QUALIFICATION FILE

Machine Operator - CNC Lathe

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

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

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

NCrF/NSQF Level:3.5

Submitted By:

Central Institute of Petrochemicals Engineering & Technology (CIPET)

Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India

CIPET Head office, T.V.K Industrial Estate, Guindy, Chennai – 600 032.

Table of Contents

Section 1: Basic Details

1.	**Qualification Name**	**Machine Operator – CNC Lathe (MO-CNC-L)**	
2.	**Sector/s**	**Chemicals & Petrochemicals (CPC)**	
3.	**Type of Qualification: ☐ New ☒Revised ☐ Has Electives/Options ☐OEM**	**NQR Code & version of existing/previous qualification:** *(change to previous, once approved)* **2021/CP/CIPET/04616**	**Qualification Name of existing/previous version: Machine Operator – CNC Lathe (MO-CNC-L)**
4.	**a. OEM Name** **b. Qualification Name** (*Wherever applicable)*	**Not Applicable.**	
5.	**National Qualification Register (NQR) Code&Version** (*Will be issued after NSQC approval)*	**QG-3.5-CP-04136-2025-V2-CIPET**	**6. NCrF/NSQF Level: Level 3.5**
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**	Machine Operator – CNC Lathe is expected to Operate Computerized Numerical Controlled (CNC) Lathe Machine, carrying out operations on conventional lathe machine, Measuring and checking the work piece as per specification, maintain good condition of the machine with regular maintenance and understanding of the potential dangers at the workplace, the practices to minimize risks and how to deal in case of accidents and emergency situations.	
9.	**Eligibility Criteria for Entry for Student/Trainee/Learner/Employee**	**a. Entry Qualification &Relevant Experience:**	
10.	**Credits Assigned to this Qualification, Subject to Assessment***(as per National Credit Framework (NCrF))*	**16**	**11. Common Cost Norm Category (I/II/III)** *(wherever applicable)***:I**
12.	**Any Licensing requirements for Undertaking Training on This Qualification***(wherever applicable)*	NA	

S. No.	Academic/Skill Qualification (with Specialization – if applicable)	Required Experience (with Specialization – if applicable)
1.	11th Standard	-
2.	10th or equivalent	1.5 year relevant experience
3.	8th Standard	4.5 years relevant experience
4.	Previous relevant NSQF Level 3	1.5 year relevant experience

<table>
<tr><td>13.</td><td>Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</td><td 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>150</td><td>300</td><td>30</td><td>-</td><td>480</td></tr>
<tr><td>Online</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</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">NCO-2015/7223.5002</td></tr>
<tr><td>15.</td><td>Progression path after attaining the qualification (Please show Professional and Academic progression)</td><td colspan="2">Machine Operator-CNC Lathe/Shop floor In-charge in Tool Room, Tool & Die Making, Mould Manufacturing, Capital Goods Manufacturing Industry</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:</td></tr>
<tr><td>19.</td><td>How Participation of Women will be Encouraged</td><td colspan="2">An increasing population of educated and working women needs inclusion, by formulating policy measures on skilling, job creation, and support services. Women comprises of >30% of the labourers among micro, small and medium enterprises. Opportunities for work that is proximate, child care facilities, safe transportation, gender acceleration plan and return to work (women to join back the workforce after motherhood) go a long way in increasing the proportion of women in the workforce. Thus, during selection of candidates for the training programme, Female candidates will be given preference and encouraged to join.</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</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</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: Mr. Arunav Banerjee
Email: cipethovtc@cipet.gov.in Contact No.: 9402183512
Website: www.cipet.gov.in</td></tr>
<tr><td>23.</td><td>Final Approval Date by NSQC: 26.05.2025</td><td>24. Validity Duration: 3 Years</td><td>25. Next Review Date: 25.05.2028</td></tr>
</table>

