सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
DEVELOPMENT COMMISSIONER
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES

MSME TECHNOLOGY CENTRE

Please referGuidelines for STT/LTT/Apprenticeship/OEM Qualification File

QUALIFICATION FILE

Sr. Technician/ Supervisor - Tool and Die

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship

☐Up skilling☐ Dual/Flexi Qualification ☐For ToT

☐General ☐ Multi-skill (MS) ☒ Cross Sectoral (CS) ☐ Future Skills ☐ OEM

NCrF/NSQF Level: 4.5

Submitted By:

MSME TECHNOLOGY CENTRE
O/o DC MSME, Ministry of Micro, Small and Medium Enterprises
Govt. of India
A-Wing, 7th Floor, Nirman Bhawan, Maulana Azad road,
New Delhi-110108
Contact No. +91-674-2654700,
Email-msmetcab@gmail.com

Table of Contents

Section 1: Basic Details

1.	**Qualification Name**	**Sr. Technician/ Supervisor- Tool and Die**	
2.	**Sector/s**	**CAPITAL GOODS & MANUFACTURING**	
3.	**Type of Qualification: ☒ New ☐ Revised ☐ Has Electives/Options ☐OEM**	**NQR Code & version of existing/previous qualification:** *(change to previous, once approved)* **QG-4.5-CG-02414-2024-V1-MSME**	**Qualification Name of existing/previous version:** **Supervisor - Tool Engineering**
4.	**a. OEM Name** **b. Qualification Name** (*Wherever applicable*)	-	
5.	**National Qualification Register (NQR) Code&Version** (*Will be issued after NSQC approval)*	**QG-4.5-CG-02414-2024-V1-MSME & V-1**	**6. NCrF/NSQF Level: *4.5***
7.	**Award (Certificate/Diploma/Advance Diploma/Any Other***(Wherever applicable specify multiple entry/exits also & provide details in annexure)*	**DIPLOMA**	
8.	**Brief Description of the Qualification**	The qualification containing different modules which is required for the job role Tool & Die Engineering, this qualifications ultimately helps learner in the following :. • To be expertise in process planning, manufacturing and design of special purpose tool like jigs & fixture, press tool, Mould • To get an employment in Engineering/ Manufacturing industries various machine tools industry, automobile industry, and pharmaceutical machinery industry • To become an entrepreneur	
9.	**Eligibility Criteria for Entry for Student/Trainee/Learner/Employee**	a. **Entry Qualification &Relevant Experience:** • Technician- Tool and Die (Level-4) from MSME Technology Center **b. Age:** 15 Years	
10.	**Credits Assigned to this Qualification, Subject to Assessment***(as per National Credit Framework (NCrF))*	40	**11.Common Cost Norm Category (I/II/III)** *(wherever applicable)***: I**
12.	**Any Licensing requirements for Undertaking Training on This Qualification***(wherever applicable)*	NA	

<table>
<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>☐Offline ☐Online ☒Blended
<table>
<tr><th>Training Delivery Modes</th><th>Theory (Hours)</th><th>Practical (Hours)</th><th>OJT Mandatory (Hours)</th><th>OJT Recommended (Hours)</th><th>Total (Hours)</th></tr>
<tr><td>Classroom (offline)</td><td>240</td><td>360</td><td>540</td><td>-</td><td>1140</td></tr>
<tr><td>Online</td><td>60</td><td>-</td><td>-</td><td>-</td><td>60</td></tr>
<tr><td>Total</td><td>300</td><td>360</td><td>540</td><td></td><td>1200</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>3115.13 (Tool Room Supervisor)</td></tr>
<tr><td>15.</td><td>Progression path after attaining the qualification
(Please show Professional and Academic progression)</td><td>Professional Progress: Asst. Manager

Academic Progress: Post Diploma In Tool & Die Manufacturing (NSQF Level 5) →Post Diploma in Tool Design & CAD/CAM (NSQF Level 5)</td></tr>
<tr><td>16.</td><td>Other Indian languages in which the Qualification & Model Curriculum are being submitted</td><td>Hindi</td></tr>
<tr><td>17.</td><td>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</td><td>☒Yes ☐No URLs of similar Qualifications:
The proposed qualification differs in learning outcomes in line with the MSME to meet the requirement of MSME / Manufacturing Industries.</td></tr>
<tr><td>18.</td><td>Is the Job Role Amenable to Persons with Disability</td><td>☒ Yes ☐ No
If “Yes”, specify applicable type of Disability: as per government norms</td></tr>
<tr><td>19.</td><td>How Participation of Women will be Encouraged</td><td>Seats are reserved as per government Norms.</td></tr>
<tr><td>20.</td><td>Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)</td><td>☒Yes ☐No
The said aspect is covered in the module name Employability Skills.</td></tr>
<tr><td>21.</td><td>Is Qualification Suitable to be Offered in Schools/Colleges</td><td>Schools ☐ Yes ☒ No Colleges ☐ Yes ☒No</td></tr>
</table>

