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

QUALIFICATION FILE

JR. DESIGNER - TOOL

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

☐ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT☐ For ToA

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

NCrF/NSQF Level: 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

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Email-msmetcab@gmail.com

Table of Contents

Section 1: Basic Details

1.	**Qualification Name**	**Jr. Designer - Tool**	
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-02406-2024-V1-MSME**	**Qualification Name of existing/previous version:** **Master Certificate Course in Tool Design (MCCTD)**
4.	**a. OEM Name** b. **Qualification Name** (Wherever applicable)	**NA**	
5.	**National Qualification Register (NQR) Code&Version** (*Will be issued after NSQC approval)*	QG-4.5-CG-02406-2024-V1-MSME	**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)*	**Certificate**	
8.	**Brief Description of the Qualification**	The learner who attend this qualification shall be able to : • Assist the Sr. Tool Designer in Designing the Tool • Design and develop Tools and die with the use of high end CAD / CAM Software • Prepare the Bill of material for the Tool and Die. • Get an employment in Tool Room / Manufacturing industries / MSMEs	

9. Eligibility Criteria for Entry for Student/Trainee/Learner/Employee

a. Entry Qualification & Relevant Experience: Qualification & Relevant Experience in the field of Mechanical Engineering & its Equivalent

S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)
1	Completed 3-year diploma after 10th	Nil
2	Pursuing 3rd year of 3-year diploma after10th and continuing education	Nil
3	Previous relevant Qualification of NSQF Level 4 in the field of Mechanical Design / Tool Design	1.5-year relevant experience

Age: 18 Years

10. Credits Assigned to this Qualification, Subject to Assessment *(as per National Credit Framework (NCrF))*

20

11. Common Cost Norm Category (I/II/III) *(wherever applicable)***:I**

12. Any Licensing requirements for Undertaking Training on This Qualification *(wherever applicable)*

NA

13. Training Duration by Modes of Training Delivery *(Specify **Total Duration** as per selected training delivery modes and as per requirement of the qualification)*

☒Offline ☐Online ☒Blended

Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
Classroom (offline)	**84**	**270**	**120**	**-**	**474**
Online	**126**	**-**	**-**	**-**	**126**
Total	**210**	**270**	**120**		**600**

(Refer Blended Learning Annexure for details)

14.	**Aligned to NCO/ISCO Code/s***(if no code is available mention the same)*	*3115.13 (*Tool Designer)	
15.	**Progression path after attaining the qualification** *(Please show Professional and Academic progression)*	*Professional Progress: Deputy Manager* *Academic Progress: Designer (Tool Room) (NSQF Level 5.5)*	
16.	**Other Indian languages in which the Qualification & Model Curriculum are being submitted**	**Hindi**	
17.	**Is similar Qualification(s) available on NQR-if yes, justification for this qualification**	**☐Yes ☒No URLs of similar Qualifications:**	
18.	**Is the Job Role Amenable to Persons with Disability**	**☒ Yes ☐ No** **If "Yes", specify applicable type of Disability: As per govt.norms.**	
19.	**How Participation of Women will be Encouraged**	**Seats are reserved as per government Norms.**	
20.	**Are Greening/ Environment Sustainability Aspects Covered** *(Specify the NOS/Module which covers it)*	**☒Yes ☐No** **The said aspect is covered in the module name Employability skills.**	
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 & Modify Part Model using CAD Software	MSME/MCCTD/01 & Version 1.0	Core	**4.5**	**3**	**30**	**60**	**-**	**-**	**90**	**100**	**100**	**-**	**-**	**200**	
2.	Create & Modify Part Model and Generate Part Program Using CAD/ CAM Software	MSME/MCCTD/02 & Version 1.0	Core	**4.5**	**3**	**30**	**60**	**-**	**-**	**90**	**100**	**100**	**-**	**-**	**200**	
3.	Design of Jigs & Fixtures	MSME/MCCTD/03 & Version 1.0	Core	**4.5**	**2**	**30**	**30**	**-**	**-**	**60**	**100**	**100**	**-**	**-**	**200**	
4.	Design of Press Tools	MSME/MCCTD/04 & Version 1.0	Core	**4.5**	**5**	**30**	**60**	**60**	**-**	**150**	**100**	**100**	**-**	**-**	**200**	
5.	Design of Moulds	MSME/MCCTD/05 & Version 1.0	Core	**4.5**	**5**	**30**	**60**	**60**	**-**	**150**	**100**	**100**	**-**	**-**	**200**	
6.	Employability skills	MSME/ES/02	Non-Core	**4.5**	**2**	**60**	**-**	**-**	**-**	**60**	**100**	**-**	**-**	**-**	**100**	
Duration (in Hours) / Total Marks					**20**	**210**	**270**	**120**		**600**	**600**	**500**			**1100**	

