



QUALIFICATION FILE

Sand Moulder

☒ 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:

Indian Iron and Steel Sector Skill Council (IIS SSC)

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Section 1: Basic Details

1.	Qualification Name	Sand Moulder																	
2.	Sector/s	Iron and Steel																	
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: Sand Moulder / v1.0															
4.	a. OEM Name b. Qualification Name (Wherever applicable)																		
5.	National Qualification Register (NQR) Code & Version (Will be issued after NSQC approval)	QG-03-IS-04233-2025-V1-IISSSC		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 individual in this role will be responsible for making sand moulds using different machine moulding and hand moulding techniques																	
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>10th grade Pass or equivalent</td> <td></td> </tr> <tr> <td>2</td> <td>9th grade pass</td> <td>1.5 year experience in metal industry</td> </tr> <tr> <td>3</td> <td>8th grade pass</td> <td>3 years experience in metal industry</td> </tr> <tr> <td>4</td> <td>5th grade pass</td> <td>5 years experience in metal industry</td> </tr> </tbody> </table> b. Age: 18 years			S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	10th grade Pass or equivalent		2	9th grade pass	1.5 year experience in metal industry	3	8th grade pass	3 years experience in metal industry	4	5th grade pass	5 years experience in metal industry
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)																	
1	10th grade Pass or equivalent																		
2	9th grade pass	1.5 year experience in metal industry																	
3	8th grade pass	3 years experience in metal industry																	
4	5th grade pass	5 years experience in metal industry																	
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	14		11. Common Cost Norm Category (I/II/III) (wherever applicable): I															
12.	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	NA																	

13.	Training Duration by Modes of Training Delivery (<i>Specify Total Duration as per selected training delivery modes and as per requirement of the qualification</i>)	☒ Offline ☐ Online ☐ Blended					
		Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
		Classroom (offline)	117:00	243:00	60:00	00:00	420
		Online					
		(Refer Blended Learning Annexure for details)					
14.	Aligned to NCO/ISCO Codes (<i>if no code is available mention the same</i>)	NCO-2015/7221.0301					
15.	Progression path after attaining the qualification (<i>Please show Professional and Academic progression</i>)	Supervisor - Sand Moulder (Level-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	No gender sensitization					
20.	Are Greening/ Environment Sustainability Aspects Covered (<i>Specify the NOS/Module which covers it</i>)	☐ 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 (<i>In case of CS or MS, provide details of both Lead AB & Supporting ABs</i>)	Name: Mr. Sushim Banerjee Email: ceo@iissc.org/ sushim_banerjee@yahoo.com Contact No.: 033-23247559 Website: https://www.iissc.org/					
23.	Final Approval Date by NSQC: 08/05/2025	24. Validity Duration: 3 Years			25. Next Review Date: 08/05/2028		

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

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.	Use basic health and safety practices at the workplace	ISC/N0008, v1.0	Non-Core	3	2	25	35	00	00	60	30	50	00	20	100	10
2.	Work effectively with others	ISC/N0009, v1.0	Non-Core	3	1	10	20	00	00	30	30	50	00	20	100	10
3.	Perform the Sand Moulding operation	ISC/N2201, v1.0	Core	3	8	70	170	00	00	240	30	50	00	20	100	70
4.	Employability Skills (30 Hours)	DGT/VSQ/N0101, v1.0	Non-core	3	1	12	18	00	00	30	20	30	00	00	50	10
5.	OJT			3	2	00	00	60	00	60						
Duration (in Hours) / Total Marks					14	117	243	60	00	420	110	180	00	60	350	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)
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: ____% (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)	ITI (In any field) with 2 years of industry and 1 year of training experience in Sand Moulder Or Diploma (Mechanical engineering) with 1 year of industry and 1 year of training experience in Sand Moulder Or B.Tech (Mechanical) with 0.6 months of industry and 1 year of training experience in Sand Moulder
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	B.Tech (Mechanical) with 6 year of industry and 2 year of training experience in Sand Moulder
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)	ITI (In any field) with 3 years of industry and 1 year of assessment experience in moulding Or Diploma (Mechanical engineering) with 2 year of industry and 1 year of assessment experience in moulding Or B.Tech (Mechanical) with 1 year of industry and 1 year of assessment experience in Sand Moulder
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B.Tech (Mechanical) with 5 year of industry and 2 year of assessment experience in Sand Moulder
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	B.Tech (Mechanical) with 7 year of industry and 2 year of assessment experience in Sand Moulder
4.	Assessment Mode (Specify the assessment mode)	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 the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): Yes
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): Yes
3.	Government /Industry initiatives/ requirement (Yes/No): Yes
4.	Number of Industry validation provided: 20
5.	Estimated nos. of persons to be trained and employed:
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: In progress 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)	Attached
2.	Annexure: List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Attached
3.	Annexure: Detailed Assessment Criteria (Mandatory)	Attached
4.	Annexure: Assessment Strategy (Mandatory)	Attached
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)	Filled
7.	Annexure: Acronym and Glossary (Optional)	
8.	Supporting Document: Model Curriculum (Mandatory – Public view)	Attached
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:	

