Model Curriculum

QP Name: Automotive Machining Lead Technician

QP Code: ASC/Q3505

NSQF Level: 4.5

Automotive Skills Development Council
E-113, GF Floor, Okhla Industrial Area, Phase – III ,New Delhi – 110020

Table of Contents

Training Parameters

Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Machining Operation
Country	India
NSQF Level	4.5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7223.0502
Minimum Educational Qualification and Experience	10th Class pass with 3 years of relevant experience OR Completed 3 years Diploma (after class 10th) OR Completed 2 years Diploma (after class 12th) OR Pursuing 1st year of B.E/B.Tech and continuous education OR Certificate-NSQF (Automotive CNC Machining Technician Level 3.5) with 3 Years of Experience with minimum education as 8th class pass
Pre-Requisite License or Training	
Minimum Job Entry Age	20 years
Last Reviewed On	29/07/2021
Next Review Date	29/07/2026
NSQC Approval Date	29/07/2021
Model Curriculum Creation Date	29/07/2021
Model Curriculum Valid Up to Date	29/07/2026
Minimum Duration of the Course	510 Hours 00 Minutes
Maximum Duration of the Course	510 Hours 00 Minutes

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Provide support to the technicians and operators in performing machining and post-machining operations.
- Prepare shift plans, manage operational productivity and measure employee performance in the Shift/ Line on a day to day basis.
- Employ appropriate techniques to implement process improvement techniques on the shop floor.
- Work effectively and efficiently as per schedules and timelines.
- Implement safety practices.
- Use resources optimally to ensure less wastage and maximum conservation.
- Communicate effectively and develop interpersonal skills.

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Bridge Module	05:00	0:00			05:00
Module 1: Introduction to the role of an Automotive Machining Lead Technician	05:00	0:00			05:00
ASC/N9810: Manage work and resources (Manufacturing) **NOS Version No. – 1.0** **NSQF Level – 4.5**	**15:00**	**40:00**			**55:00**
Module 2: Manage work and resources according to safety and conservation standards	15:00	40:00			55:00
ASC/N9805 – Interpret engineering drawing **NOS Version No. – 1.0** **NSQF Level – 4.5**	**35:00**	**55:00**			**90:00**

Module 3: Interpret engineering drawing	35:00	55:00			90:00
ASC/N3540 – Manage shop floor Machining operations and team NOS Version No. – 1.0 NSQF Level – 4.5	**65:00**	**85:00**			**150:00**
Module 4: Manage shop floor Machining operations and team	65:00	85:00			150:00
ASC/N3510 – Perform machining and post-machining operations NOS Version No. – 2.0 NSQF Level –4.5	**40:00**	**80:00**	**30:00**		**150:00**
Module 5: Perform welding and post-welding activities	40:00	80:00	30:00		150:00
DGT/VSQ/N0102 - Employability Skills (60 hours) NOS Version No. – 1.0 NSQF Level – 4.5	**24:00**	**36:00**			**60:00**
Module 6: Introduction to Employability Skills	0.5:00	1:00			1.5:00
Module 7: Constitutional values - Citizenship	0.5:00	1:00			1.5:00
Module 8: Becoming a Professional in the 21st Century	1:00	1.5:00			2.5:00
Module 9: Basic English Skills	4:00	6:00			10:00
Module 10: Career Development & Goal Setting	1:00	1:00			2:00
Module 11: Communication Skills	2:00	3:00			5:00
Module 12: Diversity & Inclusion	1:00	1.5:00			2.5:00
Module 13: Financial and Legal Literacy	2:00	3:00			5:00
Module 14: Essential Digital Skills	4:00	6:00			10:00
Module 15: Entrepreneurship	3:00	4:00			7:00
Module 16: Customer Service	2:00	3:00			5:00
Module 17: Getting ready for apprenticeship & Jobs	3:00	5:00			8:00
Total Duration	**184:00**	**296:00**	**30:00**		**510:00**

Module Details

Module 1: Introduction to the role of an Automotive Machining Lead Technician

Bridge module

Terminal Outcomes:

- Discuss the role and responsibilities of an Automotive Machining Lead Technician.