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

*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 5 and above in related field and minimum 2 yearsof 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 certified assessors will be able to conduct 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 theneed 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: 500 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	• Design and Development of Jigs and Fixtures • Design and Development of Press Tools • Design and Development of Mould • Design and Development of Die Casting Dies • Develop tool design using CAD software • Develop CAM program • Describe general Tool Construction • Describe elements of tool with their functions & material. • Describe tool Design procedure • List different tooling standards	PC.1 In this qualification Job Holder has to carry out Designing activity of tools like Jigs & Fixture, Press Tools, Moulds and Die Casting Dies. In case 2D model received convert into 3D model and quality check of the 3D model against inspection sheet. PC.2 Preparing Conceptual drawings and select among the best solutions. Job holder shall release bill of material (BOM). Job holder shall prepare mould base / die set, detailed drawing of inserts and other elements of tool drawings using CAD software. Job holder shall be responsible for the verification and release of drawing made by the team members. Job holder shall use Computer Aided Design software like Auto CAD for 2D drafting of tools and SolidWorks, Unigraphics for 3D modeling by using competent software as per requirement. PC.3 As job holder is dealing with design and development of tooling which is to be used for mass production of the product, it is required that job holder should possess factual and theoretical knowledge in the field of tool design and development like press, jigs & fixture, Mould and Die Casting Die tool design and develop. Job Holder shall apply his/her specific knowledge with clear concept in general tool	Level 4.5

		construction methodology like, types of Jigs & fixture, press tool, Mould and Die Casting Die, locating principle and methods in jigs & fixture, tool making processes in press tool, Mold, DCD, fundamental knowledge of working principal of Press tool, Jigs & Fixture, Mould tool and Die casting Die. PC.4 Job Holder shall have detail knowledge of element of tool with clear concept of material. PC.5 Job Holder shall use best tool design procedure like press tool design, Mould design, Jigs and fixture design, Die casting die design etc. PC.6 Job holder shall use various tooling standard like FIBRO, MISUMI, HASCO, also use some nonstandard organizational practices	
Professional and Technical Skills/ Expertise/ Professional Knowledge	• Identify customer's requirement and create conceptual design • Develop plan for Tool design process • Design and Development of Jigs and Fixtures • Design and Development of Press Tools • Design and Development of Mould • Design and Development of Die Casting Dies • Develop Various Tool Like Jigs & Fixture, Press Tool, Mould & Die Casting dies as per the requirements. Using CAD Software.	PC.1 Job holder shall carry out the design and development of tool through following professional skill: gather accurate information on the requirements of the customer or tool designer, create conceptual design, confirm the customer's objectives for the engineering products or processes, Using standard unit system as customer's requirement. PC.2 Job Holder shall design and develop press tool, Mould Tool, Die Casting Die and Jigs and Fixture by using various CAD software like AutoCAD, UG, Solid work, etc. Job Holder shall prepare design standard concept and classify the appropriate procedure also Explain various theoretical and practical aspect in press tool, Mould Tool, Die Casting Die and Jigs and Fixture tool deign. Job Holder shall develop CAM program using Unigraphics etc. and check that	Level 4.5

