QUALIFICATION FILE

< Manual Metal Arc Welding/ Shielded Metal Arc Welding Welder >

☒ 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 >

Table of Contents

Section 1: Basic Details

1.	**Qualification Name**	**Manual Metal Arc Welding/ Shielded Metal Arc Welding Welder**	
2.	**Sector/s**	**Capital Goods and Manufacturing**	
3.	**Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options** **☐OEM**	**NQR Code & version of existing/previous qualification:** *(change to previous, once approved)* *2022/CCM/CGSC/06604* V3.0	**Qualification Name of existing/previous version: Manual Metal Arc Welder**
4.	**a. OEM Name** **b. Qualification Name** (*Wherever applicable)*		
5.	**National Qualification Register (NQR) Code &Version** (*Will be issued after NSQC approval)*	QG-03-CG-03940-2025-V2-CGSSC V4.0	**6. NCrF/NSQF Level: 3**
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**	The incumbent in the job is responsible for performing manual metal arc welding (MMAW) also known as shielded metal arc welding (SMAW) for producing a fillet and groove joints on carbon and low alloy steels as per detailed instructions received.	

<table>
<tr><td>9.</td><td>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</td><td colspan="2">a. Entry Qualification & Relevant Experience:
<table>
<tr><th>S. No.</th><th>Academic/Skill Qualification (with Specialization - if applicable)</th><th>Required Experience (with Specialization - if applicable)</th></tr>
<tr><td>1</td><td>Grade 10 pass</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>Grade 8 pass and pursuing continuous schooling in regular school (in case of 2 year prog)</td><td>No Experience required.</td></tr>
<tr><td>4</td><td>Grade 9 pass and pursuing continuous schooling in regular school</td><td>No Experience required.</td></tr>
<tr><td>5</td><td>9th Grade pass</td><td>1 year relevant experience</td></tr>
<tr><td>6</td><td>8th grade pass</td><td>2 year relevant experience</td></tr>
<tr><td>7</td><td>5th grade pass</td><td>5 year relevant experience</td></tr>
<tr><td>8</td><td>Previous relevant Qualification of NSQF Level 2.5</td><td>1.5 year relevant experience</td></tr>
<tr><td>9</td><td>Previous relevant Qualification of NSQF Level 2</td><td>3 year relevant experience</td></tr>
</table>
b. Age: <18 Years></td></tr>
<tr><td>10.</td><td>Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))</td><td>13</td><td>11. Common Cost Norm Category (I/II/III) (wherever applicable): I</td></tr>
<tr><td>12.</td><td>Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)</td><td colspan="2"></td></tr>
<tr><td>13.</td><td>Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</td><td colspan="2">☒Offline ☐Online ☐Blended
<table>
<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>
<tr><td>Classroom (offline)</td><td>132</td><td>198</td><td>60</td><td>-</td><td>390</td></tr>
<tr><td>Online</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
(Refer Blended Learning Annexure for details)</td></tr>
<tr><td>14.</td><td>Aligned to NCO/ISCO Code/s (if no code is available mention the same)</td><td colspan="2">NCO-2015/7212.0200</td></tr>
</table>

15.	**Progression path after attaining the qualification** *(Please show Professional and Academic progression)*	• Senior Welder (Pipes & Plates) -4, • Stainless Steel fabricator -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 To be incorporated later**	
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 Sharma** **Email : technicaladvisors@cgssc.org** **Contact No.: +91-8882907092** **Website: www.cgssc.org**	
23.	**Final Approval Date by NSQC:** *8th May 2025*	**24. Validity Duration: 3 Years**	**25. Next Review Date: 8th May 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/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.	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	10

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)*
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	15
3.	Manually weld carbon and low alloy steels by using Metal Arc Welding (MMAW)/ Shielded Metal Arc Welding (SMAW)	CSC/N0204 : Version No. – 2.0	Core	3	4	30	60	30		120	30	50	-	20	100	35
4.	Manually cut metal and metal alloys using oxy-fuel gases	CSC/N0201 , v2.0	Core	2	5	55	65	30		150	30	50	-	20	100	30
5.	DGT/VSQ/N0101 - Employability Skills (30 hours)	NOS Version No. – 1.0	ES	2	1	12	18	-	-	30	20	30	-	-	50	5
Duration (in Hours) / Total Marks					**13**	**132**	**198**	**60**		**390**	**140**	**270**	**-**	**40**	**450**	**100**