Duration: *<05:00>*	**Duration**: *<00:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the role and responsibilities of an Automotive Machining Lead Technician. • Discuss the job opportunities for an Automotive Machining Lead Technician in the automobile industry. • Explain about Indian automotive manufacturing market. • List various automobile Original Equipment Manufacturers (OEMs) and different products/ models manufactured by them. • Discuss manufacturing standards, procedures, quality norms and standards, etc. followed in the industry. • List different types of products manufactured by the company. • Discuss various functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution etc. followed in an organisation.	
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 2: Manage work and resources according to safety and conservation standards

Mapped to ASC/N9810, v1.0

Terminal Outcomes:

- Employ appropriate ways to maintain safe and secure working environment
- Apply material and energy conservation practices at the workplace.

Duration: *<15:00>*	**Duration**: *<40:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss organisational procedures for health, safety and security and individual role and responsibilities related to the same. • List the potential workplace related risks, threats and hazards, their causes and preventions. • List personal protective equipment like safety gloves, glasses, shoes and mask used at the workplace. • List various types of fire extinguisher. • Identify various safety boards/ signs placed on the shop floor. • Explain 5S standards, procedures and policies followed at workplace. • Discuss organisational procedures to deal with emergencies and accidents at the workplace and importance of following them. • State the importance of conducting safety drills or training sessions. • Explain the process of filling daily check sheet for reporting to the concerned authorities about improvements done and risks identified. • Discuss how and when to report about potential hazards identified in the workplace and limits of responsibility for dealing with them. • Outline the importance of keeping workplace, equipment, restrooms etc. clean and sanitised. • Explain the importance of following hygiene and sanitation regulations developed by organisation at the workplace. • Discuss the importance of maintaining the availability of running water, hand wash and alcohol-based sanitizers at the	• Apply appropriate ways to implement safety practices to ensure safety of people at the workplace. • Display the correct way of wearing and disposing PPE. • Demonstrate the use of fire extinguisher. • Demonstrate how to provide first aid procedure in case of emergencies. • Demonstrate how to evacuate the workplace in case of an emergency. • Employ various techniques for checking malfunctions in the machines with the support of maintenance team and as per Standard Operating Procedures (SOP). • Demonstrate to arrange tools/ equipment/ fasteners/ spare parts into proper trays, cabinets, lockers as mentioned in the 5S guidelines/work instructions. • Apply appropriate ways to organise safety drills or training sessions for others on the identified risks and safety practices. • Prepare a report about the health, safety and security breaches. • Apply appropriate ways to check that workplace, equipment, restrooms etc. are cleaned and sanitised. • Role play a situation to brief the team about the hygiene and sanitation regulations developed by organisation. • Demonstrate the correct way of washing hands using soap and water and alcohol-based hand rubs. • Apply appropriate methods to support the employees to cope with stress, anxiety etc. • Demonstrate proper waste collection and disposal mechanism depending upon types of waste.

workplace. • Discuss the significance of conforming to basic hygiene practices such as washing hands, using alcohol based hand sanitizers or soap. • Recall ways of reporting advanced hygiene and sanitation issues to the concerned authorities. • Elucidate various stress and anxiety management techniques. • Discuss the significance of greening. • Classify different categories of waste for the purpose of segregation. • Differentiate between recyclable and non-recyclable waste. • Discuss various methods of waste collection and disposal. • List the various materials used at the workplace. • Explain organisational recommended norms for storage of tools, equipment and material. • Discuss the importance of efficient utilisation of material and water. • Explain basics of electricity and prevalent energy efficient devices. • Explain the processes to optimize usage of material and energy/electricity. • Enlist common practices for conserving electricity at workplace.	• Perform the steps involved in storage of tools, equipment and material after completion of work. • Employ appropriate ways to resolve malfunctioning (fumes/ sparks/ emission/ vibration/ noise) and lapse in maintenance of equipment as per requirements. • Perform the steps to prepare a sample material and energy audit reports. • Employ practices for efficient utilization of material and energy/electricity.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Housekeeping material: Cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel, fire extinguisher • Safety gears: Safety shoes, ear plug, goggles, gloves, helmet, first-aid kit	

Module 3: Interpret engineering drawing

Mapped to ASC/N9805, v1.0

Terminal Outcomes:

- Describe the basics of engineering drawing.
- Interpret the machine drawings and symbols for understanding the job requirements.