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	**Perform lathe operations on metal or plastic material using Conventional Centre lathe machine**	CPC/ N 7011 & V2.0	Core	3.5	5	40	110	-	-	**150**	26	98	-	-	**124**	-
2	**Perform turning and other lathe operations on metal or plastic workpieces using Computer Numerically Controlled Lathe machines**	CPC/ N 7012 & V2.0	Core	3.5	5	40	110	-	-	**150**	26	128	-	-	**154**	-
3	**Maintain basic health and safety practices at the workplace, 5S.**	CPC/N0411 & V2.0	Non-Core	3.5	1	10	20	-	-	**30**	10	30	-	-	**40**	-
4	**Effective working with others**	CPC/N 7014 & V2.0	Core	3.5	1	10	20	-	-	**30**	10	10			**20**	
5	**Basics of MS Office / Open Source office suite software**	CPC/N0219 & V2.0	Non-Core	3.5	1	10	20	-	-	**30**	8	14	-	-	**22**	-
6	**Basic knowledge of communication/ Soft Skills**	CPC/ N 0418 & V2.0	Non-Core	3.5	1	10	20	-	-	**30**	10	10			20	
7	**Employability Skills**	DGT/VSQ/N0101 & V1.0	Non-Core	3.5	1	30	-	-	-	**30**	10	10	-	-	**20**	-
8	**On the Job Training (OJT)**	N/A	Core	3.5	1	-	-	30	-	**30**	-	-	-	-	-	-
Duration (in Hours) / Total Marks			-	-	**16**	**150**	**300**	**30**	**-**	**480**	**100**	**300**			**400**	-

Elective NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.	NA															
2.																
Duration (in Hours) / Total Marks																

Optional NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.	NA															
2.																
Duration (in Hours) / Total Marks																

Assessment - Minimum Qualifying Percentage

*Please specify**any one** of the following:*

Minimum Pass Percentage –Aggregate at qualification level:

50% for theory and 70% for practical*(Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)*

Minimum Pass Percentage –NOS/Module-wise:

(Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	**Trainer's Qualification and experience in the relevant sector (in years)***(as per NCVET guidelines)*	Diploma with minimum 2 years experience in field of Mechanical / Production / Plastics Mould / Tool / Tool & Die / Manufacturing Engineering / Technology
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	B.E. / B.Tech. / M.Sc. with 2 years experience in the field of Mechanical / Production / Plastics Mould / Tool / Tool & Die / Manufacturing Engineering / Technology
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**	Nil

Section 4: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Diploma with minimum 5 years experience (or) B.E. / B.Tech. with minimum 2 years experience in the field of Mechanical / Production / Plastics Mould / Tool / Tool & Die / Manufacturing Engineering / Technology
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Diploma with minimum 6 years experience (or) B.E. / B.Tech. with minimum 3 years experience in the field of Mechanical / Production / Plastics Mould / Tool / Tool & Die / Manufacturing Engineering / Technology
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	B.E. / B.Tech. with minimum 4 years experience (or) M.E. / M.Tech. with minimum 2 years experience in the field of Mechanical / Production / Plastics Mould / Tool / Tool & Die / Manufacturing Engineering / Technology
4.	**Assessment Mode***(Specify the assessment mode)*	Physical Assessment
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):NO**
2.	**Latest Market Research Reports or any other source (not older than 2years) (Yes/No):NO**
3.	**Government /Industry initiatives/ requirement (Yes/No):YES**
4.	**Number of Industry validation provided:5 Nos.**
5.	**Estimated nos. of persons to be trained and employed: 500 Candidates**
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)*	• Entry Qualification for this course is 11th Standard **Or** 10th or equivalent **Or** 8th Standard with 4.5 year relevant experience **Or** Previous relevant NSQF Level 3 with 1.5 year relevant experience • After successful completion of training, Trainee / Candidate are eligible for Assistant Shift In charge/ Assistant Supervisor in Plastics Processing Industry (Level 3). • Job description: Machine Operator – CNC Lathe is expected to Operate Computerized Numerical Controlled (CNC) Lathe Machine, carrying out operations on conventional lathe machine, Measuring and checking the work piece as per specification, maintain good condition of the machine with regular maintenance and understanding of the potential dangers at the workplace, the practices to minimize risks and how to deal in case of accidents and emergency situations.
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	**Equipment Required:** **Class Room equipment:** LCD Projector/Screen, Computer, charts, Black / White board & Duster. **Measuring equipment:** Steel Ruler, Micrometer, Vernier Caliper, Radius gauge, Feeler gage, Steel measuring tape, Weighing Balance (1 No.) **Hand Tools:** Hammer, screwdriver set with Multiple heads, Allen key hexagonal , File triangular, Hacksaw, adjustable, Spanner set double side, Adjustable spanner **Personal Protective equipment:** Safety Goggles, Rubber Gloves, Asbestos gloves, Fire Extinguisher, Apron, Helmet, First Aid Box with Medicines. **Raw material:** Mild Steel, Stainless Steel, Aluminum, Brass, etc. **Equipment & Auxiliary equipment:** Conventional Lathe machine, CNC Lathe Machine, CAM software, CNC Simulator, Different types of CNC controllers, 3-Jaw & 4-Jaw Chuck, Machine vice, Cutting Tools (Single Point) Both HSS & Carbide, Inserts types, Boring bar, Drills, Knurling tool, etc., tool holders and other accessories.
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	1. Criteria for assessment for each Qualification Document are being created by CIPET. 2. Each Assessable outcome (AO) will be assigned marks proportional to its importance in Learning Outcome and few performance criteria may be allotted marks in combine. 3. Each Learning outcome will be assessed both for theoretical knowledge and practical

