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

MSME TECHNOLOGY CENTRE

QUALIFICATION FILE

ASSISTANT OPERATOR- CNC TURNING -TOOL ROOM

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

☐ Up skilling ☐ Dual/Flexi Qualification ☐For ToT ☐ For ToA

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

NCrF/NSQF Level: 3.0

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

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Section 1: Basic Details

<table>
<tr><td>1.</td><td>Qualification Name</td><td colspan="2">Assistant OPERATOR- CNC TURNING -TOOL ROOM</td></tr>
<tr><td>2.</td><td>Sector/s</td><td colspan="2">Capital Goods & Manufacturing</td></tr>
<tr><td>3.</td><td>Type of Qualification: ☒ New ☐ Revised ☐ Has Electives/Options
☐OEM</td><td>NQR Code & version of existing/previous qualification:
(change to previous, once approved)

QG-03-CG-02408-2024-V1-MSME</td><td>Qualification Name of existing/previous version:

Certificate Course in CNC Turning (CCCT)</td></tr>
<tr><td>4.</td><td>a. OEM Name
b. Qualification Name
(Wherever applicable)</td><td colspan="2">NA</td></tr>
<tr><td>5.</td><td>National Qualification Register (NQR) Code & Version
(Will be issued after NSQC approval)</td><td>QG-03-CG-02408-2024-V1-MSME</td><td>6. NCrF/NSQF Level: 3.0</td></tr>
<tr><td>7.</td><td>Award (Certificate/Diploma/Advance Diploma/Any Other(Wherever applicable specify multiple entry/exits also & provide details in annexure)</td><td colspan="2">Certificate</td></tr>
<tr><td>8.</td><td>Brief Description of the Qualification</td><td colspan="2">The qualification containing different modules which is required for the job role CNC Operator- Turning, this qualifications ultimately helps learner in the following:
● To be expertise in CNC Lathe operating cum setting
● To get an employment in Engineering/ Manufacturing industries
● To become an entrepreneur</td></tr>
<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>Previous relevant Qualification of NSQF Level 2.5 in metal Working/ Machine Tool area</td><td>1.5 year relevant experience</td></tr>
<tr><td>3</td><td>Previous relevant Qualification of NSQF Level 2 in metal Working/ Machine Tool area</td><td>3 year relevant experience</td></tr>
</table>
b. ge: 15 years</td></tr>
</table>

<table>
<tr><td>10.</td><td>Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))</td><td>20</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">NA</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>OJT Recommended (Hours)</th><th>Total (Hours)</th></tr>
<tr><td>Classroom (offline)</td><td>48</td><td>420</td><td>60</td><td>-</td><td>528</td></tr>
<tr><td>Online</td><td>72</td><td>-</td><td>-</td><td></td><td>72</td></tr>
<tr><td>Total</td><td>120</td><td>420</td><td>60</td><td></td><td>600</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">7223.60/ CNC Operator - Turning</td></tr>
<tr><td>15.</td><td>Progression path after attaining the qualification (Please show Professional and Academic progression)</td><td colspan="2">Professional/Career Progress: Technician –CNC Turning

Academic Progress: CNC Operator- Turning (Tool room) -NSQF Level 3 → CNC Programmer (NSQF Level 4.5)</td></tr>
<tr><td>16.</td><td>Other Indian languages in which the Qualification & Model Curriculum are being submitted</td><td colspan="2">Hindi</td></tr>
<tr><td>17.</td><td>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</td><td colspan="2">☐Yes ☒ No URLs of similar Qualifications:</td></tr>
<tr><td>18.</td><td>Is the Job Role Amenable to Persons with Disability</td><td colspan="2">☒ Yes ☐ No
If “Yes”, specify applicable type of Disability: As per Govt. Norms</td></tr>
<tr><td>19.</td><td>How Participation of Women will be Encouraged</td><td colspan="2">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 colspan="2">☒Yes ☐No
The said aspect is covered in the module name Workshop Technology.</td></tr>
<tr><td>21.</td><td>Is Qualification Suitable to be Offered in Schools/Colleges</td><td colspan="2">Schools ☐Yes ☒ No Colleges ☐ Yes ☒ No
Subject to availability of resources.</td></tr>
<tr><td>22.</td><td>Name and Contact Details of Submitting / Awarding Body SPOC
(In case of CS or MS, provide details of both Lead AB & Supporting Abs)</td><td colspan="2">Name: Sh. Vijay Mahipatrao Bankar
Contact No. +0755 3501078
Email-msmetcab@gmail.com</td></tr>
</table>