Duration: *<35:00>*	**Duration:** *<55:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Identify uniqueness, dimensioning and important features of 2D and 3D shapes. • Identify types of lines, angles, points and their symmetry in shapes. • Differentiate between first angle and third angle projection. • Interpret 3 axis (x, y and z axis) of projection and machine symbols used in drawing. • Describe GD&T and use of its symbols in the drawings. • Identify required limits and tolerances of component from drawing. • Explain standards used in India for making assembly drawings. • Identify organisational drawing standards for interpreting the work requirements appropriately.	• Read an object in first angle and third angle projection. • Demonstrate appropriate way of reading and interpreting the shapes (cones, cylinder, sphere, cuboid, etc) on to a 2D and 3D projection. • Interpret and read orthographic and isometric views. • Read GD&T symbols in the given drawing. • Employ appropriate ways of storing the drawings in a defined and appropriate place. • Role play a situation on how to communicate the changes in drawing to the concerned authority.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Drawing tools • Engineering drawing handbook • Sample engineering drawings	

Module 4: Manage shop floor Machining operations and team

Mapped to ASC/N3540, v1.0

Terminal Outcomes:

- Demonstrate ways to implement process improvement techniques.
- Prepare sample shift rosters and production MIS reports.
- Demonstrate ways to implement team improvement practices.

Duration: *<65:00>*	**Duration**: *<85:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Elucidate procedure of planning manpower shift and preparing shift rosters on day to day basis as per the organisational norms and guidelines. • Discuss ways to reduce production losses and wastages in the production and increase minimum rejection of components during shift operation. • List improvement areas in the production line and corrective measures for following the identified gaps. • Explain process improvement techniques, Kaizens, TQM, Poka Yoke etc. and their impact on the production line to rectify the failure and gaps in the production process. • Discuss ways to execute the preventive maintenance schedule for the shop/ line on time. • Elaborate ways to analyse the various data sheets and reports related to production, maintenance, manpower deployment etc. to support the In charge/ Engineer/ Shop Head. • Elaborate ways to analyse improvement areas in the production line and identify corrective measures for the identified gaps. • List ways for analysing breakdown trends and maintenance process and areas of improvement in it. • Discuss corrective measures for reducing the breakdown and improving the maintenance process. • Elucidate use of ERP system for maintaining and updating production line data. • Discuss the documents and reports needed to be maintained and prepared	• Prepare a sample plan for allocating manpower shifts based on the skills matrix. • Prepare sample weekly or monthly shift rosters based on the production plan to support the Shift In Charge/ Process head/ Shop head. • Apply appropriate ways for maintaining the information of leaves, IN-Out time and shift/ line overtime for the operators and helpers and sharing it with the concerned authorities. • Apply organisational specified procedures to send inventory requirements to the stores and purchase department. • Role play a situation on how to follow up with the stores and purchase department for timely receipt of material. • Employ appropriate ways to maintain the movement and availability of required material, tools and equipment on shop floor within specified TAKT. • Demonstrate ways for using the resources and streamlining the activities effectively on shop floor. • Role play a situation to communicate required information to other departments and resolving production related queries to achieve required production target and quality standards. • Apply appropriate ways to implement ways to reduce losses and wastages and increase minimum rejection of components during shift operation. • Create a sample MIS report of daily and monthly production to match the production and target achieved. • Draft a sample report on daily and monthly production to match the