			whether all the equipment are correctly connected and in a safe and usable working condition, establish coordinate system, orientation and views as per the job.	
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• Understand Personal Strengths \ Value, Digital Literacy, Money Matters and Preparing for Employment & Self Employment • Develop entrepreneurship skills • Exercise self- management within the work contexts	PC.1	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.	Level 4.5
		PC.2	Leaner can understand the basic process of becoming an entrepreneur & start up and can get benefits from various government schemes applicable.	
		PC.3	Learner can Analyze and clarify task-related information, Meaning and importance of entrepreneurship, Enterprise Registration, Business Skills - Motivation and Leadership	
		PC.4	Learner can develop Effective Communication, Interpersonal Relationships, Compliances & Marketing plan.	
		PC.5	Learner can do the required Time Management for successful completion of the project & develop Time Management within the team.	
Broad Learning Outcomes/Core Skill	• Use basic health and safety practices at the workplace • Work on project • Communicate effectively • Mathematical Calculation skills • Maintain & prepare reports as per standard / check sheet. • identify job-site hazardous work and state possible	PC.1	Job holder shall work on project where he/she shall gather accurate information on project, organize logically. e.g. concept and requirements, Confirm the project objectives, preparation of conceptual plan, selection of CAD/CAM/CAE software based on capabilities of modelling, use Presentation skills, utilize CAD & CAM Software, communicate clearly about the project requirement to the group members through written /verbal/e mail etc. as per	Level 4.5

	causes of risk or accident.	organizational standard, identify different design options which will meet requirements and design specification. PC.2 Job holder will use mathematical calculations while designing and analyzing the CAD model through: calculate stain stress value for standard mechanical component. Calculate the geometry of component on the basis of given parameter. Calculate the bulking stress, calculate the pressure, and calculate the factor of safety. Calculation of machining parameter feed speed, depth of cut, spindle speed. PC.3 Job holder shall use protective equipment while working on computers and during working on shop floor, wear helmet, state the name and location of people responsible for health and safety in the workplace, state the names and location of documents that refer to health and safety in the workplace, identify job-site hazardous work and state possible causes of risk or accident. PC.4 Learners will have the knowledge of evaluating the components with the standards drawing for the given job, Use of GD&T symbols. PC.5 Learners are capable of taking decision for the quality output and productivity enhancement	

Responsibility	• Responsibility for own work and learning and full responsibility for other's works and learning • Team Building • Manages processes andprocedures within broadparameters for defined activities.	PC.1 Job holder shall be responsible for own work of design and development. After completing the concept job holder work with time line and with job responsibilities of team members like designing and development CAD model, analyze the design, optimize the design and generate production drawing, bill of material, verification and release of final drawings, plan the manufacturing process. Supervise and execute the machining process in shop floor. PC.2 Job holder will 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. PC.3 Job holder will follow work standard, specific norms and procedures laid down by the organization. Job holder will develop moral, values and ethical practices in business operation.	Level 4.5

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

List of Tools and EquipmentBatch Size:20

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Desk top / Computer system With LAN	As per Standard specification and availability preferably with Lasted version of OS and Software	1 PC per candidates
2	CAD Software – AUTOCAD, UNIGRAPHICS NX	As per the availability preferably Lasted version of Software	1 seat per candidates
3	CAM SOFTWARE –UNIGRAPHICS NX CAM INSTALLED IN ALLOTED PC	As per the availability preferably Lasted version of Software	1 seat per candidates
4	**General Equipment for Classroom:** White Board, Smart Board, Duster, Marker, Multimedia /LCD Projector, Audio Video Aids, Pen drive and Practice exercise etc.	As per standard and availability	1 Set
5	Sample Tools for Demonstration	As per standard and availability	1 Set