23.	Final Approval Date by NSQC: 30/04/2024	24. Validity Duration: 3 years	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	Assist in Operation of CNC Lathe Machine	MSME/CCCT/01 & Version 1.0	Core	3	14	30	330	60	-	420	-	100	-	100	200	
2	Demonstrate the working Principle of Machine Tools	MSME/CCCT/02 & Version 1.0	Core	3	1	30	0	-	-	30	100	-	-	-	100	
3	Checking dimensions of CNC machined Part	MSME/CCCT/03 & Version 1.0	Core	3	1	-	30	-	-	30	-	100	-	-	100	
4	Create Part Drawing using Auto-CAD	MSME/CCCT/04 & Version 1.0	Core	3	3	30	60	-	-	90	-	100	-	-	100	
5	Employability skills	MSME/ES/01	None Core	3	1	30	-	-	-	30	100	-	-	-	100	
Duration (in Hours) / Total Credit / Marks					20	120	420	60	-	600	200	300	-	100	600	

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)*

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)*

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 3.5 and above in related field and minimum 2 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

1.	**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 3 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.
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Degree in Engineering (Mechanical/ Production/ Manufacturing Technology) or equivalent With 5 years of experience in Production/ Training/ Design Department from Tool Room/ Technology Centre of MSME or any reputed industry.
3.	**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.
4.	**Assessment Mode***(Specify the assessment mode)*	**Blended Type (Online + 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,** 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:** 55
5.	**Estimated nos. of persons to be trained and employed: Approx. 3000 per Year**
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)*	*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.	Reading and interpretation of Engineering drawings and setting the machine parameters for the operation & Machining as per the requirement. The Job Role also involves study and understands the drawing and selects optimum Machining technique for him and modify/edit the CNC Program as per requirement & Can perform the daily machine maintenance activities. The job role after attaining this qualification "Certificate Course in CNC Turning" is to generate the program for manufacturing the varieties of desired jobs/components within tolerance provided as per the drawing in CNC Turning in a well familiar environment within the given time frame so as to maintain the machining cost involved.	3
Professional and Technical Skills/ Expertise/ Professional Knowledge	Factual knowledge of field of knowledge or study.	Observe machine operation to verify accuracy of machine settings and to detect malfunctions or out-of-tolerance machining, using measuring instruments such as micrometer and dial caliper. Learner shall apply his/her comprehensive knowledge with clear context with a broad concept in general Machining methodology like, tool making processes in machining press tool attachment, Mold attachment, fundamental knowledge of working principal of CNC Turning. The Learner also has the field of knowledge on the manufacturing techniques and specification of CNC machines for which the program need to be generated with stipulated time.	3

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.	3
Broad Learning Outcomes/Core Skill	Calculate technological data for CNC machining Prepare line program for various work profile. Prepare programs , demonstrate , simulate and operate CNC lathe machines for various machining operations Implementation of the health and safety practices, Maintaining 5's at work place. Perform basic maintenance activity on daily basis and prepare record of Machine break down Maintain & prepare reports as per standard / check sheet Calculate various cutting parameters like Feed, RPM, Machining time, and tapper angle etc.	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. 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. The Learner will have wide range of numerical and computational abilities for different machining process, communications.	3
Responsibility	Responsible for own work and learning as well as for the subordinates & Takes complete responsibility for delivery and quality of own work and output.	Learner is expected to perform the task as per given instructions, taking responsibility of proper execution of the program generated and its actions for the operation, quality and accuracy of the work. CNC operator (Turning) works independently and takes responsibility fully for own work, he/she is expected to have openness to learning, ability to plan and organize own work and identify and solve problems in the course of working. Understanding the need to take initiative and manage self-work and group tasks to improve efficiency and effectiveness	3