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: Sh. Vijay Mahipatrao Bankar** **Contact No. +0755 3501078** **Email-msmetcab@gmail.com**	
23.	**Final Approval Date by NSQC: 30.04.2024**	**24.Validity Duration: 3years**	**25.Next Review Date: 30.04.2027**

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.	TOOL DESIGN- ADVANCED PLASTIC MOULD	**MSME/DTE/33**	CORE	4.5	2	30	30	-	-	60	100	100	-	-	200	
2.	WORKSHOP PRACTICE-V	**MSME/DTE/34**	CORE	4.5	8	-	240	-	-	240	-	100	-	-	100	
3.	INDUSTRIAL MANAGEMENT	**MSME/DTE/35**	CORE	4.5	2	60	-	-	-	60	100	-	-	-	100	
4.	HYDRAULICS AND PNEUMATICS	**MSME/DTE/36**	NON-CORE	4.5	1	30	-	-	-	30	100	-	-	-	100	
5.	MAINTENANCE & SAFETY ENGINEERING	**MSME/DTE/37**	NON-CORE	4.5	2	60	-	-	-	60	100	-	-	-	100	
6.	ELECTIVE *	**MSME/DTE/38**	CORE-ELECTIVE	4.5	3	-	90	-	-	90	-	100	-	-	100	
7.	EMPLOYBILITY SKILL	**MSME/ES/04**	NON-CORE	4.5	2	60	-	-	-	60	100	-	-	-	100	
Duration (in Hours) / Total Marks					**20**	**240**	**360**	**-**	**-**	**600**	**500**	**300**	**-**	**-**	**800**	

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.	* PROJECT WORK-TOOL & DIE MAKING	**MSME/DTE/38**	CORE-ELECTIVE	4.5	3	-	90	-	-	90	-	100	-	-	100	
Duration (in Hours) / Total Marks					3	**-**	-	-	-	90	-	100	-	-	100	

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.	*ADVANCED COMPUTER AIDED DRAWING AND DESIGN (ELECTIVE)	**MSME/DTE/38**	CORE-ELECTIVE	4.5	3	-	90	-	-	90	-	100	-	-	100	
Duration (in Hours) / Total Marks					3	-	-	-	-	90	-	100	-	-	100	

SEMESTER-VI

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)*
8.	ON JOB TRAINING	**MSME/DTE/39**	CORE	4.5	18	-	-	540	-	540	-	-	100	100	200	
9.	EMPLOYBILITY SKILL	**MSME/ES/04**	NON-CORE	4.5	2	60	-	-	-	60	100	-	-	-	100	
Duration (in Hours) / Total Marks					**20**	**60**	**-**	**540**	**-**	**600**	**100**	**-**	**100**	**100**	**300**	

Assessment - Minimum Qualifying Percentage:

Specify any one of the following:

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

Minimum Marks to pass Theory Exam: 40%
Minimum Marks to pass Practical Exam: 60%

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.)*

Minimum Marks to pass Theory Exam: 40%
Minimum Marks to pass Practical Exam: 60%

Section 3: Training Related

1.	**Trainer's Qualification and experience in the relevant sector (in years)***(as per NCVET guidelines)*	Diploma/ Degree in Mechanical Engineering or Equivalent with Practical skills and knowledge required in the relevant job role at least one level higher i.e level 5 and above in related field and minimum 4 years of experience in Tool Room/ Technology Centre of MSME or any reputed industry will become a trainer, Or in accordance with the TOT guideline of NCVET
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	Degree in Engineering (Mechanical/ Production/Manufacturing Technology) or equivalent with 3 to 5 years of experience in Production/ Training/ Design Department from Tool Room/ Technology Centre of MSME or any reputed industry will become as a Master Trainer, Or in accordance with the TOT guideline of NCVET
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**	Yes