		which is being proportionately demonstrated in the table below. 4. The assessment for the theory part will be based on knowledge bank of questions created by CIPET which will contain multiple choice theory questions and Practical question database with mark allotment criteria. 5. To pass the Qualification Document, every trainee should score a minimum of 50 % in Functional and all Generic Learning Outcome's. 6. In case of successfully passing only certain number of Learning Outcome's, the trainee is eligible to take Subsequent assessment on the balance Learning Outcome's to pass the Qualification Document.
4.	**Annexure:** Assessment Strategy*(Mandatory)*	**Assessment strategy:** • Assessment criteria for Qualification Document have been developed. Each Learning outcome have separate marks for Theory and Practical Skills. • The Training Assessment Wing will have assessors who will not be associated with training activities and will be provided training on the said work. Thus it will ensure that the assessment carried out is fair and consistent. • Set of question bank developed to assess the theoretical and practical knowledge. To ensure the quality, each trainees get the unique set of question. • Student has to score minimum marks separately for theoretical and practical skill and overall percentage should also be 50% for theory and 70% for practical. • Empanelment of subject matter expert as assessor to assess trainee specifically on practical skills. • Assessments are preferably conducted by written examination papers in English/ regional languages according to the requirement. • It has been ensure that TP/trainer should not be present during assessment.
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is "Blended Learning")*	-
6.	**Annexure:** Multiple Entry-Exit Details *(Mandatory, in case qualification has multiple Entry-Exit)*	-
7.	**Annexure:** Acronym and Glossary *(Optional)*	-
8.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	*Enclosed as Annexure-I*
9.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	*Enclosed as Annexure-II*
10.	**Supporting Document:** Occupational Map *(Mandatory)*	*Enclosed as Annexure-III*
11.	**Supporting Document:** Assessment SOP *(Mandatory)*	*Enclosed as Annexure-IV*
12.	**Any other document you wish to submit:**Industry validation	*Enclosed as Annexure-V*

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	Machine Operator – CNC Lathe is expected to Operate Computerized Numerical Controlled (CNC) Lathe Machine and he has to carried out the following: • Understanding the working principle & construction of lathe machine • Carrying out operations on conventional lathe machine • To performlathe operations such as facing, turning, stepped turning, taper turning, internal & external threading, grooving, chamfering, drilling, boring and reaming, profiles and special forms. • Measuring and checking the work piece as per specification • Understanding the working principle of CNC Lathe machine • Carryoutturningoperations usingCNC machine • To understand the importance, knowledge and practices an operator needs to observe at the workplace. • It includes understanding of the potential dangers at the workplace, the practices to minimize risks and how to deal in case of accidents and emergency situations.	Machine Operator – CNC Lathe requires limited range of activities in the CNC Lathe Machine like operation of machine such as facing, turning, stepped turning, taper turning, internal & external threading, grooving, chamfering, drilling, boring and reaming, profiles and special forms.	3.5
Professional knowledge	The user/individual on the job needs to know and understand: • Working principle, construction, knowledge and practices of the conventional & CNC Lathe machine • Concept of engineering drawing, isometric and orthographic projection, sectional views, auxiliary views, dimensioning. • Safety mechanisms on the machine, safety guards and procedure to check their functionality • Different kinds of Operations in CNC Lathe Machine.	The operator should understand and know basic facts, process, and principle of CNC Lathe Machine.	3.5
Professional skill	The user/individual on the job needs to know and understand: • General principles, procedure and process knowledge, loading and unloading procedure for the Conventional and CNC Lathe Machines. • Different types of tools and machinery The individual on the job needs to know and understand how to:	The operator should recall the procedures, process need to carried out in the machine and understand the safety procedures. Thus he should demonstrate practical skill , routine and repetitive in CNC Lathe application/ process.	3.5