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

List of Tools and Equipment for Batch Size: 20

S. No.	Tools / Equipment Name	Specification	Quantity for specified Batch size
1	Conventional Turning / Lathe Machine		2
2	CNC Turning Machine with attachments		4
3	Tool & Cutter Grinders		1
4	Conventional Drilling machine		1
5	Grinding Machine		1
6	Pedestal grinding machine		1
7	CNC Simulator		20 seats
8	Desk top / Computer system With LAN		20
9	CAD-Auto CAD Software		20 Seats
10	**Measuring Instruments:** Vernier Calliper, Micrometre: External & Internal, Height Gauge, Dial Indicators (Lever type & Plunger type), Profile Projector, Different types of Gauges (Slip, Bore, Ring, Plug, Radius, Feeler, Thread pitch etc.), Engineering steel rules, Outside & Inside spring 12alipers, Try square, Precision block levels, Surface roughness tester.		1 Set
11	**Cutting tools:** Single Point brazed turning tool, Boring bars, Twist Drills: Parallel & taper shank types (MT-1 / MT-2/ MT-3/MT-4), Knurling and threading tools		1 Set

12	**Cutting Inserts:** CNMG, VNMG, DNMG, WNMG, CCMT and TCMT		1 Set
13	**Tool Holders :** Turning tool holders for OD/ID turning, Profile turning, Grooving/Parting, Drilling, Boring, Threading, Sleeves, Set of Spring collets (ER-16, ER-25,ER-32, ER-40) and Collet adopters		1 set
14	**Hand Tools:** Centre punches, Hammers, Combination Plier, set of number punches, set of double ended spanners, set of box spanners with ratchet handle, Adjustable spanner, set of screw drivers, Nylon / Soft hammer, set of hexagonal Allen keys, cutting files: flat, round, half round, square and triangular		1 set
15	**Others Miscellaneous items for workshop / Lab :** Industry hand gloves, Apron, Safety goggles, Bench vice, Magnetic stand for dial indicators, Spring dividers, Angle Plates, Scribing blocks, Vice mounted tables, Scrap box, Tool storage trolley, Set of soft jaws, Power Saw, Surface plate, Oil stone , Hand pallet truck and First aid kit.		1 set
16	**General Equipment for Classroom**: White Board, Smart Board, Duster, Marker, Multimedia /LCD Projector, Audio Video Aids, Pen drive and Practice exercise etc,.		1 set