Section 4: Assessment Related

	Assessor's Qualification and experience in relevant sector (in years) *(as per NCVET guidelines)*	Diploma / Degree in Engineering (Mechanical/ Production/ Manufacturing Technology) or equivalent with 4 years of experience in Production/ Training/ Design Department from Tool Room/ Technology Centre of MSME or any reputed industry. Only (TOA) certified assessors will be able to conduct the assessments.
	Proctor's Qualification and experience in relevant sector (in years) *(as per NCVET guidelines)*	Degree in Engineering (Mechanical/ Production/ Manufacturing Technology) or equivalent With 7 years of experience in Production/ Training/ Design Department from Tool Room/ Technology Centre of MSME or any reputed industry.
	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) *(as per NCVET guidelines)*	Post Graduate in the relevant discipline with minimum 5 years of experience in Production/ Training/ Design Department from Tool Room/ Technology Centre of MSME or any reputed industry.
	Assessment Mode*(Specify the assessment mode)*	**Blended Type (Online + Offline)**
	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 2years)(Yes/No): Yes,** India Skills Report 2023, " Roadmap to India's Skills and talent Economy 2030"
2.	**Latest Market Research Reports or any other source (not older than 2years) (Yes/No):** **Yes,** "Engineering and capital goods industry" (Feb-2023) by India Brand Equity Foundation –IBEF (Trust established by the Department of Commerce, Ministry of Commerce and Industry, Government of India
3.	**Government /Industry initiatives/ requirement (Yes/No):**Yes

4.	**Number of Industry validation provided:**30
5.	**Estimated nos. of persons to be trained and employed: Approx. 120 per Year**
6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments:** *NA* If "No", why:

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	**Annexure:** NCrF/NSQF level justification based on NCrF level/NSQF descriptors *(Mandatory)*	*Annexure-I*
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	*Annexure-II*
3.	**Annexure:** Industry Validations Summary	*Annexure-III*
4.	**Annexure:** Training & Employment Details	*Annexure-IV*
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is "Blended Learning")*	*Annexure-V*
6.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	*Annexure-VI*
7.	**Annexure:** Assessment Strategy *(Mandatory)*	*Annexure-VII*
8.	**Annexure:** Acronym and Glossary *(Optional)*	*Annexure- VIII*
9.	**Annexure:** Multiple Entry-Exit Details *(Mandatory, in case qualification has multiple Entry-Exit)*	*NA*

10.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	*Annexure- IX*
11.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	*This aspect mentioned in point no. 15*
12.	**Supporting Document:** Occupational Map *(Mandatory)*	*Annexure-X*
13.	**Supporting Document:** Assessment SOP *(Mandatory)*	*Annexure- XI*
14.	Any other document you wish to submit:	*NA*

Annexure I: 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	• Work in familiar, predictable, routine, situation of clear choice.	Job role is dealing with the designing, planning manufacturing process of tool design for jigs and fixture, mould, and press tools, so he/she should have to apply his knowledge for design and development of manufacturing of that tools.	4.5

		Job holder's needs to have an understanding of basic design principles and knowledge of the calculation related to component production .The usage of the software such as Auto CAD, MasterCam, MTS and application of the CNC machining and programming using G codes and M codes for various profiles and shapes. Job holders have factual knowledge of field of study which is tool manufacturing. Through Cognitive knowledge job holder shall judge the best conceptual design for Press tool Design, Mould Design, Die Casting Die Design and Jigs & Fixture design with appropriate reasoning like best economy, quality requirement etc. Therefore this is pegged at level 6.	
Professional and Technical Skills/ Expertise/ Professional Knowledge	Factual knowledge of field of knowledge or study.	Job holder is engaged in tasks such as conventional lathe, milling, grinding, drilling machine operating and use of various measuring equipment for manufacturing process, select raw material, cutting tools jigs and fixtures, cutting parameters and various methods. Using Auto cad and Master cam Software he can produced 3D parts model, drafting, assembly and CNC programming. he is responsible for carrying out his/her job. These activities are routine in nature with narrow range of application. Job Holder shall design and develop press tool, Mould, Die Casting Die and Jigs and Fixture by using various CAD software like AutoCAD, UG, etc. Job Holder shall prepare concept and classify the appropriate procedure and shall also explain various theoretical and practical aspect in press tool, Mould Tool, Die Casting Die and Jigs and Fixture tool deign. Job	4.5