related to production process. • Discuss the importance and ways of involving employees in various engagement and development activities such as trainings, meets, brainstorming sessions, safety drills etc. organised in the plant. • List different types of information such as production targets, new guidelines, new processes etc. to be shared with team. • Discuss the importance of organising training sessions and making the team aware of the new processes, inputs and outputs. • Discuss organizational structure to be followed to escalate and resolve issues related to team's personal grievances/ complaints etc. • List ways of handling grievances and problems in an organisation.	production and target achieved for the production Incharge. • Apply appropriate ways to verify the correctness of production and material movement related data entries in the system (manual/ ERP) for the line/ shift. • Prepare a sample preventive maintenance schedule for the shop/ line. • Show how to audit production process for capability of each operation. • Create a sample report on the non-compliances for the regulatory authorities. • Role play on how to implement Kaizens, TQM, Poka Yoke etc. in the production line. • Perform steps to monitor and review the effectiveness of process improvement techniques and corrective actions on production. • Prepare a sample report on effectiveness of process improvement techniques and corrective actions on production for the regulatory authorities. • Role play a situation on how to encourage team members for suggesting process improvement measures and their implementation process. • Role play a situation on how to conduct daily floor meeting/ morning meetings/ staff meetings and share information to team. • Show how to organise training sessions for team to enhance their skills and knowledge. • Demonstrate organisational specified procedure to escalate and resolve team problems/ work grievances/ complaints etc. • Role play a situation on how to counsel employees for any work related issues or any personal problems.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Basic tool box, Work bench with vice • Sampling tools, sample rejection data • Case studies, shift planning document or software	

Module 5: Perform machining and post-machining activities

Mapped to ASC/N3510, v2.0

Terminal Outcomes:

- Identify tools and equipment required for machining operations.
- Perform the steps to carry out pre-machining activities such as preparing plan, inspection of tools and equipment, selection of workpiece etc.
- Demonstrate various types of machining processes such as drilling, boring, turning etc.
- Perform the steps to carry out post-machining activities.

Duration: *<40:00>*	**Duration**: *<80:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss fundamentals of the CNC/conventional machine. • Explain various types of machining processes such as drilling, boring, turning etc. • Discuss how to take inputs from the master machining technician for production planning. • List tools, measuring instruments, equipment, jigs, fixtures and input material required during machining work. • Summarise the steps to be performed for checking the availability and functioning of input material, tools and equipment required. • Discuss the importance of selecting correct program in the CNC machine for machining operation as per the work instructions. • Summarise the steps to be performed for mounting, positioning and aligning of the tools, attachments, fixtures etc. on the machine as per the requirements. • Discuss the importance of maintaining machining parameters like cutting speed, depth of cut, feed rate etc. as per the Work Instructions (WI) and their impact on quality and quantity of output product. • Discuss the importance of supervising the machining operations and mass production process of components. • Discuss the do's and don'ts of the manufacturing process as per SOPs/ work instructions. • Discuss the importance of monitoring process parameters during the machining and correcting them as per the	• Perform the steps to prepare plan and schedule for machining activities to meet the production target. • Role play a situation on how to give instructions to the machining operators and technicians about the processes need to perform for achieving the production target. • Apply appropriate ways to check the availability of input material, tools and equipment required. • Demonstrate the standard operating procedure to use jigs, fixtures, tools, equipment and measuring instruments required during job. • Read the control plan/check sheet to check the quality of input material. • Show how to program the CNC machine with required process parameters, requirements and modify it as per the production requirements and WI. • Perform steps to conduct the dry run of program and modify it as per the requirements and SOPs/Work Instructions. • Perform steps to check that CNC machine and all tools, attachments, fixtures etc. are mounted, positioned and aligned properly as per the work instructions. • Show how to set the machining parameters and position cutting tool and work piece as per the work instructions. • Demonstrate how to machine the first component and inspect it against the required specifications. • Demonstrate organizational specified procedure of all machining processes such as drilling, boring, turning etc.