Annexure III: 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	HARYANA FASTNERS	SERARIT SINGH	PROPRIETER	166, KAILASH NAGAR, SHERPUR, NEAR CANCER HOSPITAL, LUDHIANA-141010	98140903	HARYANAFASTENERS@GMAIL.COM	
2	VISHESH ELECTRO SYSTEM	AVOTAU SINGH	PROPRIETER	KAILASH NAGAR, BEHIND CANCER HOSPITAL, LUDHIANA-141010. (LNDLA)	98145-00470	VISHESH.SYSTEM@GMAIL.COM	
3	KALSI MACHINE TOOLS INDUSTRY	HARINDU MOHAN KALSHI	PROPRIETER	17611, KAILASH NAGAR, SHERPUR ROAD, LUDHIANA	98888 96488	KIMTON.001@GMAIL.COM	
4	AXOM FARM MACHINERY PVT. LTD.	SWAKSHAR CHAKRAVARTY	MANAGING DIRECTOR	60, MRD ROAD, GUWAHATI, ASSAM - PIN 781020	7086099788	SWAKSHAR@HOTMAIL.COM	
5	ADD CONSTRUCTION	DURKUV HATB	PARTNER	COLLEGE NAGAR, ABHOYPUR, NORTH GUWAHATI GUWAHATI-781031 (ASSAM)	9435119042	ADDCONSTRUCTION38@GMAIL.COM	
6	THE SUPREME INDUSTRIES LIMITED.	MR. SIROMANI RAJKHOWA	PLANT HEAD	E. P. I. P. COMPLEX, AMINGAON.	+91 7578-012031	SIROMANI_RAJKHOWA@SUPREME.CO.IN	
7	JAY AMBAY POLYMERS	NAGEUDU LIALODIS	PROPRIETER	ROAD FANCY,GUWAHATI-781001			
8	CAMA ELECTRICALS PRIVATE LIMITED	NISHAD AZMI BOKTH	H.R MANAGER	2ND FLOOR, E1 AND E2 BLOCK, BRAHMAPUTRA INDUSTRIAL PARK, PLOT NO 21, CHANGSARI, SILA, AMINGAON, NORTH GUWAHATI, KAMRUP, ASSAM,	7099065843	HR@HMCASSAM.IN	
9	VISKALTAB(INDIA) PVT. LTD.	MR. PRADEEP TIWARI	H.R MANAGER	SANWER ROAD INDOOR	9789998959	HR@VISKALFAB.COM	
10	RUDRA MAGNETS LLP	M. P. SHALDA	MANAGER	625, BADAM ROAD, SATYAVEDU MANDAL, SRICITY - 517 646, ANDHRA PRADESH,	98858 77000	CONTACTUS@RUDRAMAGNETS.COM	
11	EAST COAST MAGNETS PVT. LTD.	NIRMALA	MANAGER	44/1/6; PHASES; 1DA:, JEEDIMETIA,HYDRABAD-500055	8048989786	DIRECTOR.EASTCOASTMAGNET.COM	
12	AZAD ENGINEERING LIMITED,	K.SATHIRAJU	GENERAL MANAGER	PLOT NO: 90/C, 90/D, PHASE-I IDA JEEDIMETLA, HYDERABAD 500 055	78931 77300	SATHIRAJU.K@AZAD.IN	
13	ASACO PRIVATE LIMITED	N. ELMURTI	MANAGER OPERATIONS	SAMUHA AEROSPACE, PARK ADIBATLAI BRAHIMPATNAMRANGAREDDYDISTRICT TAMELGANA STATE, INDIA- 501510.	7799 787 747	ASACOLTD@ASACO.IN	