	• Plan, prioritize and sequence work operations as per job requirements • Shall be able to detect out of tolerance limit of component or any malfunctioning of the machine and take corrective action • Decide when to contact supervisor in case of any unresolved problems • Analyse and interpret geometric dimensions and tolerances and apply balanced judgments to different situations. • Think through the problem, evaluate the possible solutions and take or suggest optimum solution • Seek appropriate assistance from other sources to resolve problems • Identify sources of support that can be availed of for problem solving for various kind of problems • Identify immediate or temporary solutions to resolve delays • Identify and understand the possible causes and their effect on the health and safety at the workplace.		
Core skill	The individual on the job needs to know and understand how to: • Read and interpret correctly the job specifications from drawing/ job card, manuals, safety instructions etc. in English and/ or local language • Able to fill up the required formats/ documents in English and / or local language • Interact and communicate with supervisor or other company personnel as per requirement • Shall be able to use simple numerical computation such as addition, subtraction, multiplication, division, fractions and decimal, percentages and proportions, simple ratios and average • Check and clarify task-related information, other issues from the supervisor, coordinates, subordinates etc.	The operator should be able to read warnings, instructions and other text material on product labels, components etc with minimum required clarity, should have skill of basic arithmetic, communication skill and basic understanding of working environment	3.5
Responsibility	The operator is having some responsible for his own job and self learning. He/she set up basic machine controls and operates the CNC Lathe in order to produce the desired machined components as per the approved drawings.	The operator is responsible for his own job in CNC Lathe and self learning and work under the close supervision in the Machines.	3.5

Annexure: Tools and Equipment(Lab Set-Up)

List of Tools and Equipment

Batch Size:50

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	CNC Lathe machine	CNC	1
2	CNC programming system	PC	1
3	Conventional Lathe	-	1
4	Work piece	Oversized	50
5	Cutting tool	Cutting tool	5
6	Job holder	CNC	1
7	Vernier Calliper	Digital	5
8	Practice Drawing	A4 / A3 sheet	50
9	Part Drawing	A4 / A3 sheet	50
10	Measuring equipment	Steel Ruler, Micrometer, Vernier Calliper, Radius gauge, Feeler gage, Steel measuring tape	As per requirement
11	Hand Tools	Hammer, screw driver set with Multiple heads, Allen key hexagonal , File triangular, Hacksaw, adjustable, Spanner set double side, Adjustable spanner	As per requirement
12	Personal Protective equipments	Safety Goggles, Rubber Gloves, Asbestos gloves, Fire Extinguisher, Apron, Helmet, First Aid Box with Medicines	As per requirement

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Personal Computer
2. Projection Equipment
3. White Board
4. Board Marker
5. PowerPoint Presentation
6. Participant's Handbook.