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. NO	ORGANIZATION NAME	REPRESENTATIVE NAME	DESIGNATION	CONTACT ADDRESS	CONTACT PHONE NO	E-MAIL ID	LINKEDIN PROFILE *(IF AVAILABLE)*
1	MIKRONIX GAUGES PVT LTD		MD	B-25 MIDC , CHIKALTHANA, CH. SAMBHAJINAGAR	9822004674	MGPLAY@GMAIL.COM	
2	ALLWIN UNITED ASSOCIATION PVT.LTD	MI PANKAJ	DIRECTOR	ALLWIN UNITED ASSOCIATION PVT.LIMITED	7588537412	CONTACT@TECHNOCADDAPL.COM	
3	MIS ANNA BLOCK BORING CENTER	MASIT KHAN	PROPRIETOR	MIS ANNA BLOCK BORING CENTER	9767375083		
4	LAXMI ENTERPRISES	RANJANA BHAYYA SAHEB PAWAR	MI.MANAGER	SAINAGAR GHANEGAON MIDC WALUJ, AURANGABAD	7387431128		
5	M/S HR INDUSTRIES	VASPUT JAUGELE	PROPRIETOR	SAJAPUR, AURANGABAD	9637384737		
6	GAYATRJ AUTO COMPONENTS, AURANGABAD	MR. RANJEET METE	MANAGER	AURANGABAD	7385613842	INFO@GAYATRIAUTO.IN	
7	SHARP TOOLS	MAHESH DORLE	SR.MANAGER		9689574563		
8	CHANCHAL ENGINEERING WORKS AURANGABAD	DRYHAEBHWAR	PROPRIETOR	AURANGABAD	9765499939	CHANCHALENGINEERINGWORKS@GMAIL.COM	
9	AKSHARA ENGINEERING WORKS	SHIVAJI GAIKWAD		WALUJ MIDC AURANGABAD	9096420857		
10	ARUSHI ENGINEERING AND BREEZING	VIJAYA PARADE	MANAGER	WALUJ MIDC AURANGABAD	9049596736		
11	SR INDUSTRIES AURANGABAD	RAJENDRA SAUDAGAR MARE	SR. MANAGER	AURANGABAD	8698145607		
12	DEVA ENGINEERING AURANGABAD	ASHOK MOTINAM VEOR	SR. MANAGER	AURANGABAD	8459567793		
13	MAULI PATTERN AURANGABAD	MR.PANCHAL	PROFESSOR	AURANGABAD	9673067755		

14	NAVARATNA INDUSTRIES			WALUJ MIDC AURANGABAD			
15	PRANAW ENTERPRISES AURANGABAD	PANDRINATH DEVKAR	PROPRIETOR	AURANGABAD	9371671146	PRANAVENT@GMAIL.COM	
16	R.P INDUSTRIES	PRASHANT PATIL	CEO	MIDC CHIKATHANA AURANGABAD	8007222251	PRASHANTPATIL@GMAIL.COM	
17	TECHNO MOULD SOLUTION	MR.PANDA	PROPRIETOR	AURANGABAD	7774077907	TECHNOMOULD.SOLUTIONS@GMAIL.COM	
18	SANJAY THCHNO PRODUCTS	HEMANT CHAUDHURY	VP-MANUFACTURING	AURANGABAD	9158898090	HEMANT.CHAUDHARI@SANJAYTECHNOPRODUCTS.IN	
19	SPECIAL PRECISION	ASHIWINI TADHAV	PROPRIETOR	AURANGABAD		SPECIALASHIWIN@GMAIL.COM	
20	PARASON MACHINERY (INDIA) PVT LTD	GHAHU	GM	AURANGABAD	9325202860	AMOIL.MOGAL@PASASEN.COM	
21	PADMA INDUSTRIES	VITTHALKADOM	CEO	MIDC AURANGABAD	9421688212	VITTHALKADOM2525@GMAIL.COM	
22	VANI ENGINEERING CO.PVT LTD	SUBH	GENERAL MANAGER	AURANGABAD	9730729991	SKAPE@GMAIL.COM	
23	GLANCE ENGINEERING - 6 PVT.LIMITED CHIKALTHANA	SUBH SK	GENERAL MANAGER	CHIKALTHANA	9730729991	S.KALE@GMAIL.COM	
24	SURAJ TOOLS AND ENGINEERING WORKS	DEIM	CEO	MIDC CHIKATHANA AURANGABAD	7447375273	SURAJTOOLS@GMAIL.COM	
25	JAI BHAVANI ENGINEERING WORKS		GENERAL MANAGER		9370251815		
26	S N ENGINEERINGWORKS	SNEHA	CEO	CH SAMBHAJINAGAR	9822859974	SNEHAG858@GMAIL.COM	
27	R N INDUSTRIES	TLC	CEO	KAIAGRAM, AURANGABAD	9890718928	R.N.INDUSTRIES01@GMAIL.COM	
28	MADURA DIE CAST PVT LIMITD	MADHURA	CEO	SHENDRA AURANGABAD	9422204622	MADHRADIECAST@GMAIL.COM	
29	SWAGATI ENGINEERING WIS2		CEO	CHIKALTHNA,AURANGABAD	9763714369	SWAGATIENGG@GMAIL.COM	
30	IDEAL ENTERPRISE		GENERAL MANAGER	CHIKALTHANA AURANGABAD	9763785199	IDEAL1993@GMAIL.COM	