14	HITESH CORPORATION LIMITED	VINAYAK SAWKAR	GENERAL MANAGER	UNIT NO. 201-203, 2ND FLOOR, WELSPUN HOUSE, KAMALA CITY, SENAPATI BAPAT MARG, LOWER PAREL (W), MUMBAI - 400013	86230-34808	VINAY.SAWKAR@HITECHGROUP.COM	
15	SURAJ TOOLS AND ENGINEERING WORKS	DEIM	CEO	MIDC CHIKATHANA AURANGABAD	7447375273	SURAJTOOLS@GMAIL.COM	
16	ALLWIN UNITED ASSOCIATION PVT.LTD	MI PANKAJ	DIRECTOR	ALLWIN UNITED ASSOCIATION PVT.LIMITED	7588537412	CONTACT@TECHNOCADDAPL.COM	
17	MIS ANNA BLOCK BORING CENTER	MASIT KHAN	PROPRIETOR	MIS ANNA BLOCK BORING CENTER	9767375083		
18	LAXMI ENTERPRISES	RANJANA BHAYYA SAHEB PAWAR	MI.MANAGER	SAINAGAR GHANEGAON MIDC WALUJ, AURANGABAD	7387431128		
19	M/S HR INDUSTRIES	VASPUT JAUGELE	PROPRIETOR	SAJAPUR, AURANGABAD	9637384737		
20	GAYATRJ AUTO COMPONENTS, AURANGABAD	MR. RANJEET METE	MANAGER	AURANGABAD	7385613842	INFO@GAYATRIAUTO.IN	
21	SHARP TOOLS	MAHESH DORLE	SR.MANAGER		9689574563		
22	CHANCHAL ENGINEERING WORKS AURANGABAD	DRYHAEBHWAR	PROPRIETOR	AURANGABAD	9765499939	CHANCHALENGINEERINGWORKS@GMAIL.COM	
23	AKSHARA ENGINEERING WORKS	SHIVAJI GAIKWAD		WALUJ MIDC AURANGABAD	9096420857		
24	ARUSHI ENGINEERING AND BREEZING	VIJAYA PARADE	MANAGER	WALUJ MIDC AURANGABAD	9049596736		
25	SR INDUSTRIES AURANGABAD	RAJENDRA SAUDAGAR MARE	SR. MANAGER	AURANGABAD	8698145607		
26	DEVA ENGINEERING AURANGABAD	ASHOK MOTINAM VEOR	SR. MANAGER	AURANGABAD	8459567793		
27	MAULI PATTERN AURANGABAD	MR.PANCHAL	PROFESSOR	AURANGABAD	9673067755		
28	NAVARATNA INDUSTRIES			WALUJ MIDC AURANGABAD			
29	PRANAW ENTERPRISES AURANGABAD	PANDRINATH DEVKAR	PROPRIETOR	AURANGABAD	9371671146	PRANAVENT@GMAIL.COM	
30	R.P INDUSTRIES	PRASHANT PATIL	CEO	MIDC CHIKATHANA AURANGABAD	8007222251	PRASHANTPATIL@GMAIL.COM	
31	TECHNO MOULD SOLUTION	MR.PANDA	PROPRIETOR	AURANGABAD	7774077907	TECHNOMOULD.SOLUTIONS@GMAIL.COM	
32	SANJAY THCHNO PRODUCTS	HEMANT CHAUDHURY	VP-MANUFACTURING	AURANGABAD	9158898090	HEMANT.CHAUDHARI@SANJAYTECHNOPRODUCTS.IN	
33	SPECIAL PRECISION	ASHIWINI TADHAV	PROPRIETOR	AURANGABAD		SPECIALASHIWIN@GMAIL.COM	
34	PARASON MACHINERY (INDIA) PVT LTD	GHAHU	GM	AURANGABAD	9325202860	AMOIL.MOGAL@PASASEN.COM	
35	PADMA INDUSTRIES	VITTHALKADOM	CEO	MIDC AURANGABAD	9421688212	VITTHALKADOM2525@GMAIL.COM	
36	VANI ENGINEERING CO.PVT LTD	SUBH	GENERAL MANAGER	AURANGABAD	9730729991	SKAPE@GMAIL.COM	
37	GLANCE ENGINEERING -6	SUBH SK	GENERAL	CHIKALTHANA	9730729991	S.KALE@GMAIL.COM	