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.	TSS India Limited	Mr. Mohak Agarwal	Director	24, Abulkalam Azad Road, Howrah – 711 101	9748074251	mohak@tssmanigroup.net.in	-
2.	Hindustan Pipes & Fittings Pvt. Ltd.	Mr. Jitendra Kumar Singhal	Director	E216 & E216A, RIICO Industrial Area, sarna Dungar, Phase-1, Jhotwara Extension, Jaipur – 302 012	9649425333	hindustanpipe2009@gmail.com	-
3.	Kadambari Industries	Mr. Durgesh Sharma	Manager - QA	Plot No.B-3, Shri Tirupati Udhyog Vihar, Near RIICO Industrial Area, Kaladera, Jaipur – 303 801	8278649893	kdindustries2018@gmail.com	-
4.	Kisan Mouldings Limited	Mr. Sarfaraj khan	Head – Quality	Survey No. 108/1/6, Village Khadoli, Silvassa – 396 230	9825355496	khan@kisangroup.com	-
5.	Miraj Pipes & Fitting Pvt. Ltd.,	Mr. Haresh Chavda	DGM QA & QC	Opposite Gangotri, Feniyon Ka Guda, Badi-Thur, Sisarma link Road, Udaipur – 313 001, Rajasthan	8875004984	haresh.chavda@mirajpipes.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	500	400	50	40		
2024-25	600	480	60	48		
2025-26	700	560	70	57		

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	2020-21	156	156	156	129	2	2	2	2	-	-	-	-
1.0	2021-22	0	0	0	0	0	0	0	0	-	-	-	-
1.0	2022-23	200	200	200	161	10	10	10	8	-	-	-	-

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. CSR Scheme

Content availability for previous versions of qualifications:

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

Languages in which Content is available:English & Hindi

Annexure: Blended Learning

Blended Learning Estimated Ratio &Recommended Tools:

Refer NCVET "Guidelines for Blended Learning for Vocational Education, Training & Skilling" available on:https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☐Theory/ Lectures - Imparting theoretical and conceptual knowledge		
2	☐Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		
3	☐Showing Practical Demonstrations to the learners		
4	☐Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	☐Tutorials/ Assignments/ Drill/ Practice		
6	☐Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	☐On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
CPC/ N 7011: Perform lathe operations on metal or plastic material usingConventional Centre lathe machine	AO1. Understand and comply with safety, environmental & other relevant regulations and guidelines.	0.5	2		
	AO2. Wear personal protective equipment (PPE) like safety glasses, apron, no loose cloths/ hair, safety shoes while performing lathe operations regulations while performing CNC turning operations.	0.5	2		
	AO3. Ensure work area is clean and safe	0.5	2		
	AO4. Ensure that machine safety guards are in place and are in correctly working condition.	0.5	2		
	AO5. Ensure that all tools, equipment are in safe and usable conditions.	0.5	2		
	AO6. Ensure availability of job specification i.e. approved drawings, sketches, instructions from the supervisor, job instruction sheet/ job card.	1	2		
	AO7. Read and understand the Job requirements from the job specifications and attention shall be given to the geometric tolerances.	1	5		
	AO8. Check the work piece material for the dimensions and ensure that it is free from foreign objects, dirt or other contamination and is within the required size.	1	5		
	AO9. Plan to perform the turning or other lathe operations and the sequence of operations as per required job specifications.	1	5		
	AO10. Obtain all the appropriate tools and measuring instruments/ gauges required for the job.	1	5		
	AO11. Check the lathe machine for its functioning and ensure that it is ready for operation.	1	4		
	AO12. Prepare the lathe machine for the operations by mounting and setting the required work holding devices and cutting tools.	1	3		
	AO13. Clarify any doubt, if any and see necessary instruction /training on the operation of the machine whenever required.	1	4		
	AO14. Hold the work piece securely and correctly, without distortion.	1	4		
	AO15. Adjust the machine settings as per job requirement to maintain desired accuracy.	1	4		
	AO16. Adjust and set the speed and feed of the lathe machine to achieve the job specifications.	1	4		
	AO17. Operate the machine tool controls safely and correctly, in line with operational procedures both in manual and power modes.	1	4		
	AO18. Stop the lathe machine, both in normal and emergency situations correctly by following the right procedure and should be able to restart the machine after and emergency	1	3		
	AO19. Should be able to use the lathe machine accessories and attachments such as steady and follower rests, tail stock, taper turning attachments, profile attachments etc.	1	3		

