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

MSME TECHNOLOGY CENTRE

QUALIFICATION FILE

JR. TECHNICIAN - INSPECTION & QUALITY CONTROL

☒ 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: 3

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**	**JR. TECHNICIAN - INSPECTION & QUALITY CONTROL**	
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-03-CG-02399-2024-V1-MSME**	**Qualification Name of existing/previous version:** **Advance Certificate Course in Inspection & Quality Control (CCIQC)**
4.	**a. OEM Name** **b. Qualification Name** (*Wherever applicable)*	**NA**	
5.	**National Qualification Register (NQR) Code & Version** (*Will be issued after NSQC approval)*	QG-03-CG-02399-2024-V1-MSME	**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**	• Learners who attain this qualification are competent in Inspection and Quality Control and get a job as Quality Control Inspector/ Quality Controller in Manufacturing Sector/Industry. • Qualified learners who attain the above skill can also become an Entrepreneur.	
9.	**Eligibility Criteria for Entry for Student/Trainee/Learner/Employee**	a. Entry Qualification & Relevant Experience:	

S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)
1	10th & equifications	Nil
2	Previous NSQF Levels 2.5	1.5
3	Previous NSQF Levels 2	3

b. Age: 15 years

<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>50</td><td>360</td><td>90</td><td>-</td><td>500</td></tr>
<tr><td>Online</td><td>100</td><td>-</td><td>-</td><td>-</td><td>100</td></tr>
<tr><td>Total</td><td>150</td><td>360</td><td>90</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">7543.30 (Quality Control Inspector – Dimension Check)</td></tr>
<tr><td>15.</td><td>Progression path after attaining the qualification (Please show Professional and Academic progression)</td><td colspan="2">Professional Progress: Technician - Inspection and Quality Control</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:
The proposed qualification differs in learning outcomes in line with the MSME to meet the requirement of MSME's / Manufacturing Industries.</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 the 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>
</table>

21.	**Is Qualification Suitable to be Offered in Schools/Colleges**	**Schools☒ Yes ☐ No Colleges ☒ Yes ☐ No** **Subject to availability of resources.**	
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: 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	Create Part Drawing using Auto-CAD	MSME/CCIQC-01 & version 1.0	**Core**	3	3	30	60	-	-	90	-	100	-	-	100	
2	Demonstrate the working Principle of Machine Tools	MSME/CCIQC/02 & version 1.0	**Core**	3	3	30	60	-	-	90	100	-	-	-	100	
3	Asst. in Checking & Inspection of Part	MSME/CCIQC/03 & version 1.0	**Core**	3	13	60	240	90	-	390	100	100	-	100	300	

4	Employability skill	MSME/ES/01	**Non-Core**	3	1	30	-	-	-	30	100	-	-	-	100	
Duration (in Hours) / Total Credit / Marks					**20**	**150**	**360**	**90**	**-**	**600**	**300**	**200**		**100**	**600**	

Assessment - Minimum Qualifying Percentage:

*Please 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**	Yes

	Required for Trainer	

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:**35
5.	**Estimated nos. of persons to be trained and employed:- 2000 per year**
6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments:** *yes* If "No", why:

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	The individual must be able to demonstrate well developed skills to carry out tasks like monitor and maintain the quality of the manufacturing processes and final products. Monitor & calibrate all the measuring instruments/ equipment for maintenance of quality standards of the final product.	The job role after attaining this qualification "Advance Certificate Course in Inspection & Quality Control" is to generate the program for manufacturing the varieties of desired jobs/components within tolerance provided as per the drawing in production in a well familiar environment. The role also involves study and understand the drawing and selects optimum manufacturing technique By himself and modify/edit the program as per requirement.	3

Professional and Technical Skills/ Expertise/Professional Knowledge	The individual on the job must possess knowledge of facts, principles and processes related to validation procedures for simulation & software's used for validation tools, documentation requirements for specifications Equipment setting / installation/operation.	As job holder is dealing with Inspection & Quality Control and development of Machining Components which is to be used for mass production of the product, it is required that job holder should possess overall (Comprehensive) theoretical knowledge in the field of Inspection & Quality Control. Job Holder shall apply his/her comprehensive knowledge with clear context with a broad concept in general Inspection & Quality Control methodology. Job Holder shall have detail knowledge of elements of Inspection & Quality Control, application of each part and importance, accuracy criteria Inspection & Quality Control, concept of hardenability, Properties of machining elements material. The job holder also has the field of knowledge on the manufacturing techniques and specification of Inspection & Quality Control for which the program need to be generated	3
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	The individual on the job requires cognitive and practical skills to be able to think through and devise countermeasure for resolution for any quality related issue.	Job holder shall carry out the Inspection & Quality Control and development of product through following professional skill: gather accurate information on the requirements of the customer, create conceptual Inspection & Quality Control, confirm the customer's objectives for the engineering products or processes, using standard unit system as customer's requirement, plan for Inspection & Quality Control process and Develop a schedule for the product design process e.g. works order date, plan date, actual completion date, Obtain and review existing information with reference to the specified Inspection & Quality Control.	3

Broad Learning Outcomes/Core Skill	The individual on the job should be able to read drawings of part/tool and interpret the key characteristics like dimensions, profile, material, GDT etc. & able to communicate Quality issues effectively with team members	Job holder shall work on project where he/she shall gather accurate information on Inspection & Quality Control concept and requirements, Confirm the project objectives, preparation of conceptual plan, selection of inspection & Quality Control, communicate clearly about the project requirement to the group members through written /verbal/e mail etc. as per organizational standard, identify different Inspection & Quality Control options which will meet requirements and Inspection & Quality Control specification, Develop creative solution among different options available using latest technology. Analyze project concepts to meet Inspection & Quality Control requirements, identify problems with work planning, procedures, output and behavior and their implications e.g. unpredictable behavior of material in Inspection & Quality Control during validation, prioritize and plan for problem solving, communicate problems appropriately to others.	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	Venire Calliper	Industry Standard	10
2	Micrometre		10
3	Height Gauge		2
4	Profile Projector		1
5	Different types of Gauges (Slip, Bore, Ring, Plug, Radius, Feeler, Thread pitch etc.)		2
6	Engineering steel rules		20 seats
7	Outside & Inside spring callipers		20
8	Desk top / Computer system With LAN		20 Seats

9	Auto CAD Software		20 Seats
10	Try square		1 Set
13	CMM		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	SURAJ TOOLS AND ENGINEERING WORKS	DEIM	CEO	MIDC CHIKATHANA AURANGABAD	7447375273	SURAJTOOLS@GMAIL.COM	
2	INDOTURAN INDUSTRIES	USHAL SHINDE	PROPRIETOR	MIDC AURANGABAD WALUJ	9595280808		
3	MIKRONIX GAUGES PVT LTD		MD	B-25 MIDC , CHIKALTHANA, CH. SAMBHAJINAGAR	9822004674	MGPLAY@GMAIL.COM	
4	ALLWIN UNITED ASSOCIATION PVT.LTD	MI PANKAJ	DIRECTOR	ALLWIN UNITED ASSOCIATION PVT.LIMITED	7588537412	CONTACT@TECHNOCADDAPL.COM	
5	MIS ANNA BLOCK BORING CENTER	MASIT KHAN	PROPRIETOR	MIS ANNA BLOCK BORING CENTER	9767375083		

6	LAXMI ENTERPRISES	RANJANA BHAYYA SAHEB PAWAR	MI.MANAGER	SAINAGAR GHANEGAON MIDC WALUJ, AURANGABAD	7387431128		
7	M/S HR INDUSTRIES	VASPUT JAUGELE	PROPRIETOR	SAJAPUR, AURANGABAD	9637384737		
8	GAYATRJ AUTO COMPONENTS, AURANGABAD	MR. RANJEET METE	MANAGER	AURANGABAD	7385613842	INFO@GAYATRIAUTO.IN	
9	SHARP TOOLS	MAHESH DORLE	SR.MANAGER		9689574563		
10	CHANCHAL ENGINEERING WORKS AURANGABAD	DRYHAEBHWAR	PROPRIETOR	AURANGABAD	9765499939	CHANCHALENGINEERINGWORKS@GMAIL.COM	
11	AKSHARA ENGINEERING WORKS	SHIVAJI GAIKWAD		WALUJ MIDC AURANGABAD	9096420857		
12	ARUSHI ENGINEERING AND BREEZING	VIJAYA PARADE	MANAGER	WALUJ MIDC AURANGABAD	9049596736		
13	SR INDUSTRIES AURANGABAD	RAJENDRA SAUDAGAR MARE	SR. MANAGER	AURANGABAD	8698145607		
14	DEVA ENGINEERING AURANGABAD	ASHOK MOTINAM VEOR	SR. MANAGER	AURANGABAD	8459567793		

15	MAULI PATTERN AURANGABAD	MR.PANCHAL	PROFESSOR	AURANGABAD	9673067755		
16	NAVARATNA INDUSTRIES			WALUJ MIDC AURANGABAD			
17	PRANAW ENTERPRISES AURANGABAD	PANDRINATH DEVKAR	PROPRIETOR	AURANGABAD	9371671146	PRANAVENT@GMAIL.COM	
18	R.P INDUSTRIES	PRASHANT PATIL	CEO	MIDC CHIKATHANA AURANGABAD	8007222251	PRASHANTPATIL@GMAIL.COM	
19	TECHNO MOULD SOLUTION	MR.PANDA	PROPRIETOR	AURANGABAD	7774077907	TECHNOMOULD.SOLUTIONS@GMAIL.COM	
20	SANJAY THCHNO PRODUCTS	HEMANT CHAUDHURY	VP-MANUFACTURING	AURANGABAD	9158898090	HEMANT.CHAUDHARI@SANJAYTECHNOPRODUCTS.IN	
21	SPECIAL PRECISION	ASHIWINI TADHAV	PROPRIETOR	AURANGABAD		SPECIALASHIWIN@GMAIL.COM	
22	PARASON MACHINERY (INDIA) PVT LTD	GHAHU	GM	AURANGABAD	9325202860	AMOIL.MOGAL@PASASEN.COM	
23	PADMA INDUSTRIES	VITTHALKADOM	CEO	MIDC AURANGABAD	9421688212	VITTHALKADOM2525@GMAIL.COM	
24	VANI ENGINEERING CO.PVT LTD	SUBH	GENERAL MANAGER	AURANGABAD	9730729991	SKAPE@GMAIL.COM	

25	GLANCE ENGINEERING -6 PVT.LIMITED CHIKALTHANA	SUBH SK	GENERAL MANAGER	CHIKALTHANA	9730729991	S.KALE@GMAIL.COM	
26	JAI BHAVANI ENGINEERING WORKS		GENERAL MANAGER		9370251815		
27	S N ENGINEERINGWORKS	SNEHA	CEO	CH SAMBHAJINAGAR	9822859974	SNEHAG858@GMAIL.COM	
28	R N INDUSTRIES	TLC	CEO	KAIAGRAM, AURANGABAD	9890718928	R.N.INDUSTRIES01@GMAIL.COM	
29	MADURA DIE CAST PVT LIMITD	MADHURA	CEO	SHENDRA AURANGABAD	9422204622	MADHRADIECAST@GMAIL.COM	
30	SWAGATI ENGINEERING WIS2		CEO	CHIKALTHNA,AURANGABAD	9763714369	SWAGATIENGG@GMAIL.COM	
31	IDEAL ENTERPRISE		GENERAL MANAGER	CHIKALTHANA AURANGABAD	9763785199	IDEAL1993@GMAIL.COM	
32	INDEXABLE CUTTING TOOL	TOR	PROPRIETOR	BAJAJNAGAR,AURANGABAD			
33	CREATIVE CASTING INDUSTRIES	MR. SANJAY RANDIRE	PARTNER	K-30, MIDC WALUJ , AURANGABAD	9011001671	CREATIVECAST@REDIFFMAIL.COM	

34	PYRAMID INDUSTRIES	MR. RAJENDRA KALE	PROPRIETOR				
35	RMG INDUSTRIES	RAOUAL	CEO	MIDC AURANGABAD WALUJ	9766699611	EAJUQANDA@RMGINDUSTRIES.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
23-24	500	400	250	200	-	-
24-25	600	480	240	192	-	-
25-26	700	560	350	280	-	-