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	- Basic Metallurgy – Ferrous and non-ferrous - Process of Sand Moulder functioning - Operating parameters of Sand Moulder - Process of inspecting the workplace for quality check	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 Sand Moulder kiln in the given parameters	3
Professional and Technical Skills/ Expertise/ Professional Knowledge	- Understanding the of Sand Moulder operations - Knowledge of relevant process parameters for Sand Moulder kiln operations.	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 Sand Moulder operations.	3

Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	- Plan the kiln operations and prepare the appropriate schedules - Perform the operational/function checks - Carry out relevant documentation manually and/or electronically	As indicated by the performance criteria in the adjacent cell, the job holder needs to have wide-ranging practical skills for Sand Moulder kiln operations.	3
Broad Learning Outcomes/Core Skill	Logical and mathematical skills - Follow the technical specification and appropriate procedures. - Perform work-related calculations - Use the standard templates and tools for documenting work	The job holder requires logical and relevant skills for conducting Sand Moulder Operations. As indicated by the performance criteria in the adjacent cell, the job involves operations of Sand Moulder	3
Responsibility	- Responsible for determining the work requirements. - Responsible for planning the operations - Responsible for process parameters. - Responsible for preparing and updating the relevant documents.	The incumbent on the job roles carrying out Sand Moulder operations, sample collections, collecting the reports from the lab and documenting the same	3

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment
Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Hand riddle	As per requirement	10
2	Shovel	As per requirement	3
3	Rammer	As per requirement	30
4	Sprue pin	As per requirement	30
5	Strike of bar	As per requirement	30
6	Mallet	As per requirement	30
7	Draw spike	As per requirement	60
8	Vent rod	As per requirement	30
9	Lifter	As per requirement	30
10	Trowels	As per requirement	30
11	Slick	As per requirement	30

12	Smoother	As per requirement	30
13	Swabs	As per requirement	30
14	Spirit level	As per requirement	30
15	Gate cutter	As per requirement	30
16	Bellows	As per requirement	30
17	Clamps, cutters, and wedges	As per requirement	30
18	Moulding Flask (cope and drag)	As per requirement	30
19	Moulding Sand Muller	As per requirement	1
20	Pattern	As per requirement	30
21	Lifters/chaplets	As per requirement	30
22	Squeeze Moulding Machine (optional)	As per requirement	1
23	Safety Equipment (gloves, goggles, aprons, masks)	As per requirement	30

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Whiteboard
2. Projector
3. Computer/Laptop
4. Chairs
5. Tables
6. Whiteboard marker

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	ArcelorMittal Nippon Steel India Ltd.	Mr. Prakash Hegde	DGM	27 th km, Surat-Hazira Rd., Hazira, Surat 394270, Gujarat	9909901396	Prakash.hegde@amns.in	
2	IPS Contractors & Labour Suppliers	Mr. Tosif Shaikh	IPS Contractors	Pithampur Disst. Dhar (MP) 454775	9907590590	hr.ipscontractors@gmail.com	
3	Tata Steel Mining Ltd.	Mr. Ajay Kumar Singh	AGM-HR	Bhubaneswar, Odisha – 751015	9234511004	a.singh@tatasteelmining.com	