		Holder shall execute CNC Machining programme using CAM software like master CAM. Job holder shall Undertake self-study to solve the problems encountered during the project through data collection, identification of problem, defining the problem, by identifying parameters affecting on the performance and by using different Engineering Research Methodologies while doing so job holder shall demonstrates intellectual independence to guide the team members. Hence this is pegged at level 6.	
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	Understand Personal Strengths \ Value ,Digital Literacy, Money Matters and Preparing for Employment & Self Employment	Learner can Develop communication competence, report writing skills & preparation of Resumes or Curriculum Vitae, Learner can be able to Interact effectively with co-workers and can apply the Engineering Ethics and Human Values at workplace. Leaner can understand the basic process of becoming an entrepreneur &start up and can get benefits from various government schemes applicable.	4.5
Broad Learning Outcomes/Core Skill	• Evaluate component production requirement with respect to the specific requirement sheet. Produce tool design according to the requirement of production volume. • Manage supervise the tool assembly with respect to the requirement.	Learner shall work in a team where he/she shall gather accurate information on machining concept and requirements and communicate clearly about the work requirement to the group members through written /verbal. as per organizational standard.	4.5

	• Communicate effectively with sub-ordinate. Able to resolve the project related issues.	Ensure compliance with quality standards, policies and procedures including health and safety Immediately report problems/failures that may impact on the accuracy of the job to the superior staff Adhere to all organization policies and procedures from time to time Learner shall use protective equipment while working and state the name and location of people responsible for health and safety in the workplace. Identify effective resolution techniques Jobholder needs Document tool production requirements. Understand the project requirements/client requirement which requires clarity in oral and the written skills and while working on the content he needs to be aware of the social, political and natural environment. Involvement in Departmental procedural system for project , Responsibility of task completion, Validate the project outcomes with specified acceptance criteria, interpret Assembly Drawing & detail drawing, Assign Process & Work Planning, identify Individual job operations, prepare process plan, arrange sequence of operations in logical manner, identification of Priorities in the project for timely completion of the project, Monitor tool manufacturing process with the help of manufacturing process plan, bar chart, and appropriate management information system available. Therefore Job holder shall develop entrepreneurship skill like Meaning and importance of entrepreneurship, Motivations and reasons to start business, Entrepreneurial process. He/she should have in-	

		depth knowledge of safety rules and regulation to be followed at workshop.it is pegged at level 6.	
Responsibility	• Check-up procedures to ensure that project objectives are finished within specified time frames are developed. • Checkup procedures to ensure that agreed requirements are met are drawn. • The compliance of products with specified requirements is ensured. • Products can include 3D models, design drawing, measuring data. • Work independently and guide team members with full responsibility of output of group and development	Job holder is required to carry out functions such as tool design, tool assembly, machining parts etc. In these activities job holder is doing the tasks independently without any supervision and he is responsible for his own learning and others at the task. Job holder shall encourage team members for continues learning and development by time to time discussing with them various issues of project like tool / die suitability to specified machine, new development in machines, selection of material, new development in the materials and manufacturing processes. Job holder shall follow work standard, specific norms and procedures laid down by the organization. Therefore it is pegged at level 6	4.5

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

List of Tools and Equipment for Batch Size: 50

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Vice Mounted Tables	Industry Standard	60
2	Vernier Caliper		10
3	Tool storage drawer		10
4	Thread plug gauge		5
5	Thread pitch gauge		5

6	Surface Plate		4
7	Soft jaws		3
8	Simulator		50
9	Scrap Box		3
10	Safety shoes		60
11	Safety Glasses		60
12	Ring gauge		3
13	Radius gauge		3
14	Plug gauge		3
15	Number Punch		8
16	Micrometer		10
17	Manual Lifter		1
18	Lever dial for work offset setting		25
19	LCD projector		1
20	Laser printer		1
21	Integrated multimedia skill development software for CNC machining		60
22	Inside caliper		10
23	Industry Helmet		60
24	Industry hand gloves		60
25	Industrial grade CNC Turning Center& cutting tools		4
26	Industrial grade CNC milling& cutting tools		3
27	Height Gauge		10
28	Hammer		30
29	Generator Set		1
30	Gauges		12
31	First aid kit		2
32	Feeler gauge for work offset setting		6
33	Computer systems in LAN		60
34	Combination Plier		25
35	Bore gauge		3
36	Apron		60
37	Centre Punch		25
38	3pin micrometer		5
39	Tool (End mill, Face mill, Drill bits, spring collet, arbor , tool holding device)		20
40	Conventional lathe Machine		24
41	Conventional Milling Machine vertical		14

42	Conventional Milling Machine horizontal		3
43	Conventional surface grinding Machine		3
44	Conventional drilling Machine		3
45	Conventional shaper Machine		1
46	TIG/MIG/Arch welding machine with simulator		1 NOS EACH
47	Injection Molding Machine		1
48	Industrial Press		1
49	Profile Projector		1
50	CNC WIRECUT		1
51	CNC EDM		1
52	Hacksaw		1
53	AUTOCAD SOFTWARE		60
54	SOLIDWORKS SOFTWARE		60
55	MS OFFICE		60