	AO20. Perform various lathe operations using different tools to produce components with various features.	1	4		
	AO21. Produce components as per required quality standards and free from burrs & sharp edges	1	4		
	AO22. Shall achieve given production targets.	1	4		
	AO23. Shall be able to apply roughing and finishing cuts, considering the effect on tool life, surface finish and dimensional accuracy.	1	4		
	AO24. Shall be able to use coolants/ cutting fluids for different combinations of work piece and tool as per different locations.	1	4		
	AO25. Shall be able to observe and report any difficulties/ discrepancies that may arise during the machine operation and carry out the corrective actions as per instructions.	1	3		
	AO26. Correctly shutting down the machine on completion of the machining operations, removing and disposing of the chips/ waste and critical parameters different locations.	0.5	2		
	AO27. Use of measuring instruments/ gauges to check the critical parameters.	1	4		
	AO28. Shall be able to carry out the corrective action, in the case of deviation from the required specifications.	1	2		
	AO29. Report the problem to the supervisor, if it cannot be resolved.	0.5	1		
	AO30. Seek guidance from the supervisor/ specialist of the problem is outside his/her area of competence.	0.5	1		
	Sub total	**26**	**98**		
CPC/ N 7012: Perform turning and other lathe operations on metal or plastic work pieces using Computer Numerically Controlled Lathe Machine	AO1. Understand and comply with safety, environmental & other relevant regulations and guidelines.	0.5	4		
	AO2. Wear personal protective equipment (PPE) like safety glasses, apron, no loose cloths/ hair, safety shoes while performing lathe operations while performing CNC turning operations.	0.5	4		
	AO3. Ensure work area is clean and safe.	0.5	4		
	AO4. Ensure that machine safety guards are in place and are in correctly working condition.	0.5	4		
	AO5. Ensure that all tools, equipment are in safe and usable conditions.	0.5	3		
	AO6. Ensure availability of job specification i.e. approved drawings, sketches, instructions from the supervisor, job instruction sheet/ job card.	0.5	4		
	AO7. Read and understand the Job requirements from the job specifications and attention shall be given to the geometric tolerances.	0.5	4		
	AO8. Check the work piece material for the dimensions and ensure that it is free from foreign objects, dirt or other contamination and is within the required size.	0.5	4		
	AO9. Plan to perform the turning or other lathe operations and the sequence of operations as per required job specifications on CNC lathe machine.	0.5	4		
	AO10. Obtain all the appropriate tools and measuring instruments/ gauges required for the job.	0.5	3		
	AO11. Check the CNC lathe machine for its functioning and ensure that it is ready for operation	0.5	3		

	AO12. Prepare the CNC lathe machine for the operations by mounting and setting the required work holding devices and cutting tools	0.5	3		
	AO13. Clarify any doubt, if any and see necessary instruction /training on the operation of the CNC Lathe machine whenever required	0.5	3		
	AO14. Hold the work piece securely and correctly, without distortion	0.5	3		
	AO15. Adjust the CNC Lathe machine settings as per job requirement to maintain desired accuracy	0.5	3		
	AO16. Perform daily maintenance of machine according to defined checklist, at the beginning of day's shifts.	0.5	3		
	AO17. Use and extract information from engineering drawings, dimensioning and tolerances	0.5	3		
	AO18. Use and extract information from reference charts, tables, graphs and Engineering standards	0.5	3		
	AO19. Load and unload component(s) using pre-determined fixtures or work holding devices as per work instructions	1	4		
	AO20. Make basic program and check correctness of program through dry run and single block check	1	4		
	AO21. Adjust and set the speed and feed of the CNC lathe machine to achieve the job specifications	0.5	3		
	AO22. Operate the machine tool controls safely and correctly, in line with operational procedures.	1	4		
	AO23. Stop the CNC lathe machine, both in normal and emergency situations correctly by following the right procedure and should be able to restart the machine after the emergency.	1	2		
	AO24. Do first part cutting trial by setting tool offsets to get oversize part.	1	3		
	AO25. Measure the critical parameters of the machined component on the machine (without removing from the machine).	1	3		
	AO26. Correct the offsets based on the measurements by accessing program edit facility in order to enter tooling data.	1	3		
	AO27. Measure the component after unloading to check for accuracy in the critical parameters as per job specifications.	1	3		
	AO28. Produce machined components that combine different turning operations and have a range of features.	1	3		
	AO29. Follow the specified machining sequence and procedure as per job specifications.	1	3		
	AO30. Interpret in-built machine alarms & respond to same as per operating manual or specified instructions.	0.5	3		
	AO31. Observe for inconsistency in dimensions due to tool wear and correct the offsets accordingly.	1	3		
	AO32. Ensure that machine settings are adjusted as and when required, either by self or the setter, to maintain the required accuracy.	0.5	3		
	AO33. Identify when tools need replacement and replace worn tool with new tool.	1	3		

