	-
PC2. carry out work responsibilities adhering to the limits of authority	2	4	-	-
PC3. follow the supervisor's instructions to ensure adherence to the applicable quality standards and timescales	2	4	-	-
PC4. coordinate with the co-workers to achieve the work objectives efficiently	2	4	-	-
PC5. prepare the relevant documents and reports as per the supervisor's instructions, providing appropriate information clearly and systematically	2	4	-	-
PC6. coordinate with the supervisor or relevant personnel to deal with out of authority tasks and concerns	2	4	-	-

PC7. mentor and assist subordinates in the execution of their work responsibilities	2	4	-	-
PC8. identify possible disruptions to work through coordination with the relevant stakeholders and take appropriate preventive measures	2	4	-	-
PC9. use various resources efficiently to ensure maximum utilisation and minimum wastage	2	4	-	-
PC10. follow the recommended practices to avoid and resolve conflicts at work	1	4	-	-
PC11. follow the relevant organisational policies to ensure disciplined behaviour with maximum productivity at work	1	3	-	-
<i>Communicate effectively with co-workers</i>	6	15	-	-
PC12. follow the organisational policy for the efficient and timely dissemination of information to the authorised personnel	2	5	-	-
Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. communicate clearly and politely to ensure effective communication with co-workers	2	5	-	-
PC14. follow the appropriate techniques for active listening during interactions	2	5	-	-
<i>Practice inclusion at work</i>	4	12	-	-

PC15. empathise with Persons with Disabilities (PwD)	2	6	-	-
PC16. adopt gender-neutral behaviour at work	2	6	-	-
NOS Total	30	70	-	-

CSC/N0305: Assemble and wire electrical components and systems to mechanical equipment

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assemble and wire electrical components and systems</i>	26	64	-	-
PC1. perform electrical calculations using a range of variables	2	4	-	-
PC2. select the appropriate tools and equipment for the assembly and testing operations	1	4	-	-
PC3. check the tools and equipment are calibrated, tested and in a safe and usable condition	1	4	-	-

PC4. prepare the electrical components and panels/enclosures for the assembly operations	1	4	-	-
PC5. use the recommended techniques to mount the electrical components on panels or in enclosures safely	1	4	-	-
PC6. assemble electrical components on panels or in enclosures, following the applicable standards, procedures and wiring regulations	1	4	-	-
PC7. use the appropriate methods and techniques to assemble the components in their correct positions	1	4	-	-
PC8. secure the components using the recommended connectors and securing devices	2	4	-	-
PC9. wire and terminate cables to the appropriate connections on the components	2	4	-	-
PC10. check the completed assembly to ensure that all the operations have been completed	2	4	-	-
PC11. follow the relevant assembly drawings and other applicable specifications	2	4	-	-
PC12. use the relevant Personal Protective Equipment (PPE) to ensure protection from Electrostatic Discharge (ESD)	2	4	-	-
PC13. ensure the finished assembly is secure and meets the required specifications	1	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. use the relevant Industry 4.0 manufacturing technologies to ensure interconnectivity, automation, machine learning, and real-time data collection and analysis	1	1	-	-
PC15. coordinate with the relevant personnel to resolve any complex problems that may arise with the electrical assembly and wiring operations	2	4	-	-
PC16. carry out minor repair and maintenance of the relevant tools and equipment and store them safely after use	2	4	-	-
PC17. collect and dispose of the industrial waste appropriately in compliance with the applicable regulations and organisational procedures	2	4	-	-
<i>Use resources optimally</i>	4	6	-	-
PC18. use electricity and other resources optimally in various tasks and processes	2	3	-	-
PC19. connect the electrical tools and equipment safely and disconnect them when they are not in use	2	3	-	-
NOS Total	30	70	-	-

CSC/N0306: Assemble and wire electronic equipment and systems to mechanical equipment

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assemble and wire electronic equipment and systems</i>	28	58	-	-
PC1. analyse the assembly drawings and charts; interconnection net diagrams; schedules of specified components; wiring specifications; wire running lists to determine the job specifications	1	2	-	-
PC2. check the availability of the required components and examine them to ensure they are in a usable condition	1	2	-	-
PC3. check the availability of the appropriate type of solder and associated fluxes in the required quantity, ensuring they have the appropriate shelf life	1	2	-	-
PC4. follow the applicable risk assessment procedures and regulations	1	2	-	-
PC5. examine the wire strippers and cutters to ensure they have the appropriate size and are in a usable condition	1	2	-	-