Annexure III: Industry Validations Summary

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile *(if available)*
1	Kirloskar Brothers Limited	Purvez Pasta	HR	No 254/1, Viramgam Highway, Sanand Ho, Sanand - 382110 (Near Chharodi Railway Station, Chharodi)	2717273310	Parvez.Pasta@kbl.co.in	
2	Parle Elizabeth Tools Private Limited	DevendraDawande	HR	Plot No. PE-37, BOL Sanand GIDC-II, Sanand, Chharodi, Gujarat 382110	7211149243	dbdawande@parle-elizabeth.com	
3	Windsor Machines Limited	Steven Christian	HR	5402, 5403, Phase IV, GIDC Estate, Vatva, Ahmedabad, Gujarat 382445	7930262100	steven.christian@windsormachines.com	
4	Shilp Gravures Ltd	AniruddhGharia	HR	778/6, Pramukh Industrial Estate, Sola-Santej Road, Village Rakanpur, Tal, Kalol, Dist. Gandhinagar Gujarat (India.) - 382721	2764 286323	careers@shilpgravures.com	

5	Jyoti Plastic Industries	Vipul Patel	CEO	Plot No. 1211/A, Vadsar-Bhoyan Road, Opp.Arvind Mills (Knit & Garment Unit), Kalol, Village MotiBhoyan, Gandhinagar-382721, Gujarat, India	8047837137	info@jyotiplasticindia.com	
6	Galaxy Chains Pvt. Ltd.	KishanGovani	Proprietor	N.H. 27, Opp. Field Marshal High School, Shapar Ind. Zone, Shapar, Gujarat 360024	090999 32799	galaxy@galaxychains.com	
7	Latteys Industries Ltd	G.Nallathambi	Works manager	Plot No.16, Phase 1&2, GIDC Naroda, Ahmedabad, Gujarat 382330	079 2282 2894	latteysqc@gmail.com	
8	Mascot Pump Limited	Pratik Patel	Proprietor	13, Naroda GIDC Rd, Makarpura, GIDC Naroda, Ahmedabad, Gujarat 380025	9824533161	info@mascotpumps.com	
9	Fine Care Biosystems	Kaushik Patel	HR	Block# 228/1/4, Dantali Industrial Owner Association,, Dantali, Kalol, Gujarat 382721	9924474433	info@accumaximum.com	
10	The Anup Engineering Limited	Ashwin	HR	Behind 66 KV Electric Sub Station, Odhav Rd, Ahmedabad, Gujarat 382415	7922872823	anup@anupengg.com	
11	SHREE AMBA MECHANICAL WORKS	PANCHAL HASMUKH	Proprietor	B/9 DHANJIBHAI ESTATE, NR REVABHAI ESTATE, CTM AMRAIWADI AHMEDABAD	9426325593	shreeambaeng20@gmail.com	
12	P.C. INDUSTRIES	Honey Shah	Proprietor	Block No. 782, Pramukh Industrial Estate, Near Shilp Gravures Village Rakanpur, Takalol, Gandhinagar, Gujarat 382721	9662525222	pci@pcindustries.co.in	
13	A. M. Designs Pvt. Ltd.	JuhiMevada	HR	Kathwada G.I.D.C Plot No. 24 Road, Odhav Rd, Ahmedabad, Gujarat 382430	079 2970 8170	hradmin@amdindia.in	
14	ShayburgValvesPvt Ltd.	ArvindSolanki	HR	PLOT NO. 176,186,187, AJANTA INDL. ESTATE, VILL: VASNA(IYAVA), TAL: SANAND, DIST: AHMEDABAD, Gujarat 382110	02717 619 100	mkt1@shayburgvalves.com	
15	STEELSTRONG VALVES (I) PVT LTD	NareshSuthar	HR	PLOT NO. 186,187, AJANTA INDL. ESTATE, VILL: VASNA(IYAVA), TAL: SANAND, DIST: AHMEDABAD, Gujarat 382110	9099972570	sanandworks@steelstrong.com	
16	Indo-mac Engineers		Proprietor		9824091598		