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
0.0	20-21	0	0	0	0	0	0	0	0	-	-	-	-
0.0	21-22	7	7	7	7	3	3	3	3	-	-	-	-

0.0	22-23	5	5	5	5	2	2	2	2	-	-	-	-

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	Workshop / CAD Software, Video Content , E-Resource library	100:0
4	☐Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	CMM Machines, Measuring instruments,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 inspection 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/CCIQC/01** **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. PC.4 Use of dimensioning techniques according to Standard of dimensions PC.5 Demonstrate orthographic & Isometric projection by using a	-	100	-	

	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/CCIQC/02**	PC.1 Explain occupational health and Safety. PC.2 Explain about safety rules.	100	-	-	-

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/CCIQC/03** **Asst. in Checking & Inspection of Part**	PC.1 Define Metrology, Inspection, Accuracy and Precision, Standards of measurements. PC.2 Demonstrate the linear measurement by vernier Caliper (Digital, Analog and Dial type) PC.3 Demonstrate the linear measurement by micmeroter (Analog and Digital type) PC.4 Demonstrate the linear Measurement by height gauges (Digital and Analog type). PC.5 Calculate the least count of various instruments (Vernier Caliper, Micrometer and Height Gauge) PC.6 Demonstrate the diametrical Measurement: inside diameter by inside micrometer PC.7 Demonstrate the Diametrical Measurement: depth of hole or recess by depth micrometer. PC.8 Angle and taper measurements by bevel protractor and Sine bar. PC.9 To find out the flatness of Surface plate by use of spirit level and optical flat. PC.10 Measure surface roughness by roughness tester. PC.11 Perform measurement of micro threads (British , Acme, Matric) by use of profile projector PC.12 Apply limits, fits and tolerances for a given geometry	100	100	-	100

	PC.13 Check various dimensions using gauges (Go-No GO Type, plug, ring etc.) PC.14 Measurement of screw thread using various instruments PC.15 List Geometrical Dimensions & Tolerances used in manufacturing industries. PC.16 Evaluate and do analysis of parameters of screw threads Measurement: PC.17 CMM types: Rigid body analysis of machine errors (see machine tools), PC.18 CMM probes, usage, Software and measurement procedures, PC.19 Task specific uncertainty. PC.20 Specification of machine errors, PC.21 Standard tests for machining centers and lathes, ASME B5.54,ASME B5.57, PC.22 Rigid body analysis of machine errors (see CMMs PC.23 Stylus methods:- Instruments Filters, Parameters, Optical methods, White light interferometers, PC.24 Other area instruments ,a. Pitch and pitch diameter .b. Thread angle c. Involute curves d. Pitch diameter measurement over wires e. Measurement of gear and thread wires				
NOS / Module : **: MSME/ES/01** **Employment Skills**	PC.1 Understand the significance of employability skills in meeting the job requirements PC.2 Identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices. PC.3 Explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness,	**100**			**100**

	emotional awareness, continuous learning mindset etc. PC.4 Speak with others using some basic English phrases or sentences PC.5 Follow good manners while communicating with others PC.6 Work with others in a team PC.7 Communicate and behave appropriately with all genders and PwD PC.8 Report any issues related to sexual harassment PC.9 Use various financial products and services safely and securely PC.10 Calculate income, expenses, savings etc. PC.11 Approach the concerned authorities for any exploitation as per legal rights and laws PC.12 Operate digital devices and use its features and applications securely and safely PC.13 Use internet and social media platforms securely and safely PC.14 Identify and assess opportunities for potential business PC.15 Identify sources for arranging money and associated financial and legal challenges PC.16 Identify different types of customers PC.17 Identify customer needs and address them appropriately. PC.18 Follow appropriate hygiene and grooming standards. PC.19 Create a basic biodata PC.20 Search for suitable jobs and apply PC.21 Identify and register apprenticeship opportunities as per requirement				
	Total Marks	**200**	**200**		**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