	AO34. Produce components as per required standards.	0.5	3		
	AO35. Report problems and seek appropriate assistance in a timely manner	0.5	3		
	AO36. Complete documentation during and post operations as per organizational procedures and applicable quality management system.	0.5	3		
	AO37. Return the machine and all tools and equipment to the correct location on completion of activities.	0.5	3		
	AO38. Leave the work area in a safe and tidy condition on completion of job activities as per 5S practices.	0.5	3		
	AO39. Report the problem to the supervisor, if it cannot be resolved.	0.5	2		
	AO40. Seek guidance from the supervisor/ specialist of the problem is outside his/her area of competence.	0.5	2		
	Sub total	**26**	**128**		
CPC/ N 0411 Maintain healthy and safe work practices	AO1. Wear protective clothing/equipment for specific tasks and work conditions	0.5	2		
	AO2. Carry out safe working practices while dealing with hazards to ensure the safety of self and others.	0.5	2		
	AO3. Apply good housekeeping practices at all times	0.5	2		
	AO4. Use the various appropriate fire extinguishers on different types of fires correctly	0.5	2		
	AO5. Demonstrate rescue techniques applied during fire hazard, demonstrate good housekeeping in order to prevent fire hazards, demonstrate the correct use of a fire extinguisher.	0.5	2		
	AO6. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise, and Identify areas in the plant which are potentially hazardous/unhygienic in nature. Conduct regular checks with support of the maintenance team on machine health to identify potential hazards due to wear and tear of machine.	0.5	2		
	AO7. Inform the concerned authorities on the potential risks identified in the processes, workplace area/ layout, materials used etc, Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations.	0.25	2		
	AO8. Create awareness amongst others by sharing information on the identified risks.	0.25	2		
	AO9. Follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and un- necessary items are not cluttering the workbenches or work surfaces.	0.5	2		
	AO10. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions	0.5	1		
	AO11. Follow the technique of waste disposal and waste storage in the proper bins as per SOP	0.5	1		
	AO12. Segregate the items which are labeled as red tag items for the process area and keep them in the correct places	0.5	1		
	AO13. Sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions	0.5	1		
	AO14. Ensure that areas of material storage areas are not overflowing	0.5	1		
	AO15. Properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required	0.5	1		
	AO16. Return the extra material and tools to the designated sections and make sure that no additional	0.5	1		

	material/ tool is lying near the work area				
	AO17. Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards.	0.5	1		
	AO18. Follow the proper labelling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists	0.5	1		
	AO19. Check that the items in the respective areas have been identified as broken or damaged	0.5	1		
	AO20. Follow the given instructions and check for leveling of fluids, oils, lubricants, solvents, chemicals etc. and proper storage of the same To avoid spillage, leakage, fire etc.	0.5	1		
	AO21. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions.	0.5	1		
	Sub total	10	30		
CPC/ N 7014 Effective working with others	AO1. Display appropriate communication etiquette while working.	1	1		
	AO2. Display active listening skills while interacting with others at work.	1	1		
	AO3. Demonstrate responsible and disciplined behaviors at the workplace.	1	1		
	AO4. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required.	1	1		
	AO5. Accurately pass on information to authorized persons who require it and within agreed timescale & confirm its receipt.	1	1		
	AO6. Display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible.	2	2		
	AO7. Consult with & assist others to maximize effectiveness and efficiency in carrying out tasks.	2	2		
	AO8. Escalate grievances and problems to appropriate authority as per procedure to resolve them & avoid conflict.	1	1		
	Sub total	**10**	**10**		
CPC/ N 0219 Basics of computer and data entry in MS OFFICE/office Open source suite Software	AO1. Fill and process mandated forms for receiving, processing, or tracking data enter data from source documents (such as trial report, process sheet etc.) into Computer applications having MS Office / Open Source office suite software.	1	2		
	AO2. Scan source documents in accordance with specific instructions.	1	2		
	AO3. verify data entered with source documents, checks for compliance and corrects all typographical errors and missing or repeated data.	1	2		
	AO4. Maintain files of source documents or other information related to data entered.	1	2		
	AO5. Investigate and confirm data that is unclear before entering, generate reports of data entry, store completed work in designated locations and perform backup operations.	1	2		
	AO6. update database information to reflect most current source information	1	1		
	AO7. assist in the filing and storage of security and back up data files	1	2		
	AO8. respond to requests for information and access relevant files	1	1		
	Sub total	**8**	**14**		
CPC/ N0418 Basic	AO1. Accurately receive information and instructions from the supervisor/operator and fellow	1	1		