		Mr. Dinesh Panchal		541, GidcKathawada, Road No-15, Kathwada Road, Kathawada, Kathawada, Ahmedabad, Gujarat 382430		engineering@indomac.com	
17	Clartech Engineers Pvt Ltd	Mr. Bannur	Proprietor	Plot 413, Phase II GIDC Industrial Estate, Vatva, Ahmedabad, Gujarat 382445	079 29295055	Contact@clartechengineers.com	
18	Dinesh Enterprise	Mr. Dinesh	Proprietor	Plot No. 51,52 Ganshyam Estate, opp.mamta Nagar Nr.viratnagar Cross Road, Murgha Farm Rd, Ahmedabad, Gujarat 382350	079 2277 4185	dineshenterprise52@gmail.com	
19	Accumax Lab Devices Pvt.Ltd	Kaushik Patel	HR	Plot-16,Electronic Park "SEZ, GIDC Rd, Sector 26, Gandhinagar, Gujarat 382026	9904406061	info@accumaximum.com	
20	Ashmor Electricals (India) Pvt. Ltd.	Pallav A. Shah	Support	KhatrajKalol Rd, MotiBhoyan, Takalol, Gandhinagar, Gujarat	87980 51886	ashmor_electricals@yahoo.com	
21	Ambica optical industries	Abhay Shah	Partner	45, mahalaxmi estate, Bombay Conductor Rd, Vatva, Ahmedabad, Gujarat 382445	7965124588	ambicaoptical15@yahoo.com	
22	Nilkanth Machine Tools	VINUBHAI SOLANKI	CEO	5503/1 G.I.D.C. Vatva, Cross Road, near Trikampura, B/h, Vatva, Ahmedabad, Gujarat 382445	094260 83725	info@milmac.com	
23	Schilltek International	KIRAN CHAVDA	Proprietor	37, Karnavati Estate, Phase IV, GIDC Estate, Vatva, Ahmedabad, Gujarat 382445	099252 53737	skilltech@gmail.com	
24	Shiv Shakti Industries	PANKAJ PANCHAL	Proprietor	Phase I, GIDC, Vatva, Ahmedabad, Gujarat	9825061182	shivshaktiindustries191@gmail.com	
25	Gayatri Engineering Works	Nilesh Patel	Proprietor	55 SUPRABHAT INDUSTRIAL ESTATE O/S DARIYAPUR GATE, AHMEDABAD	9825186087	engineers369@yahoo.com	
26	Shree Chamunda Engineering Works	Mr. N.M. Panchal	Proprietor	5, Ashirwad Industrial Estate, Saraspur, Ahmedabad, Gujarat 380024	098243 02494	chamundaenggworks@gmail.com	
27	Ginza Machinery Mfg. Co	MR. PRATIK	PARTNER	Plot No. 1106, 07, D - Road, Phase 3, GIDC Estate, Vatva, Ahmedabad, Gujarat 382445	96240 90000	pratik@armstitch.com	

28	GABBAR ENGINEERING CO.	MR. UMESH	PARTNER	PLOT NO 1903, GIDC INDUSTRIAL ESTATE, PHASE 3, Rd F, Vatva, Ahmedabad, Gujarat 382445	098240 62000	umesh@gabbar.com	
29	Shree Chamunda Industries	YOGESH DODIYA	PARTNER	8, Puspak Industrial Estate, Phase-1, Nika Tube Compound, Vatva, G I D C, Ahmedabad, Gujarat 382445	098980 70291	Yogesh.dodiya76@gmail.com	
30	Millmac Solutions	KasyapPanara	Proprietor	47, NR RAMOL TOLLPLAZA SVP RING ROAD RAMOL AHMEDABAD	7600810381	millmacsolutions@gmail.com	

Formation of all the industry validations in table. This is not required for OEM qualifications.

Annexure IV: 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
24-25	90	90	5	5	-	-
25-26	120	120	8	8	-	-
26-27	150	150	10	10	-	-

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
1.0	20-21	76	76	71	69	0	0	0	0	0	0	0	0
1.0	21-22	56	56	46	46	0	0	0	0	0	0	0	0
1.0	22-23	36	36	35	35	0	0	0	0	0	0	0	0

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. Fee based Training Program under the Ministry of MSME.