4	Tata Steel Ltd	Mr. Padmapal	Chief of Blast Furnaces	Mumbai	9234567561	Padma.pal@tatasteel.com	
5	Rourkela Steel Plant	Mr. H. Pati	GM	Rourkela - 769011	8895500593		
6	Super Pannel Pvt Ltd.	Mr. Ankit Kumar	Director	Mohan Nagar, Ghaziabad	9899991388	Director.superpanel@hotmail.com	
7	Tenacious Services Pvt Ltd.	Mr. Pankaj Kumar	VP	Najafgarh, New Delhi-110043	7763856257	Pankaj.kumar@tenacious.co.in	
8	Shri Om Automotive Products	Mr. Abhinav Jain	Managing Partner	Hissar Road, Rohtak-124001, Haryana	9729711099		
9	Sun Bright Manpower Solution Pvt Ltd.	Mr. Arun Kumar	Supervisor	Kolar Taluk Dist. 563133	7338463588	bangalore@sunbrightgroup.com	
10	Manpower Group Service India Pvt Ltd.	Mr. Durgesh Bhagariya	Head Branch Operation	Jasola, New Delhi-110025	9824054165	Durgesh.b@manpower.co.in	
11	Gauri Shankar Enterprises	Mr. Puneet Goyal	Prop.	Jalandhar, Punjab	9888288898		
12	SK Sales Company	Mr. Mohit Sood	Director	Jalandhar, Punjab	9872307801	sksalescompany@gmail.com	
13	S.S. Industries	Mr. Aikagra Aggarwal	Prop.	Jalandhar, Punjab	8054961300	aikagraaggarwal@yahoo.com	
14	Noble Products	Mr. R. P. Singh	Prop.	Jalandhar, Punjab	8532000039	39noblepro@gmail.com	
15	Surya Consultancy & Solutions	Mr. V. Ravi Kumar	Owner	Govindappa Building, Narasapura, Kolar – 563133	7338463588	Suryaconsultancy.solution@gmail.com	
16	Texmo Industries	Mr. C Manimaran	Asst. Mgr	Coimbatore - 641029	6610300	trm@texmo.net	
17	N. V. Enterprises	Mr. Amresh Kumar Tyagi	Owner	Thiruppathi, Valley, Hosur (TN) 635109	9944799610	Nthyagi2010@gmail.com	
18	TDS Placements & Services Pvt Ltd.	Mr. Joy Mitra	Manager	Chandigarh	8010154000	operation@tdsjob.com	
19	Race Cable Pvt Ltd.	Mr. Daleep Pandey	HR Head	Bhiwari, Rajasthan	9958477470	racecable@gmail.com	
20	Himanshu Projects Pvt. Ltd.	Mr. Rinku Kumar	Project Head	Ghaziabad, U.P.	9027740959	Hppt2007@gmail.com	

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
2024-25	500	350	200	140	50	35
2025-26	1000	700	400	280	100	70
2026-27	1500	1050	600	420	150	105

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:

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>

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☒ Theory/ Lectures - Imparting theoretical and conceptual knowledge	• Books/ e-books • Presentations • Reference Material • Audio / Video Modules	
2	☒ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	• Self-Learning Videos • Broadcasts • Mobile Learning • Curated Digital content	
3	☒ Showing Practical Demonstrations to the learners	• Video Content • E-Resource library • AR/ VR/ XR	
4	☒ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	• Training tools (tools list attached) • Video Play • Presentations	
5	☒ Tutorials/ Assignments/ Drill/ Practice	• Online Question Bank • Mobile Quick test app • MCQ based tests	
6	☒ Proctored Monitoring/ Assessment/ Evaluation/ Examinations	• Assessment engine for Essays • Up-loadable file examinations • Mock test sessions	
7	☒ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training	• Online tests • Offline assessments	