	PVT.LIMITED CHIKALTHANA		MANAGER				
38	JAI BHAVANI ENGINEERING WORKS		GENERAL MANAGER		9370251815		
39	S N ENGINEERINGWORKS	SNEHA	CEO	CH SAMBHAJINAGAR	9822859974	SNEHAG858@GMAIL.COM	
40	MIKRONIX GAUGES PVT LTD		MD	B-25 MIDC , CHIKALTHANA, CH. SAMBHAJINAGAR	9822004674	MGPLAY@GMAIL.COM	
41	R N INDUSTRIES	TLC	CEO	KAIAGRAM, AURANGABAD	9890718928	R.N.INDUSTRIES01@GMAIL.COM	
42	MADURA DIE CAST PVT LIMITD	MADHURA	CEO	SHENDRA AURANGABAD	9422204622	MADHRADIECAST@GMAIL.COM	
43	SWAGATI ENGINEERING WIS2		CEO	CHIKALTHNA,AURANGABAD	9763714369	SWAGATIENGG@GMAIL.COM	
44	IDEAL ENTERPRISE		GENERAL MANAGER	CHIKALTHANA AURANGABAD	9763785199	IDEAL1993@GMAIL.COM	
45	INDEXABLE CUTTING TOOL	TOR	PROPRIETOR	BAJAJNAGAR,AURANGABAD			
46	INDOTURAN INDUSTRIES	USHAL SHINDE	PROPRIETOR	MIDC AURANGABAD WALUJ	9595280808		
47	CREATIVE CASTING INDUSTRIES	MR. SANJAY RANDIRE	PARTNER	K-30, MIDC WALUJ , AURANGABAD	9011001671	CREATIVECAST@REDIFFMAIL.COM	
48	PYRAMID INDUSTRIES	MR. RAJENDRA KALE	PROPRIETOR				
49	RMG INDUSTRIES	RAOUAL	CEO	MIDC AURANGABAD WALUJ	9766699611	EAJUQANDA@RMGINDUSTRIES.COM	
50	SUDHIR AUTOMATOVE INDUSTRIES PVT LTD	LALIT VATS	DY. MANAGR	HSIIDC, Rohtak Haryana	9671365042	sai@saifasteners.com	
51	NIRMAL AUTOTECH INDUSTRIES PVT LTD	MR. SOURABH	DGM	Plot No 24 near jind railway crossing by pass Rohtak, Haryana	8527307221	operations@nirmalautotech.com	
52	SHIV TOOL INDUSTRIES	MR. ANKIT	MANAGER	HSIIDC, Rohtak Haryana	9138383963	Sainiankit436@gmail.com	
53	REAL CUT ENGINEERING	MR. SANJAY KAUSHIK	MD	New Hissar Bhiwani Link Road IDC Rohtak 124001, Haryana	9896172121	Sanjaykaushik95@gmail.com	
54	AREO FASTENERS PVT LTD	JAISMER SINGH LATHAR	MD	Plot No 29 sector 31 B IMT Delhi Road, Rohtak 124001, Haryana	11256334810	sales@aerofpl.com	
55	HI TECH COORPORATION LTD	VINAY SAWKAR	GM	Sector 30 IMT Rohtak, Haryana	8623034808	Vinay.sawkar@hitechgroup.com	

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	3000	2500	300	210	-	-
25-26	4000	3000	400	280	-	-
26-27	5000	3500	500	350	-	-

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	437	437	437	393	21	21	21	15	-	-	-	-
1.0	21-22	703	703	703	633	34	34	34	29	-	-	-	-
1.0	22-23	827	827	827	744	25	25	25	19	-	-	-	-

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.
2. ESDP Scheme under the Ministry of MSME.
3. PM Dakshta Aur Kushalta Sampann Hitgrahi Yojana under M/o SJE, GOI
4. Capacity building Training program under National SC/ST Hub, M/o MSME, GOI
5. DDUGKY under the MoRD.
6. Schemes under the different state Government.

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:	PC.1 Explain the types of CNC Machines, Advantages & Limitations of CNC	-	100	-	100

MSME/CCCT/01 Assist in Operation of CNC Lathe Machine	applications. PC.2 Explain CNC interpolation, open loop & close loop control systems with feedback devices PC.3 Explain co-ordinate systems & points mode. PC.4 Identify Cutting Tools and Tool Holders from the standard (ISO Standard) PC.5 Discuss operations of single point cutting tool PC.6 Selection of standard tools/ cutters/Tool Holders as per requirement PC.7 Explain Tool Holder Types / Styles (LH, RH and Neutral) PC.8 Define Turning Insert Shapes PC.9 Describe Operating Conditions PC.10 Explain Work holding methods PC.11 Identify and Explain Tool holding Devices PC.12 Explain Cutting parameters PC.13 Discuss the need of different oils & lubricants used PC.14 Describe standard mathematical formulae used in calculation required for machine tool operation. PC.15 Calculations of machining parameters like cutting speed, cutting feed, depth of cut etc. PC.16 Explain Coordinate System and Machine Geometry PC.17 Explain Axis – Orientation PC.18 Define Work sketch and Calculation PC.19 Use appropriate sources to obtain the required information e.g. Numerical control on CNC machine, types of CNC control PC.20 Check that all the equipment is correctly connected and in a safe and usable working condition PC.21 Select Appropriate Raw Material as per size of the Parts to be manufactured mentioned in drawing and specification PC.22 Calculate parameters & set a references for the various operations PC.23 Use appropriate techniques to create CNC program that are sufficiently				