requirements. • List the steps to be performed for observing and recording machine performance. • Discuss post machining processes like inspection, cleaning, maintenance etc. • List the steps to be performed for random sampling and quality check of finished products and reporting to the concerned person or authority. • Discuss various inspection methods and testing techniques like visual inspection, destructive and non-destructive tests. • Discuss the process of segregating, tagging and storing of damaged and ok workpieces as per organisational guidelines. • List machine maintenance and repairing activities needed to be done after completion of work. • Discuss the documents and records needed to be prepared and maintained related to machining and maintenance activities done. • Discuss the necessary precautions to be taken to avoid any hazard and accident during machining activities.	• Show how to check the quality of output and fill the run chart. • Demonstrate how to correct the tool settings to meet the required quality output. • Perform steps to run the machine for mass production after first machined component meets the specified requirements. • Apply appropriate ways to manage any irregularities e.g. power failure, rejection, tool breakage etc. during production. • Employ appropriate ways for checking the machine operations for any defects in the component. • Role play a situation to communicate the defects in the machine and its components to supervisor/ maintenance team for correction. • Read the measurement gauges to monitor the process parameters and maintain the quality standards. • Prepare a sample record of data related to the loss time in case of machine stops and breakdown. • Drat a sample report for the supervisors and maintenance team on loss time in case of machine stops and breakdown. • Prepare a sample record of tool offsetting and key dimensions on control charts/SPC. • Demonstrate steps to be performed for random sampling and quality inspection of finished products and reporting to the concerned person or authority for corrective action. • Demonstrate how to check that machined pieces are segregated, tagged and stored as per organisational guidelines. • Show how to conduct minor maintenance and repairing activities of machine and its components. • Apply ways to check the functioning of machine after maintenance activities.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Basic tool box, Work bench with vice • Machining tools/ equipment: Surface marking plate, cutting tools, threading, dies & guides, etc. • Machines: Conventional lathe and vertical milling machine with standard accessories and Production CNC machining center with ATC	

- Measuring equipment: Vernier calipers, micrometre, feeler gauges, bore gauge, slip gauge, thickness gauge, steel ruler, measuring tape, height, gauge, dial gauge, angle plate, set square compass etc.
- Consumables: Oil stones, Emery, Dressing stone, File cord, Tool post packing, Spares for cutting tools, Carbide inserts, Grinding Wheels etc.
- Hand book, job orders, work order, completion material requests, and Technical Reference Books.
- Sample of Rejected parts for defects like dent, scratch, damage and burrs.
- Safety materials: Fire extinguisher, helmet, leather safety gloves, leather aprons, safety glasses with side shields, ear plug, safety shoes and first-aid kit
- Cleaning material: Tip cleaner, wire brush (M.S.), cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel

Module 6: Introduction to Employability Skills

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Discuss about Employability Skills in meeting the job requirements

Duration: *<0.5:00>*	**Duration**: *<1:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the importance of Employability Skills in meeting the job requirements	• List different learning and employability related GOI and private portals and their usage
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 7: Constitutional values - Citizenship

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Discuss about constitutional values to be followed to become a responsible citizen

Duration: *<0.5:00>*	**Duration**: *<1:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen.	• Show how to practice different environmentally sustainable practices
Classroom Aids:	
Whiteboard, marker pen, projector	

Tools, Equipment and Other Requirements

Module 8: Becoming a Professional in the 21st Century

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Demonstrate professional skills required in 21st century

Duration: *<1:00>*	**Duration**: *<1.5:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss 21st century skills. • Describe the benefits of continuous learning	• Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 9: Basic English Skills

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Practice basic English speaking.

Duration: *<4:00>*	**Duration**: *<6:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe basic communication skills • Discuss ways to read and interpret text written in basic English	• Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone • Read and interpret text written in basic

	English • Write a short note/paragraph / letter/e -mail using basic English
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 10: Career Development & Goal Setting

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Demonstrate Career Development & Goal Setting skills.

Duration: *<1:00>*	**Duration**: *<1:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss need of career development plan	• Demonstrate how to communicate in a well -mannered way with others. • Create a career development plan with well-defined short- and long-term goals
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 11: Communication Skills

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Practice basic communication skills.

Duration: *<2:00>*	**Duration**: *<3:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance of active listening for effective communication • Discuss the significance of working collaboratively with others in a team	• Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 12: Diversity & Inclusion

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Describe PwD and gender sensitisation.

Duration: *<1:00>*	**Duration**: *<1.5:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the significance of reporting sexual harassment issues in time	• Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 13: Financial and Legal Literacy

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Describe ways of managing expenses, income, and savings.

Duration: *<2:00>*	**Duration**: *<3:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the common components of salary and compute income, expenditure, taxes, investments etc. • Discuss the legal rights, laws, and aids	• Outline the importance of selecting the right financial institution, product, and service • Demonstrate how to carry out offline and online financial transactions, safely and securely
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 14: Essential Digital Skills

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Demonstrate procedure of operating digital devices and associated applications safely.