Annexure: 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
ISC/N0008: Use basic health and safety practices at the workplace	<i>Maintain safe and secure working environment</i>	10	14	-	6
	PC1. identify hazardous activities and the possible causes of risks or accidents in the workplace	2	2	-	1
	PC2. follow safe working practices while dealing with hazards to ensure safety of self and others	2	3	-	1
	PC3. use appropriate protective clothing/ equipment for specific tasks and work	1	2	-	1
	PC4. follow appropriate safety practices while working in and around trenches, elevated places and confined areas	2	1	-	-
	PC5. lift heavy objects safely using correct procedures	1	2	-	1
	PC6. carry out routine check of the machine for identifying potential hazards	1	2	-	1
	PC7. report any identified breaches in health, safety and security policies and procedures to the designated person.	1	2	-	1
	<i>Emergencies, rescue and first aid procedures</i>	6	9	-	5
	PC8. use appropriate type of fire extinguisher	1	1	-	1
	PC9. apply appropriate rescue techniques during fire hazard	1	2	-	1
	PC10. provide appropriate first aid procedure to victims wherever required eg.in case of bleeding, burns, choking, electric shock etc.	2	2	-	1
	PC11. follow emergency procedures such as raising alarm, safe evacuation etc.	1	2	-	1
	PC12. attend safety training and fire drills to respond promptly during an emergency	1	2	-	1
	<i>Health and hygiene</i>	2	6	-	2
	PC13. follow regular cleaning and disinfection practices at work place using appropriate techniques and materials	1	2	-	1
	PC14. follow hand hygiene practices at workplace using appropriate techniques and materials	1	2	-	1
	PC15. report regarding the contagious illness of self or people in close contact	-	1	-	-
	PC16. avoid contact with ill people and self-isolate in a similar situation	-	1	-	-
	<i>Housekeeping and waste management</i>	7	12	-	5
	PC17. follow the fundamentals of 5S for housekeeping	2	3	-	2
	PC18. ensure good housekeeping to prevent hazards and accidents	1	2	-	-
	PC19. store the material, tools and equipment in the correct location and in good condition	1	2	-	-
	PC20. segregate waste into different categories	1	2	-	1

	PC21. identify recyclable, non-recyclable and hazardous waste	1	1	-	1
	PC22. dispose non-recyclable, recyclable and reusable waste appropriately at identified location	1	2	-	1
	<i>Material and energy conservation</i>	5	9	-	2
	PC23. identify ways to optimize usage of material in various tasks/activities/processes	1	2	-	-
	PC24. check for spills/leakages in various tasks/ activities/processes	1	2	-	1
	PC25. plug spills/leakages and escalate to appropriate authority if unable to rectify	1	2	-	1
	PC26. check if the equipment/machine is functioning normally before commencing work and rectify wherever required	1	2	-	-
	PC27. ensure electrical equipment and appliances are properly connected and turned off when not in use	1	1	-	-
	Total Marks	30	50	-	20
ISC/N0009: Work effectively with others	<i>Communicate effectively with colleagues and others</i>	13	20	-	9
	PC1. coordinate with colleagues to share work, as per the workload in order to achieve team goals	3	5	-	2
	PC2. maintain clear communication with colleagues and others, wherever needed, through all means i.e. face-to-face, telephonic or written	5	7	-	3
	PC3. adjust communication styles to reflect gender and persons with disability (PwD) sensitivity	3	4	-	2
	PC4. respect all colleagues and co-workers	1	2	-	1
	PC5. resolve conflicts by communicating with colleagues and other departments	1	2	-	1
	<i>Interact with supervisor</i>	8	14	-	6
	PC6. identify work requirements by receiving instructions from reporting supervisor	2	3	-	1
	PC7. escalate problems to supervisors that cannot be handled	2	3	-	2
	PC8. report the completed work	2	3	-	1
	PC9. interact with the reporting supervisor about any possible hazards and safety concerns	2	5	-	2
	<i>Follow appropriate behavior at work place</i>	9	16	-	5
	PC10. extend help to people with Disability (PwD) at workplace, if required	2	4	-	2
	PC11. empathize with people with disability	2	4	-	1
	PC12. adopt a gender-neutral behavior	2	4	-	1
	PC13. adopt responsible and disciplined behaviors at the workplace	3	4	-	1
	Total Marks	30	50	-	20
ISC/N2201: Perform the Sand Moulding operation	<i>Demonstrate use of different types of raw materials, tools, machines used in the foundry.</i>	3	6	0	3
	PC1. Demonstrate selection of appropriate foundry tools & equipment.	0.5	1		0.5