Content availability for previous versions of qualifications:

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

Languages in which Content are available:

English

Annexure V: 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/wp-content/uploads/2023/01/Guidelines-for-Blended-Learning-for-Vocational-Education-Training-Skilling.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 with 2D and 3D animation Self-Learning Videos /Broadcasts /Mobile Learning /Curated Digital content	40:60
2	☐Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	Self-Learning Videos , Broadcasts, Mobile Learning , Curated Digital content	40:60
3	☐Showing Practical Demonstrations to the learners	CNC Simulators/ CAD Software, Video Content , E-Resource library	100:0
4	☐Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	CNC Simulators, CNC Lathe Machines, Grinding Machines, Measuring, instruments, Cutting Tools, Hand Tools / CAD Software	100:0
5	☐Tutorials/ Assignments/ Practice	Online Question Bank, Mobile Quick test app, MCQ based tests, Practical Test on Machines	40:60
6	☐Proctored Monitoring/ Assessment/ Evaluation/ Examinations	Assessment engine for Essays, Up-loadable file examinations, Mock test sessions	50:50
7	☐On the Job Training (OJT)	Live Project on CNC Machines, Measuring Instruments at concern Industry/ Institution	100:0

Annexure VI: 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

NOS / Module: **MSME/DTE/33** TOOL DESIGN- ADVANCED PLASTIC MOULD	PC.1 Understand the classification of plastic. PC.2 Get knowledge about the concept of mould. PC.3 Application of mould. PC.4 Different types of injection moulding machine. PC.5 Functions of compression moulding machines and their process application PC.6 Transfer moulding machine and process PC.7 Functions of transfer moulding machines and their process application PC.8 understand the hot runner system, PC.9 feeding system, PC.10 heating system, PC.11 ejection system, PC.12 core & cavity retainer plates PC.13 Transfer mould and application PC.14 understand different types of mould compression moulds and transfer moulds PC.15 Get knowledge about different parts of mould according to different types of mould. PC.16 Get knowledge about parting surface , relief of parting surface PC.17 Get knowledge about selection of material for all parts. PC.18 Understand process of manufacturing of each parts its costing of manufacturing. PC.19 Perfect design of plastic mould. PC.20	100	100	-	-
NOS / Module: **MSME/DTE/34** WORKSHOP PRACTICE-V	PC.1 understand about selection of component according to the requirement PC.2 understand about component design based on the selection of component and also selecting material as well.	-	100	-	-

	PC.3 understand about material testing and selection based on the selection of component and also selecting material as well. PC.4 understand about design of mould for the component according to the requirement. PC.5 understand about Design of core and cavity insert material based on component. PC.6 learn about preparation of part process sheet of various parts of press tool. PC.7 understand according to the design proper selection raw material size and finally manufacturing the various parts of the mould. PC.8 learn about the assembly sequences of manufactured mould parts during the workshop practice				
NOS / Module: **MSME/DTE/35** INDUSTRIAL MANAGEMENT	PC.1 understand the system concept, management concept and scientific management PC.2 Human relation PC.3 Structure of Industrial organization PC.4 Supervision & leadership PC.5 Industrial legislation PC.6 Wages and incentives PC.7 Accounting & budgeting PC.8 Purchase management	100	-	-	-
NOS / Module: **MSME/DTE/36** HYDRAULICS AND PNEUMATICS	PC.1 Grasp the basics of hydraulics and pneumatics and be aware of the safety measures associated with these systems. PC.2 Analyze fluid properties and understand how pressure and flow affect fluid behavior. PC.3 Students will be proficient in designing, assembling, and troubleshooting hydraulic systems. PC.4 Students will gain the skills required to design, build, and maintain pneumatic systems. PC.5 Students will understand the diverse applications of fluid power systems in industrial settings PC.6 Students will be aware of advanced fluid power technologies and future trends in the field.	100	-	-	-

	PC.7 Students will demonstrate their ability to apply their knowledge to a real-world project and pass the final assessment.				
NOS / Module: **MSME/DTE/37** MAINTENANCE & SAFETY ENGINEERING	PC.1 Understand importance of maintenance, need and scope PC.2 Understand methods of maintenance, preparation methods PC.3 To understand effects of wear on performance, methods of measurement of wear PC.4 Understand types of lubricants PC.5 Lubricating methods PC.6 Procedure of applying lubrication. PC.7 Understand troubles during maintenance and their remedies PC.8 Understand leakages and its prevention methods PC.9 Understand types of assembly and disassembly and its procedure PC.10 Understand hydraulic system, pneumatic system, valves, cylinder PC.11 Understand the importance of preventive maintenance in industry, methods of preventive maintenance PC.12 Understand the safety principles and practices, safe layout, safety aspects of machines to include putting guards, provision of interlocking and vibration damping etc.	100	-	-	-
NOS / Module: **MSME/DTE/38** PROJECT WORK-TOOL & DIE MAKING	Project Report Mentioning the process and procedure carried by the trainee for completing the assign task duly endorsed by the authorized personnel and The report must contain: • Details of Department/ Organization • Brief Job description & work activity • Specific problem faces if any with the solution. • Technical Books referred during the OJT • Conclusion		100	-	-