Duration: *<4:00>*	**Duration**: *<6:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the role of digital technology in today's life • Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely	• Show how to operate digital devices and use the associated applications and features, safely and securely • Create sample word documents, excel sheets and presentations using basic features • Utilize virtual collaboration tools to work effectively
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 15: Entrepreneurship

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Describe opportunities as an entrepreneur.

Duration: *<3:00>*	**Duration**: *<4:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the types of entrepreneurship and enterprises • Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its	• Create a sample business plan, for the selected business opportunity

mitigation plan • Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement	
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 16: Customer Service

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Describe ways of maintaining customer.

Duration: *<2:00>*	**Duration**: *<3:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the significance of identifying customer needs and addressing them. • Explain the significance of identifying customer needs and responding to them in a professional manner. • Discuss the significance of maintaining hygiene and dressing appropriately.	• Demonstrate how to maintain hygiene and dressing appropriately.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 17: Getting ready for apprenticeship & Jobs

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Describe ways of preparing for apprenticeship & Jobs appropriately.

Duration: *<3:00>*	**Duration**: *<5:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the significance of maintaining hygiene and confidence during an interview • List the steps for searching and registering for apprenticeship opportunities	• Create a professional Curriculum Vitae (CV) • Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively • Perform a mock interview
Classroom Aids:	
Whiteboard, marker pen, projector	

Tools, Equipment and Other Requirements

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
M.E/M.Tech	Mechanical/Automobile	3	Machining	1	Machining	NA
B.E/B.Tech	Mechanical/Automobile	5	Machining	1	Machining	NA
AMIE	Mechanical/Automobile	5	Machining	1	Machining	NA
Diploma	Mechanical/Automobile	7	Machining	1	Machining	NA
ITI	Machinist/Turner	8	Machining	1	Machining	NA

Trainer Certification	
Domain Certification	**Platform Certification**
"Automotive Machining Lead Technician, ASC/Q3505, version 2.0". Minimum accepted score is 80%.	Recommended that the trainer is certified for the job role "Trainer (VET and Skills)", Mapped to Qualification Pack: MEP/Q2601, V2.0" Minimum accepted score is 80%

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
M.E/M.Tech	Mechanical/Automobile	4	Machining	1	Machining	NA
B.E/B.Tech	Mechanical/Automobile	6	Machining	1	Machining	NA
AMIE	Mechanical/Automobile	6	Machining	1	Machining	NA
Diploma	Mechanical/Automobile	8	Machining	1	Machining	NA
ITI	Machinist/Turner	9	Machining	1	Machining	NA

Assessor Certification	
Domain Certification	**Platform Certification**
"Automotive Machining Lead Technician, ASC/Q3505, version 2.0". Minimum accepted score is 80%.	Recommended that the Accessor is certified for the job role "Assessor (VET and Skills)", Mapped to Qualification Pack: MEP/Q2701, V2.0" Minimum accepted score is 80%.

Assessment Strategy

1. Assessment System Overview:
    - Batches assigned to the assessment agencies for conducting the assessment on SDMS/SIP or email
    - Assessment agencies send the assessment confirmation to VTP/TC looping SSC
    - Assessment agency deploys the ToA certified Assessor for executing the assessment
    - SSC monitors the assessment process & records

2. Testing Environment:
    - Confirm that the centre is available at the same address as mentioned on SDMS or SIP
    - Check the duration of the training.
    - Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
    - If the batch size is more than 30, then there should be 2 Assessors.
    - Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
    - Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
    - Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
    - Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:
    - Question papers created by the Subject Matter Experts (SME)
    - Question papers created by the SME verified by the other subject Matter Experts
    - Questions are mapped with NOS and PC
    - Question papers are prepared considering that level 1 to 3 are for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
    - Assessor must be ToA certified & trainer must be ToT Certified
    - Assessment agency must follow the assessment guidelines to conduct the assessment

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
    - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
    - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:
    - Surprise visit to the assessment location
    - Random audit of the batch
    - Random audit of any candidate

6. Method for assessment documentation, archiving, and access
    - Hard copies of the documents are stored
    - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage

- Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
SOP	Standard Operating Procedure
WI	Work Instructions
PPE	Personal Protective equipment