knowledge of communication/ Soft Skills	workers, getting clarification where required.				
	AO2. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt.	1	1		
	AO3. Display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible.	1	1		
	AO4. Basic Knowledge of consult with and assist others to maximize effectiveness and efficiency in carrying out tasks.	1	1		
	AO5. Basic Study of Fundamental of Computers.	1	1		
	AO6. Components of Computer: - Hardware and the software.	1	1		
	AO7. Display active listening skills while interacting with others at work.	1	1		
	AO8. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism	1	1		
	AO9. Demonstrate responsible and disciplined behaviors at the workplace	1	1		
	AO10. Escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict	**1**	**1**		
	Sub total	**10**	**10**		
DGT/VSQ/N0101 Employability Skills	AO1. Discuss the importance of Employability Skills in meeting the job requirements.	1	1		
	AO2. Use appropriate basic English sentences/phrases while speaking, Demonstrate how to communicate in a well -mannered way with others & working with others in a team.	1	1		
	AO3. Discuss the significance of using financial products and services safely and securely. Explain the importance of managing expenses, income, and savings & Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws.	2	2		
	AO4. Discuss the significance of using the internet for browsing, accessing social media platforms, safely and securely.	1	1		
	AO5. Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges.	2	2		
	AO6. Differentiate between types of customers & Explain the significance of identifying customer needs and addressing them.	2	2		
	AO7. Create biodata, use various sources to search and apply for jobs & Discuss the significance of dressing up neatly and maintaining hygiene for an interview.	1	1		
	Sub total	**10**	**10**		
	Total	**100**	**300**		

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

Mention the detailed assessment strategy in the provided template.

1. Assessment System Overview:
   - Batches are assigned to Training Assessment Wing (TAW), CIPET HO for planning of assessment
   - Training Centers request TAW for Assessment and Certification of Trainees
   - TAW identifies suitable assessor and nominates the assessor to the respective Training Centre
   - TAW monitors the assessment process
   - Training Centers maintain necessary records
2. Testing Environment:
   - Check the Assessment location, date and time
   - If the batch size is more than 30, then there should be 2 Assessors or 1 Assessor for 2 days.
   - Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
3. Assessment Quality Assurance levels/Framework:
   - Question bank is created by the Subject Matter Experts (SME) are verified by the other SME
   - Questions are mapped to the specified assessment criteria
   - Assessor must be ToA certified & trainer must be ToT Certified
4. Types of evidence or evidence-gathering protocol:
   - Time-stamped & geotagged reporting of the assessor from assessment location
   - Centre photographs with signboards and scheme specific branding
5. Method of verification or validation:
   - Surprise visit to the assessment location
6. Method for assessment documentation, archiving, and access
   - Hard copies of the documents are stored

On the Job:

1. Each module (which covers the job profile of Automotive Service Assistant Technician) will be assessed separately.
2. The candidate must score 60% in each module to successfully complete the OJT.
3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively:
   • Videos of Trainees during OJT
4. Assessment of each Module will ensure that the candidate is able to:

- Effective engagement with the customers
- Understand the working of various tools and equipment

Annexure: Acronym and Glossary

Acronym

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

Glossary

Term	Description
National Occupational Standards (NOS)	NOS defines 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