NOS / Module: **MSME/DTE/38** ADVANCED COMPUTER AIDED DRAWING AND DESIGN (ELECTIVE)	PC.1 Understand the types of Curves PC.2 Modifying Curves PC.3 Precision construction of curved objects. PC.4 Understand about Orthographic view of Objects (M.D.T.) PC.5 Scale, dimension, text (for 3D drawings) PC.6 Sectioning and hatching PC.7 Understand the Isometric views of Drawing PC.8 Understand Assembly parts PC.9 Creating Orthographic views and sectioning details	-	100	-	-
NOS / Module: **MSME/DTE/39** EMPLOYBILITY SKILL	PC.1 The process of identifying opportunities for potential business and relevant regulatory and statutory requirements PC.2 A sample business plan PC.3 Different types of customers PC.4 Various tools used to collect customer feedback	100	-	-	-
NOS / Module: **MSME/DTE/40** ON JOB TRAING	PC.1 OJT Report: Mentioning the process and procedure carried by the trainee for completing the assign task duly endorsed by the authorized personnel and The report must contain: • Details of Department/ Organization • Brief Job description & work activity • Specific problem faces if any with the solution. • Technical Books referred during the OJT • Conclusion	-	-	100	100
OS / Module: **MSME/DTE/41** EMPLOYBILITY SKILL	PC.1 Create a career development plan. PC.2 identify well-defined short- and long-term goals PC.3 Draft a professional Curriculum Vitae (CV) PC.4 Do job search sources on employment exchanges, recruitment agencies, and job portals respectively	100	-	-	-
	Total Marks	**2800**	**2000**	**100**	**100**

Annexure VII: 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 are assigned to the Central MSME NSQF Examination Cell via email for the assessment.
- Central MSME NSQF Examination Cell sends the assessment confirmation to respective TC/AB
- Central MSME NSQF Examination Cell deploys the certified Assessor for executing the assessment at respective TC/AB via online / offline mode.
- Central MSME NSQF Examination Cell & respective TC/AB Internal Examination Cell monitors the assessment process & records

2. Testing Environment:

- Central MSME NSQF Examination Cell confirms the Assessment location, date and time
- For number of candidates more than 30 separate assessors are assigned for the assessment.
- Central MSME NSQF Examination Cell & respective assessor confirms that the allotted time to the candidates to complete Theory & Practical Assessment is correct.

3. Assessment Quality Assurance levels/Framework:

- Each TC Submits the Question Bank for the individual subject Theory & Practice separately, submits to Central MSME NSQF Examination Cell and it is verified by the Central MSME NSQF Examination Cell Committee members.
- Questions are mapped to the specified assessment criteria
- All the assessors & Trainers are well qualified &trained to carry out the specified task.

4. Types of evidence or evidence-gathering protocol:

- Online Link is send by Central MSME NSQF Examination Cell to respective TC & Assessor. Reporting of the assessor from assessment location is verified by the Central MSME NSQF Examination Cell through the online Meeting Link. Students are also required to join for the online link for verification by the Central MSME NSQF Examination Cell
- Assessment Photographs are shared with the Central MSME NSQF Examination Cell & are also with the respective TC.

5. Method of verification or validation:

- Online Link is send by Central MSME NSQF Examination Cell to respective TC & Assessor. Reporting of the assessor from assessment location is verified by the Central MSME NSQF Examination Cell through the online Meeting Link. Students are also required to join for the online link for verification by the Central MSME NSQF Examination Cell

6. Method for assessment documentation, archiving, and access:

- The Assessment records are shared with Central MSME NSQF Examination Cell & also stored at respective TC.
- Assessor fills the assessment report and shares with the Central MSME NSQF Examination Cell

On the Job Training:

- The module / NOS (which covers the job profile of CNC Operator- Turning will be assessed.
- The candidate must score 60% marks to successfully complete the OJT.
- Learner will be assessed on the basis of OJT report followed by Viva
- Assessment will ensure that the Learner is able to:
    - ✓ Effective engagement with the customers / Subordinates and team
    - ✓ Understand the working of various tools and equipment
    - ✓ Understand the working environment of the industry

Annexure VIII: 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.
Short Term Training (STT)	STT/ Short -term skilling means any vocational training program undertaken for less than a year (Theory + Practical + OJT). https://ncvet.gov.in/sites/default/files/NCVET.pdf