PC2.	Demonstrate raw materials used in foundry.	0.5	1		0.5
PC3.	Demonstrate function of every raw material.	0.5	1		0.5
PC4.	Explain proper use of every tools and equipment.	0.5	1		0.5
PC5.	Demonstrate wrong use of tools & defective tools & equipment.	0.5	1		0.5
PC6.	Demonstrate workshop safety & discipline.	0.5	1		0.5
	<i>Monitor different colour coding of patterns and allowances of pattern</i>	5	14		4.5
PC7.	Monitor selection of pattern for the mould.	0.5	2		0.5
PC8.	Demonstrate making of the floor & level it and level checked with spirit level & straight edge.	0.5	1		0.5
PC9.	Demonstrate making of the core with the help of core box and assemble it with the mould	0.5	2		0.5
PC10.	Demonstrate mould making with loose piece pattern.	0.5	2		0.5
PC11.	Demonstrate mould making and assemble it.	0.5	2		0.5
PC12.	Explain all step of operation during working.	0.5	1		0.5
PC13.	Ensure safety procedure during above operations.	0.5	1		0.5
PC14.	Check dimensional accuracy as per standard procedure.	0.5	1		0.5
PC15.	Avoid waste and use raw materials economically.	1	1		0.5
	<i>Evaluate Sand Tempering for various types of mould making</i>	11	12		5.5
PC16.	Check the correct proportion of the mixing of sand.	1	1		0.5
PC17.	Identify correct cycle of sand mix.	1	1		0.5
PC18.	Identify correct set point for sand mixers	1	1		0.5
PC19.	Check the moisture content of the mixing sand.	1	1		0.5
PC20.	Evaluate selection of raw material for sand mixer.	1	1		0.5
PC21.	Demonstrate mixing of sand with right quantity.	1	1		0.5
PC22.	Analyse Sand tested with different testing equipment and check accuracy of the equipment.	1	1		0.5
PC23.	Demonstrate tools & equipment required for producing green sand mould.	1	1		0.5
PC24.	Assess making of green sand moulds by using appropriate hand tools.	1	1		0.5
PC25.	Perform the visual inspection of the Mould	1	1		0.5
PC26.	Demonstrate repairing of mould, if necessary	1	2		0.5
	<i>Evaluate casting, fettling of casting & calculation of yield percentage</i>	7	8		3.5
PC27.	Demonstrate use of chills & sleeves.	1	1		0.5
PC28.	Locate position for chills& sleeves.	1	2		0.5
PC29.	Demonstrate pouring of molten metal by observing safety.	1	1		0.5
PC30.	Assess Fettling of the casting carefully.	1	1		0.5
PC31.	Check the accuracy and quality of the job.	1	1		0.5
PC32.	Calculate percentage of yield of casting.	1	1		0.5
PC33.	Escalations of queries for the given job	1	1		0.5
	<i>Monitor and adhere to TPM (Total Productive Maintenance), TQM (Total Quality Management) and record keeping system</i>	4	10		3.5
PC34.	Demonstrate equipment maintenance.	0.5	1		0.5
PC35.	Ensure that equipments achieve perfect production.	0.5	1		0.5

	PC36. Demonstrate strategic tool to grow and sustain.	0.5	1		0.5
	PC37. Illustrate continuous improvement in continuous manner.	0.5	1		0.5
	PC38. Maintain record keeping system for all the process work.	0.5	2		0.5
	PC39. Identify and report the risks identified	0.5	2		0.5
	PC40. Ensure cleaning of self and workplace	1	2		0.5
	Total Marks	30	50	-	20
DGT/VSQ/N0101 - Employability Skills (30 hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC1. understand the significance of employability skills in meeting the current job market requirement and future of work	-	-	-	-
	<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, 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	-	-	-	-
	<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 collaboratively 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 at workplace according to POSH Act	-	-	-	-
	<i>Financial and Legal Literacy</i>	3	4	-	-
	PC9. use various financial products and services safely and securely	-	-	-	-
	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 carry out basic internet operations 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	-	-	-	-
	Total Marks	20	30	-	-
Grand Total		110	180		60

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 SDMS/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:

- Confirm that the centre is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- EAF 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.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question papers created by the Subject Matter Experts (SME)
- Question papers created by the SME verified by the other subject Matter Experts
- Questions are mapped with NOS and PC
- Question papers are prepared considering that level 1 to 3 is for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified & trainer must be ToT Certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

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
 - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
 - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos
5. Method of verification or validation:
- Surprise visit to the assessment location
 - Random audit of the batch
 - Random audit of any candidate
6. Method for assessment documentation, archiving, and access
- Hard copies of the documents are stored
 - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
 - Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

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