31	INDEXABLE CUTTING TOOL	TOR	PROPRIETOR	BAJAJNAGAR,AURANGABAD			
32	INDOTURAN INDUSTRIES	USHAL SHINDE	PROPRIETOR	MIDC AURANGABAD WALUJ	9595280808		
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: 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
2023-24	300	240	0	0	-	-
2024-25	450	360	0	0	-	-
2025-26	600	480	0	0	-	-

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	43	43	43	40	-	-	-	-	-	-	-	-
0.0	21-22	57	57	57	43	-	-	-	-	-	-	-	-
0.0	22-23	58	58	58	48	-	-	-	-	-	-	-	-

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 DakshtaAurKushaltaSampannHitgrahi Yojana under M/o SJE, GOI
4. Capacity building Training program under National SC/ST Hub, M/o MSME, GOI
5. 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 is 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/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☐Theory/ Lectures - Imparting theoretical and conceptual knowledge	Books/ e-books, Presentations, Reference Material , Audio / Video Modules with 2D and 3D animation Videos /Broadcasts.	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	CAD Software, Video Content , E-Resource library	100:0
4	☐Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	CAD Software, Sample Tools of Jigs & Fixture, Press Tool, Die Casting Dies & Mould	100:0

5	☐Tutorials/ Assignments/ Drill/ Practice	Online Question Bank, MCQ based tests, Tool Design Practice	50:50
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)/ Project Work Internship/ Apprenticeship Training	Live Project on Tool Design at concern Industry/ Institution	100:0

Annexure III: 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/MCCTD/01** Create & Modify Part Model using CAD Software	PC 1. Gather accurate information on the requirements of the CAD/CAM/CAE software in Existing industries. PC 2. Identify any unique or specific features that need particular consideration. PC 3. Identify the system requirement to run the CAD/CAM/CAE Software PC 4. Record all relevant information in the appropriate information systems for future use PC 5. Confirm the operational and functional requirements of the CAD/CAM/CAE Software PC 6. Identify the field to use CAD/CAM/CAE Software use PC 7. Ensure that the design brief captures all the requirements of the customer PC 8. Ensure the use of CAD technology to design and design documentation PC 9. Describe and classify types drawing generation using CAD Software PC 10. Define the dimension and symbol in drawing sheet using CAD PC 11. Generation of different types of view using Different CAD Software PC 12. Create different type of table hole table, Bill of material, Revision table etc.	-	100	-	-