Elective NOS/s:

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.																
2.																
Duration (in Hours) / Total Marks																

Optional NOS/s:

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)*

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.																
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)*

Trainer Prerequisites

Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	*Specialization*	*Years*	*Specialization*	
Diploma	Mechanical	3	Welding	1	Welding	NA
B.E/B.Tech	Mechanical	2	Welding	1	Welding	NA

2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	

Master Trainer Prerequisites

Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	*Specialization*	*Years*	*Specialization*	
B.E/B.Tech	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	6	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	2	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	NA
B.E/B.Tech	Mechanical/ Electrical/Electronics/ Automobile/ Instrumentation	7	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	1	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	NA
M.E/M.Tech	Mechanical/ Electrical/Electronics/ Automobile/ Instrumentation	4	Mechanical/ Electrical/ Electronics/ Automobile/ Instrumentation	2	Mechanical/ Electrical/ Electronics/ Automobile/ Instrumentation	NA

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)*	

Assessor Prerequisites

Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	*Specialization*	*Years*	*Specialization*	
Diploma	Mechanical	4	Welding	2	Welding	NA

	B.E/B.Tech	Mechanical	4	Welding	2	Welding	NA	

Proctor's Qualification and experience in relevant sector (in years) *(as per NCVET guidelines)*

Proctor's Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
B.E/B.Tech	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	6	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	2	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	NA
B.E/B.Tech	Mechanical/ Electrical/ Electronics/ Automobile/ Instrumentation	7	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	1	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	NA
M.E/M.Tech	Mechanical/ Electrical/ Electronics/ Automobile/ Instrumentation	3	Mechanical/ Electrical/ Electronics/ Automobile/ Instrumentation	2	Mechanical/ Electrical/ Electronics/ Automobile/ Instrumentation	NA

Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) *(as per NCVET guidelines)*

Proctor's Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
B.E/B.Tech	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	7	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	2	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	NA
B.E/B.Tech	Mechanical/ Electrical/ Electronics/ Automobile/ Instrumentation	8	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	1	Mechanical/Electrical/ Electronics/ Automobile/ Instrumentation	NA

		M.E/M.Tech	Mechanical/ Electrical/ Electronics/ Automobile/ Instrumentation	4	Mechanical/ Electrical/ Electronics/ Automobile/ Instrumentation	2	Mechanical/ Electrical/ Electronics/ Automobile/ Instrumentation	NA
	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:** NA
5.	**Estimated nos. of persons to be trained and employed:** 3208
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 *(Mandatory)*	*Q File*
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	*Q File*
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	*Q File*
4.	**Annexure:** Assessment Strategy *(Mandatory)*	*Q File*
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is "Blended Learning")*	
6.	**Annexure:** Multiple Entry-Exit Details *(Mandatory, in case qualification has multiple Entry-Exit)*	

7.	**Annexure:** Acronym and Glossary *(Optional)*	
8.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	
9.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	
10.	**Supporting Document:** Occupational Map *(Mandatory)*	
11.	**Supporting Document:** Assessment SOP *(Mandatory)*	
12.	**Any other document you wish to submit:**	

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** • Process of preparing the MMAW welding equipment • Process of conducting MMAW welding • Process of carrying out fault management • Process of inspecting the workpiece for quality check • Process of segregation and storage of output	The job involves a range of theoretical understanding and practical skills as can be seen from the job requirements given in the adjacent cell. The skills include setting, adjusting and operating MMAW welding apparatus and carrying out MMAW welding activities on given work piece	3
Professional and Technical Skills/ Expertise/ Professional Knowledge	• Understand the concepts of MMAW welding. • Knowledge of relevant tools and equipment for conducting MMAW welding process. • Knowledge of MMAW welding process. • Able to understand how to minimise risks from the hazards associated with carrying out MMAW welding	As indicated by the knowledge and understanding requirements mentioned in the adjacent cell, the job holder needs to have a wide range of information for welding the metal by MMAW welding process.	3