	and clearly detailed PC.24 Use codes and other references that follow the required conventions PC.25 Plan the machining activities before starting them. PC.26 Set up the suitable template/folder PC.27 Set up and check that all peripheral devices are connected and correctly operating PC.28 Confirm that the program is as per job specifications and contains all relevant information PC.29 Make sure that programs are checked and approved by the appropriate person PC.30 Save the program in the appropriate file type and location PC.31 Prepare programs, demonstrate, simulate and operate CNC lathe, machines for various machining operations. PC.32 Execute program and inspect simple geometrical forms / standard parts PC.33 Explain the type of maintenance and Maintenance checklist PC.34 Carry out Routine Maintenance activity as per standard / checklist PC.35 Safe handling of tools, equipment & CNC Machines & Personal safety tool as per company product requirement. PC.36 Use protective clothing / equipment for specific tasks on CNC Machine PC.37 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 face if any with the solution. ● Technical Books referred during the OJT ● Conclusion				
NOS / Module:	PC.1 Explain occupational health and Safety. PC.2 Explain about safety rules.	100	-	-	-

MSME/CCCT/02 Demonstrate the working Principle of Machine Tools	PC.3 State the name and location of people responsible for health and safety in the workplace PC.4 State the names and location of documents that refer to health and safety in the workplace PC.5 Using various appropriate fire extinguishers on different types of fires correctly PC.6 Explain the PPE in Industrial Safety. PC.7 Explain Basic injury prevention, Hazard identification and avoidance, safety signs for Danger, Warning, caution & personal safety message PC.8 Explain the types of Waste disposal techniques/ Management. PC.9 Explain the importance of occupational health and safety at workplace. PC.10 Explain the concept of 5S PC.11 the 5S cycle, activities and 5S program overview PC.12 Describe 5S program steps PC.13 Explain different types of machine tools (Turning machines) PC.14 Explain the Parts of a lathe machine PC.15 Explain various job holding device on lathe machine PC.16 Explain the function of lathe machine PC.17 Explain various operations performed on lathe Machine. PC.18 Explain Methods of performing tapper turning operation PC.19 Explain Taper turning, step turning, radius making and parting-off. PC.20 Explain Different types of fitting tools and marking tools used in fitting practice. PC.21 Explain the systems of unit - FPS, CGS, MKS/SI unit. PC.22 unit of length, Mass and time and Conversion of units PC.23 Mensuration: Area and perimeter of square, rectangle, parallelogram, triangle, circle, semi-circle, Volume of solids and cylinder PC.24 Explain quality policy and quality organization: Indian and international organization PC.25 Explain the concept of quality Assurance and 7 QC Tools.				

NOS / Module : **MSME/CCCT/03** Checking dimensions of CNC machined Part	PC.1 Demonstrate the linear measurement by vernier Caliper (Digital, Analog and Dial type) PC.2 Demonstrate the linear measurement by micrometer (Analog and Digital type) PC.3 Demonstrate the linear Measurement by height gauges (Digital and Analog type). PC.4 Calculate the least count of various instruments (Vernier Caliper, Micrometer and Height Gauge) PC.5 Demonstrate the diametrical Measurement: inside diameter by inside micrometer PC.6 Demonstrate the Diametrical Measurement: depth of hole or recess by depth micrometer. PC.7 Angle and taper measurements by bevel protractor and Sine bar. PC.8 To find out the flatness of Surface plate by use of spirit level and optical flat. PC.9 Measure surface roughness by roughness tester. PC.10 Perform measurement of micro threads (British , Acme, Matric) by use of profile projector PC.11 Apply limits, fits and tolerances for a given geometry PC.12 Check various dimensions using gauges (Go-No GO Type, plug, ring etc.) PC.13 Measurement of screw thread using various instruments PC.14 List Geometrical Dimensions & Tolerances used in manufacturing industries. PC.15 Evaluate and do analysis of parameters of screw threads Measurement:	-	100	-	-
NOS / Module : **MSME/CCCT/04** Create Part Drawing using Auto-CAD	PC.1 Explain the Importance of Engineering drawing, PC.2 Explanation the scope and objective of Engineering Drawing PC.3 Demonstrate and explain drawing Standards: Size of drawing sheets – Layout of drawing sheet – Title Blocks – Types of lines – Folding of drawing sheets.	-	100	-	-