	PC 13. To generate the associative drawing using medium end and high end software PC 14. Stetting of drawing for print by using plotter, printer using CAD PC 15. Create drawing template for production drawing in CAD PC 16. Mange the drawing properties using CAD PC 17. Edit or modify the CAD Drawing / Model using Solidworks. PC 18. Understand Basic Part Modeling, Basic Modeling, Terminology, Choosing the Best Profile, Choosing the Sketch Plane, Details of the Part feature. PC 19. Clarify of Knowledge to the assembly constraint & develop different types of assembly design by using Solid Work. PC 20. Obtain and review existing information with reference to the specified design requirement like 2D drawing and 3D model, existing sample, etc. PC 21. Deliver the designs in the appropriate format to the customers PC 22. Confirm and agree understanding of the design requirements PC 23. Deal with problems relating to the design requirements and agreed solutions PC 24. Identify design options which will meet requirements and the design specification PC 25. Ensure that the designs comply with all relevant regulations, standards directives or codes of practice PC 26. Deal promptly and effectively with problems within your control and seek help and guidance from the relevant people if you have problems that you cannot resolve PC 27. Ensure that the designs are protected in line with organizational procedures PC 28. Evaluate the design against the established criteria, using appropriate evaluation methods. PC 29. Develop a schedule for the design process e.g. works order date, plan date, actual completion date. PC 30. Save and store the design documentation as per organizational guidelines				

	PC 31. Communicate information to the appropriate people using various company specific media.				
	Total Marks	**-**	**100**	**-**	-
NOS / Module: **MSME/MCCTD/02** Create & Modify Part Model and Generate Part Program Using CAD/ CAM Software	PC 1. Describe various feature in CAD and CAM software. PC 2. Explain about limitation & advantages of each CAD/CAM PC 3. Explain working of CAD/CAM PC 4. Create and Edit 2D geometric sketches by using Unigraphics NX software. PC 5. Develop 3D modeling by using advanced command. PC 6. Apply assembly constraint & develop different types of assembly design by using CAD Software like Unigraphics NX PC 7. List the CAM software that is use for Tool Path generation PC 8. Plan the machining activities before starting them. PC 9. Access and use the correct CAM software and tools e.g. Using UG-CAM software PC 10. Calculate parameters like speed feed, depth of cut etc. And set a references for the various operations PC 11. Create / import entities in 3D space as per job requirement PC 12. Modify entities in 3D space as per job requirement PC 13. Create 3-D views on the screen by manipulating drawing planes and inserting 3-D geometric shapes PC 14. Perform programming for solid modeling PC 15. Produce a model for export to the following manufacturing systems Manufacturing systems: DNC (Direct Numerically controlled) /CNC (Computer Numerically controlled) machines; 3D printer; other specific system PC 16. Produce CAM program which comply with organizational guidelines; statutory regulations and codes of practice; CAM software standards; national and international standards	-	100	-	-

	PC 17. Confirm that the program is as per job specifications and contains all relevant information PC 18. Use appropriate techniques to create program that are sufficiently and clearly detailed PC 19. Use codes and other references that follow the required conventions PC 20. Make sure that programs are checked and approved by the appropriate person PC 21. Save the program in the appropriate file type and location.				
	Total Marks	**-**	**100**	**-**	**-**
NOS / Module: **MSME/MCCTD/03** Design of Jigs & Fixtures	PC 1. Describe and classify types of Jigs & fixture. PC 2. Explain locating principle and methods in jigs & fixture PC 3. Select locating devices, Use standard pts. PC 4. Explain Tool making processes in Jigs & Fixture. PC 5. Explain working of Pneumatics and hydraulic actuation clamping in jigs and fixture PC 6. Describe the use of Guiding Elements & its type. PC 7. Calculate clamping force & Design procedure for different jigs PC 8. Identify application of each part and importance in there. PC 9. Understand the Selection process of Standard Element for design data book. PC 10. Selection of Jigs & fixture body Construction. PC 11. Select material in Jig & Fixture design PC 12. Understand deign of Jigs & fixture PC 13. Understand the conceptual design of Jigs & Fixture. PC 14. Use of CAD/CAM in Jigs and Fixture Design PC 15. Describe the tool design procedure as, 1. Design of locator and supporting block 2. Design/selection of clamp 3. Design/selection of bush	100	100	-	-