Employment Readiness & Entrepreneurship **Skills & Mind-set/Professional Skill**	• Plan the gas cutting activities and prepare the appropriate schedules • Perform the operational/function checks • Carry out relevant documentation manually and/ or electronically • Determine the MMAW welding parameters • Operate MMAW welding apparatus for welding activities	As indicated by the performance criteria in the adjacent cell, the job holder needs to have wide-ranging practical skills for welding the metal by MMAW welding process.	3
Broad Learning Outcomes/Core Skill	**Logical and mathematical skills** • Follow the technical specification and appropriate procedures. • Perform work-related calculations **Collecting and organising information** • Use the standard templates and tools for documenting work • Collect the relevant information concerning the MMAW welding process and carry out the appropriate documentation.	The job holder requires logical and relevant skills for conducting MMAW welding activities. As indicated by the performance criteria in the adjacent cell, the job involves conducting the MMAW welding process on various metals as per drawing and job order requirement.	3
Responsibility	• Responsible for determining the work requirements • Responsible for planning the MMAW welding activities • Responsible for carrying out MMAW welding process. • Responsible for inspecting and testing the welded workpieces. • Responsible for preparing and updating the relevant documents.	The incumbent in the job is primarily involved in all manual metal arc welding (MMAW) and gas cutting operations performed on carbon and low alloy steels. They support the welder in activities such as inspection of equipment condition, welding, testing and inspection of welded work pieces.	3

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 20-25 Nos

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Chairs/Tables		25
2	Computer with internet		25
3	LCD projector with screen		1
4	Trainer chair and Table		1
5	Demonstration table pin up boards		1
6	White board with marker		1
7	MMAW welding set		1 Set
8	Grinding Machine		1
9	Fabrication Tools	Hammer, Chisel set, Centre punch 9mm x 127mm, Dividers 20 cm, Wire brush 15 cm x 3.7 mm, Spark lighter, Number punch 6 mm and letter punch 6 mm, Scriber 15 cm, Tongs holding Steel rule, Screw driver set, Hacksaw frame adjustable 30 cm, Magnifying glass 15 cm, Weld measuring gauge fillet and butt, file set, Steel tape 182 cm flexible in case, Try square	1 Set
10	Measuring Instruments	Power tool cables ,Chisel, drilling tools , jigs & fixtures , ropes , manual lifts , blocks & tables , straps , bolts , clamps, Cutting tools, hacksaws; hammers; punches; screwdrivers; sockets; wrenches; spanners; scrapers , measuring tools(rules/tapes, dividers/trammels, scribers, punches, scribing blocks, squares, protractor, depth/internal/external micrometres, callipers (Vernier, inside and outside, depth), gauges (height Vernier, feeler, bore/hole, slip, radius/profile, thread, plug), stick micrometres, dial stand and comparator, vee block with u-clamp)	1 Set
11	Cutrting Machine		1

12	Fire Extinguisher		1
13	Safety Gloves (Rubber)		25
14	Ear Plugs		25
15	Safety Shoes & Helmet		25
16	Goggles		25
17	First-Aid Kit		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.

Annexure: 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
2025-2026	3000	2132	350	193	35	19
2026-2027	2900	1996	320	181	30	18
2027-2028	3000	2085	300	189	35	18

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	2982	2435	2224	1300	298	243	243	160	29	24	22	10
	FY2023-2024	2793	1729	1446	750	279	172	144	79	27	17	14	8
	FY2024-2025	2917	1699	1424	720	291	169	142	70	29	16	14	8

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	-	-
Assist in hazard management	**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	-	-
Check the first aid box, firefighting and safety equipment	**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	-	-
Assist in waste management	**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	-	-
Follow the fire safety guidelines	**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	-	-
Follow the emergency and first-aid procedures	**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**
Carry out relevant documentation and review	**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
Work effectively with co-workers	**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	-	-
Communicate effectively with co-workers	**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	-	-
Practice inclusion at work	**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/N0201: Manually cut metal and metal alloys using oxy-fuel gas