	PC.4 Use of dimensioning techniques according to Standard of dimensions PC.5 Demonstrate orthographic & Isometric projection by using a viewing box and a model PC.6 Demonstrate first angle and third angle projection PC.7 Use of symbol in projections -Front view, top view and side view PC.8 Demonstrate the use of Auto CAD and Auto CAD interface PC.9 Apply coordinates systems in auto CAD PC.10 Demonstrate the use of tool bars. PC.11 Create solid field area (Hatching, Gradient) PC.12 Edit objects using the object property tool bar and various methods. PC.13 Use sketch settings and Style toolbar (text style, Multilayer style etc.) PC.14 Edit object using object property toolbar & various method. PC.15 Create the replica of model using copy, array command PC.16 Work with models in the modify toolbar. PC.17 Identify the appropriate Tool to create and modify the model PC.18 Change the orientation of the object by aligns, offset, rotate command PC.19 Apply standard dimension in a mechanical component. PC.20 Use of dimensioning Methods: Linear, Align, ordinates, Radius, Diameter, Arc length, angular etc, PC.21 Use of leader with text, block reference PC.22 Edit or modify the CAD Drawings PC.23 Use of layers Management and its applications PC.24 Apply GD& T Symbols in drawings PC.25 Develop proper drawing layout.				
NOS / Module: **MSME/ES/01** Employability skills	PC.1 Explain the major applications of MS Office PC.2 Explain the different types of e-commerce PC.3 List the benefits of e-commerce for retailers and customers PC.4 Discuss how the Digital India campaign will help boost e-commerce in India PC.5 Write applications pertaining to various matters.	100	-	-	-

	PC.6 Explain power of positive attitude and Importance of commitment PC.7 Explain motivation and the Ways to motivate oneself and Personal goal setting PC.8 Explain the Effective & Level of Communication PC.9 Explain communication and Significance of technical communication? PC.10 Explain the methods of listening Skills. PC.11 Explain the differences between bio-data, CV and Resume. PC.12 Explain verbal and non-verbal Communication PC.13 Explain how to face an interview. PC.14 Explain team work, group work, team formation process PC.15 How to Minimize the team conflicts PC.16 Explain Ethics & values PC.17 Explain the concept of entrepreneurship, and entrepreneurship v/s Management PC.18 Explain the process of project report preparation for setting up a new business PC.19 Explain the role of various schemes and institute for self- employment i.e MSME, DIC, NSIC, SIDBI etc, PC.20 Role of financial institution to support startup PC.21 Discuss the importance of saving money PC.22 Discuss the main types of bank accounts PC.23 Differentiate between fixed and variable costs PC.24 Describe the different types of insurance products PC.25 Discuss the main types of electronic funds transfers				
	Total Marks	**200**	**300**	**-**	**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 MSME NSQF Assessment Agency via email for the assessment.
- MSME NSQF Assessment Agency sends the assessment confirmation to respective TC.
- MSME NSQF Assessment Agency deploys the certified Assessor for executing the assessment at respective TC via online / offline mode.
- MSME NSQF Assessment Agency & respective TC Internal Assessment cell monitors the assessment process & records.

2. Testing Environment:

- MSME NSQF Assessment Agency confirms the Assessment location, date and time
- For number of candidates more than 30 separate assessors are assigned for the assessment.
- MSME NSQF Assessment Agency & 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 MSME NSQF Assessment Agency and it is verified by the MSME NSQF Assessment Agency 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 MSME NSQF Assessment Agency to respective TC & Assessor. Reporting of the assessor from assessment location is verified by the MSME NSQF Assessment Agency through the online Meeting Link. Students are also required to join for the online link for verification by the MSME NSQF Assessment Agency.
- Assessment Photographs are shared with the MSME NSQF Assessment Agency & are also with the respective TC.

5. Method of verification or validation:

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

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

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

On the Job Training:

- Each module will be assessed separately.
- 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