PC6. check crimp tooling and attachments for the recommended sizes and calibration	1	2	-	-
PC7. ensure cables and individual wiring/fibre optic links are available in the required types and sizes and are in usable condition	1	2	-	-
PC8. prepare cable strapping for use by cutting them to nominal length in appropriate sizes, ensuring their availability in the required quantities	1	2	-	-
PC9. check and prepare consumables and specialized tools to be used for the wiring and interconnections	1	2	-	-
PC10. use the appropriate methods and techniques to assemble the components in their correct positions	1	2	-	-
PC11. set up, program and use automated wiring termination equipment, as appropriate	1	2	-	-
Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. attach wire terminations following an appropriate method such as soldering, crimping, etc.	1	2	-	-
PC13. set the interconnection wiring as per the requirement, and bundle/strap/tie wiring looms and cables	1	2	-	-

PC14. cut wires appropriately to the required length, and strip insulation from wire ends	1	2	-	-
PC15. set out and terminate any fibre optic links	1	2	-	-
PC16. check and prepare components, and complete the preparatory assembly	1	2	-	-
PC17. use the relevant manual/ automatic tools to secure all fastenings;	1	2	-	-
PC18. assemble sub-units to support housings/brackets, along with connectors and allied devices	1	2	-	-
PC19. secure the components using the appropriate connectors and securing devices	1	2	-	-
PC20. check the completed assembly to ensure it has the required specifications and all the necessary operations have been completed	1	2	-	-
PC21. check the security of all the assembled and interconnected items	1	2	-	-
PC22. examine the insulation resistance between housing assembly and interconnection wiring	1	2	-	-
PC23. check for the continuity of all interconnections,	1	2	-	-
PC24. identify and remove unwanted short circuits between wires	1	2	-	-

PC25. select the appropriate software as specified for use, and load it on electronic components following the SOP	1	2	-	-
PC26. check the output of software and functionality of the completed electronic assembly	1	2	-	-
Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. ensure compliance with the applicable national and international wiring regulations and procedures in the assembly and wiring activities	1	3	-	-
PC28. maintain the relevant records as per the applicable organisational procedures	1	3	-	-
<i>Follow safety guidelines</i>	2	12	-	-
PC29. comply with the applicable health, safety, environmental and other relevant regulations	1	3	-	-
PC30. select and use the appropriate Personal Protective Equipment (PPE) during machining operations	-	3	-	-
PC31. follow the organisational policy to deal with any hazards encountered during operations	1	3	-	-
PC32. use the relevant power and manual tools, equipment, and accessories as per the manufacturer's instructions to avoid injury and achieve work efficiency	-	3	-	-

NOS Total	30	70	-	-
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DGT/VSQ/N0101: Employability Skills (30 Hours)

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values – Citizenship</i>	1	1	-	-
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
PC3. explain 21st Century Skills such as Self- Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-

PC4. speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	3	4	-	-
PC9. use various financial products and services safely and securely	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
<i>Essential Digital Skills</i>	4	6	-	-
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
<i>Entrepreneurship</i>	3	5	-	-
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
<i>Customer Service</i>	2	2	-	-
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
PC19. create a basic biodata	-	-	-	-

PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	20	30	-	-

Assessment Parameters:

Assessment Plan:

1. Components of Assessment:

- Each subject will be assessed in three components: Theory (40% weightage), Practical (40% weightage), and On-job Training (OJT, 20% weightage).

2. Passing Parameters:

- To pass the semester, students must meet both the assessment parameters given below.

Parameter 1 - Weighted Semester Score:

- Students must achieve a minimum of 60% in the weighted average score across all three components (Theory, Practical, and OJT) for each subject.

Parameter 2 - Individual Component Score:

- Students need to score at least 40% in each individual component (Theory, Practical, and OJT) of every subject.

Annexure: 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.

Mention the detailed assessment strategy in the provided template.

<1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records

2. Testing Environment:

- Check the Assessment location, date and time
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.

3. Assessment Quality Assurance levels/Framework:

- Question bank is created by the Subject Matter Experts (SME) are verified by the other SME
- Questions are mapped to the specified assessment criteria
- Assessor must be ToA certified & trainer must be ToT Certified

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre photographs with signboards and scheme specific branding

5. Method of verification or validation:

- Surprise visit to the assessment location

6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored

On the Job:

1. Each module (which covers the job profile of **Fitter – Electrical and Electronic Assembly**) will be assessed separately.
2. The candidate must score 60% in each module to successfully complete the OJT.
3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively:
 - Videos of Trainees during OJT
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4. Assessment of each Module will ensure that the candidate is able to:

- Effective engagement with the customers
- Understand the working of various tools and equipment
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Annexure: 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 Qualifications Framework
OJT	On the Job Training

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