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare for cutting operations	**15**	**21**	**-**	**9**
PC1. identify the cutting work to be done by interpreting the engineering drawing, Welding Procedure Specification (WPS) and job orders	1	2	-	1
PC2. identify the tools, cutting torch, machine, measuring instruments, accessories, consumables and input materials (mild carbon steel, high tensile and special steels, other materials) as per the requirements mentioned in WPS or drawing	3	2	-	2
PC3. select and arrange the right material, equipment, fixtures, accessories such as regulators, hoses and valve and consumables such as shielding gas etc. as per the SOP and job requirements	2	3	-	1

PC4. select the correct type of nozzle, consumables, gases and oxy-gas cutting equipment required for the job by following WPS and drawing	1	2	-	1
PC5. check the input material, tools, equipment and accessories for any defects, leakages and that they are as per the required quality standards	2	2	-	1
PC6. prepare the work area for cutting activities	1	2	-	-
PC7. set the oxy-gas cutting apparatus and its parameters as per the WPS and SOP	1	2	-	1
PC8. ensure that a flashback arrestor is fitted with the apparatus	1	-	-	1
PC9. use correct technique for lighting, adjusting and extinguishing the arc	1	2	-	1
PC10. adjust torch valve for the type of flame such as neutral, carburizing and oxidizing	1	2	-	-
PC11. mark the correct measurements on the workpiece by using appropriate tools and measuring instruments as specified in drawing or WPS	1	2	-	-
Perform oxy-gas cutting operations	**9**	**17**	**-**	**6**
Assessment Criteria for Outcomes	**Theory Marks**	**Practical Marks**	**Project Marks**	**Viva Marks**
PC12. follow safety precautions during cutting work as per SOP and organizational guidelines	-	1	-	-
PC13. start the gas cutting machine for cutting operations	1	2	-	1

PC14. adjust cylinder valves and regulator for operating pressure to achieve required specifications	1	2	-	1
PC15. perform oxy-gas cutting process as per SOP and produce items/cut shapes to the dimensions and profiles specified in WPS and drawing	2	4	-	1
PC16. perform various cutting operations correctly and produce thermal cuts in various forms of material (metal of 3mm and above) which meet specified quality criteria i.e. dimensional accuracy is within the tolerances specified on the drawing/specification, or within +/- 2mm; angled/radial cuts are within specification requirements; cuts are clean and smooth and free from flutes; no drags	2	4	-	2
PC17. recognize and correct burn-back and flashback	1	1	-	1
PC18. measure the final workpiece and compare with the dimensions as prescribed in the WPS and engineering drawing	1	2	-	-
PC19. shut down the cutting equipment and remove the workpiece after completion of cutting activities	1	1	-	-
Perform post-cutting operations	**6**	**12**	**-**	**5**
PC20. check the work pieces as per the work instructions for product quality	1	2	-	1
PC21. identify defects in the completed workpiece by using appropriate methods and equipment	2	3	-	1

PC22. separate the defective pieces which can be repaired/ reworked and pieces which are beyond repair	1	1	-	1
PC23. clean and store all the tools, machine and equipment after completion of work	1	2	-	1
Assessment Criteria for Outcomes	**Theory Marks**	**Practical Marks**	**Project Marks**	**Viva Marks**
PC24. check the machine operations for any malfunctions/defects in the component and immediately inform the supervisor/maintenance team for correction	1	2	-	1
PC25. dispose scrap or waste material in accordance with the company policies and environmental regulations	-	1	-	-
PC26. report to the supervisor about any problems faced or anticipated during the complete process	-	1	-	-
NOS Total	**30**	**50**	**-**	**20**

CSC/N0204: Manually weld carbon and low alloy steels by using Metal Arc Welding (MMAW)/ Shielded Metal Arc Welding (SMAW)

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks

Prepare for welding operations	**13**	**19**	**-**	**7**
PC1. identify the work to be done and product specifications by interpreting the product drawing, Welding Procedure Specification (WPS) and job orders	1	2	-	1
PC2. identify the tools, welding machines, measuring instruments, accessories, consumables and input materials (i.e. carbon, low alloy steel etc.) as per the requirements mentioned in WPS or drawing	3	2	-	2
PC3. select and arrange the right material, equipment, fixtures, accessories, welding torch and consumables i.e. electrode, filler wire, shielding gas etc. as per the SOP and job requirements	2	3	-	1
PC4. check the input material, tools and equipment for any defects and that they are as per the required quality standards	2	4	-	1
PC5. prepare the work area for the welding activities	1	1	-	-
PC6. prepare the materials (i.e. plate(1.5 - 24mm)/ sheet (1.5mm)) and joint for welding process	1	1	-	1
PC7. set the MMAW machine and its parameters as per the WPS and SOP	1	2	-	1
PC8. re-dry electrodes as per electrode classification requirement	1	1	-	-
PC9. install the work pieces and fixture on the apparatus and align them with the electrodes as per the job requirements	1	2	-	-

PC10. verify set up by running test weld specimen (scrap plate)	-	1	-	-
Perform MMAW/SMAW operations	**11**	**20**	**-**	**8**
PC11. follow safety precautions during welding work as per SOP and organizational guidelines	-	1	-	-
Assessment Criteria for Outcomes	**Theory Marks**	**Practical Marks**	**Project Marks**	**Viva Marks**
PC12. start the MMAW machine for welding operations	1	2	-	-
PC13. strike and maintain a stable arc by applying correct technique (i.e. scratch start, tapping techniques) and to avoid welding defects	1	2	-	1
PC14. perform MMAW welding process as per SOP and tack weld the joint at appropriate intervals to produce joints of the specified quality, dimensions and profile	2	4	-	2
PC15. produce fillet and grove joints in 1F/1G, 2F/2G and 3F/ 3G welding positions as specified in WPS by using single or multi-run welds	2	4	-	2
PC16. ensure correct angle of torch, travel speed, direction of weld and feed during the welding operation	1	1	-	1
PC17. maintain proper bead sequence with respect to groove/fillet configurations and positions	-	1	-	-

PC18. monitor the welding process parameters (air pressure, electrode force, electrode distance, gas flow etc.) are within standards by reading the various gauges and correct them if not within standards	1	1	-	1
PC19. measure the final welded piece and compare with the dimensional and geometrical aspects of the weld as prescribed in the WPS and engineering drawing	1	1	-	1
PC20. remove extra material, slag etc. by using brush, chipping hammers, grinders etc., from the welded piece	1	1	-	-
PC21. hammer the work piece to get the desired shape, if there are any welding bulges/distortions	1	1	-	-
PC22. shut down the welding equipment and remove the workpiece after completion of welding activities	-	1	-	-
Perform post-welding operations	**6**	**11**	**-**	**5**
Assessment Criteria for Outcomes	**Theory Marks**	**Practical Marks**	**Project Marks**	**Viva Marks**
PC23. check the work pieces as per the work instructions for product quality	1	2	-	1
PC24. identify various weld defects by conducting visual inspection, destructive and non-destructive tests on the work pieces	2	4	-	2
PC25. separate the defective pieces which can be repaired/ reworked and pieces which are beyond repair	1	1	-	1

PC26. clean and store all the tools, machine and equipment after completion of work	1	2	-	1
PC27. dispose scrap or waste material in accordance with the company policies and environmental regulations	1	1	-	-
PC28. report to the supervisor about any problems faced or anticipated during the complete process	-	1	-	-
NOS Total	**30**	**50**	**-**	**20**

DGT/VSQ/N0101- Employability Skills (30 Hrs)

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	**1**	**1**	**-**	**-**
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
Constitutional values – Citizenship	**1**	**1**	**-**	**-**
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	**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.	-	-	-	-
Basic English Skills	**2**	**3**	**-**	**-**
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
Communication Skills	**1**	**1**	**-**	**-**
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**1**	**-**	**-**
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
Financial and Legal Literacy	**3**	**4**	**-**	**-**
PC9. use various financial products and services safely and securely	-	-	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks

PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
Essential Digital Skills	**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	-	-	-	-
Entrepreneurship	**3**	**5**	**-**	**-**
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
Customer Service	**2**	**2**	**-**	**-**
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
Getting ready for apprenticeship & Jobs	**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 Manual Metal Arc Welding/ Shielded Metal Arc Welding Welder) 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
   •
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
- …..>

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