	4. Design/selection of fasteners 5. Design of jig plate 6. Prepare Bill of material 7. Assembly drawing.				
	Total Marks	**100**	**100**	**-**	**-**
NOS / Module: **MSME/MCCTD/04** Design of Press Tools	PC 1. Understand and classify Press machines PC 2. Describe the characteristics of press machines PC 3. Understand feeding and unloading equipment PC 4. Have fundamental knowledge of Design principles of presses PC 5. Explain shearing theory PC 6. List different type of tools PC 7. Perform mathematical calculations for designing PC 8. Will be able to calculate best economy for production. PC 9. Describe and select elements of press tool PC 10. Perform Design calculation for elements PC 11. Apply alignment system design for press tool. PC 12. Explain compound and progressive dies PC 13. Design Compound and progressive tool. PC 16. Describe the tool design procedure as, 1. Identify types of press tool as per needs 2. Calculate cutting clearance 3. Determine punch and die size 4. Decide best suitable strip layout based on efficiency 5. Calculate die dimensions like margin, thickness, length & width 6. Calculate total height of punch, area of punch block 7. Select Die set and fasteners standard size 8. Bill of material	100	100	-	-

	9. Draw assembly drawing				
	Total Marks	**100**	**100**	**-**	**-**
NOS / Module: **MSME/MCCTD/05** Design of Mould	PC 1. Describe terminology in moulds PC 2. List different types moulds & elements of moulds PC 3. Describe the functions of element / component of tools PC 4. To select standard moulds system PC 5. To explain significance of parting surface PC 6. To select split molds PC 7. To use standard parts for split molds PC 8. Understand side cores and cavities PC 9. Design molding with undercuts PC 10. To identify and apply various design features PC 11. To understand injection mold. PC 12. To draw the conceptual drawing for appropriate mould PC 13. Perform design calculation for tooling PC 14. To select different standard element. PC 15. To draw final tool design. PC 16. Prepare bill of material. PC 17. Describe the tool design procedure as, 1. Identify types of mould tool 2. Analyze number of cavity 3. Calculate core & cavity size 4. Determine the sizes of core and cavity plate 5. Select standard mould base 6. Draw conceptual design with tentative bill of material 7. Validate design in consultation with group/faculty	100	100	-	-

	8. Final design				
	Total Marks	**100**	**100**	**-**	**-**
NOS / Module: **MSME/ES/01** Employability skills	PC 1. Explain occupational health and Safety. PC 2. Explain about safety rules. PC 3. State the name and location of people responsible for health and safety in the workplace PC 4. Identify employability skills required for jobs in various industries. & Identify and explore learning and employability portals PC 5. Recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc. PC 6. Follow environmentally sustainable practices. & Recognize the significance of 21st Century Skills for employment PC 7. Practice the 21st Century Skills such as Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life PC 8. Use basic English for everyday conversation in different contexts, in person and over the telephone. PC 9. How to Minimize the team conflicts & Explain Ethics & values? PC 10. Read and understand routine information, notes, instructions, mails, letters etc. written in English PC 11. Write short messages, notes, letters, e-mails etc. in English & Understand the difference between job and career PC 12. Prepare a career development plan with short- and long-term goals, based on aptitude & Discuss the main types of electronic funds transfers PC 13. Follow verbal and non-verbal communication etiquette and active listening	100	-	-	-

	techniques in various settings & work collaboratively with others in a team PC 14. Communicate and behave appropriately with all genders and PwD& escalate any issues related to sexual harassment at workplace according to POSH Act. PC 15. Select financial institutions, products and services as per requirement & carry out offline and online financial transactions, safely and securely. PC 16. Identify common components of salary and compute income, expenses, taxes, investments etc& identify relevant rights and laws and use legal aids to fight against legal exploitation PC 17. Operate digital devices and carry out basic internet operations securely and safely & use e- mail and social media platforms and virtual collaboration tools to work effectively PC 18. Use basic features of word processor, spreadsheets, and presentations. PC 19. Identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research & develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion. PC 20. Identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity PC 21. Identify different types of customers & identify and respond to customer requests and needs in a professional manner.				
	Total Marks	**100**	**-**	**-**	**-**
Grand Total		**500**	**600**		

Annexure IV: 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 VI: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf