Model Curriculum

QP Name: Automotive Prototype Manufacturing Lead Technician

QP Code: ASC/Q6501

NSQF Level: 4.5

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

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Training Parameters

Sector	Automotive
Sub-Sector	Research & Development
Occupation	Automotive Product Development
Country	India
NSQF Level	4.5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7412.0101
Minimum Educational Qualification & 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
Pre-Requisite License or Training	
Minimum Job Entry Age	22 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

After completing this programme, participants will be able to:

- Develop the prototype in coordination with various departments such as R & D, Production, Quality etc.
- Perform the steps involved in procuring new proto parts.
- Communicate with production department for proto manufacturing and quality team for validation of proto.
- Use 3D printing machine for the printing of automotive components.
- 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	On-the-Job Training Duration	Total Duration
Bridge Module	**05:00**	**00:00**			**05:00**
Module 1: Introduction to the role of Automotive Prototype Manufacturing Lead Technician	05:00	00:00			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/N6501 **Develop the prototype for existing product modification** **NOS Version No. 1.0** **NSQF Level 4.5**	**50:00**	**100:00**	-	-	**150:00**
Module 3: Developing the prototype for modification of existing product.	50:00	100:00			150:00
ASC/N6502 **Develop the prototype based on organization future business plan** **NOS Version No. 1.0** **NSQF Level 4.5**	**25:00**	**65:00**	-	-	**90:00**
Module 4: Developing the prototype on the basis of organization future business plan.	25:00	65:00			90:00
ASC/N6511 **Select and operate 3D Printing machine for product generation** **NOS Version No. 1.0** **NSQF Level 4.5**	**50:00**	**70:00**	**30:00**	-	**150:00**
Module 5: Selecting and operating a 3D printing machine.	50:00	70:00	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	**169:00**	**311:00**	**30:00**	-	**510:00**

Module Details

Module 1: Introduction to the role of Automotive Prototype Manufacturing Lead Technician

Bridge module

Terminal Outcomes:

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

Duration: *<05:00>*	**Duration**: *<00:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the role and responsibilities of an Automotive Prototype Manufacturing Lead Technician. • Discuss the job opportunities of an Automotive Prototype Manufacturing Lead Technician. • Explain about Indian automotive manufacturing market. • List various automobile Original Equipment Manufacturers (OEMs) and different products/ models manufactured by them. • Identify the standard checklists and schedules recommended by OEM. • Discuss the need and importance of computerised systems and updated softwares in Automotive manufacturing process.	
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
Checklist	

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 workplace.	• 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. • Perform the steps involved in storage of tools, equipment and material after completion of work.

• 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.	• 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: Developing the prototype for modification of existing product.

Mapped to ASC/N6501, v2.0

Terminal Outcomes:

- Perform design release for proto parts/vehicle in coordination with R & D.
- Prepare In-house or outsource from vendor for different Proto parts.
- Support quality team for validation of Proto.

Duration: *50:00*	**Duration**: *100:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the changes made by R & D team in existing model with in house or vendor sourcing of the required parts. • Discuss with R & D team to sign off the proto after release as per SOP. • Examine modified part whether it is being manufactured in-house or sourced from different vendor • Perform design release of modified part to in house manufacturing unit or to the vendor depending upon from where modified part can be sourced • Discuss with R&D department that parts are getting delivered within timeline. • Discuss with production team for proto manufacturing as per design released by R&D department. • Examine the adequate numbers of proto manufactured by production team. • Discuss the timeline to the testing and validation team for proto testing and validation. • Relate Personnel and other HR policies of the organization.	• Discuss with R&D team for the design release of proto. • Identify changes in product that have been made by R&D in terms of product design, dimension, material strength/composition etc, with respect to existing model. • Discuss the timeline for delivering modified parts with in-house manufacturing unit and vendor • Share the proto vehicle/part after production to the testing validation team • Discuss the verification of the dimensional and material / special characteristics of the modified proto with Materials Lab, QA, standards Room etc. • Manage records to facilitate interpretation of test results later. • Define basics of designing tool like CAD, CAM, PRO -E etc. • Define basics of Information system tools like SAP, ERP, PLM etc.
Classroom Aids:	
Laptop, White board, Marker, Projector & stationary	
Tools, Equipment and Other Requirements	
PCs/Laptops, Internet with Wi-Fi (Min2 Mbps Dedicated) 18 documents of PPAP, Design records, Design Records, Authorized Engineering Change Documents, Customer Engineering Approval, Design Failure Modes and Effects Analysis (DFMEA), applied in special situations, Process Flow Diagram, Process Failure Modes and Effects Analysis (PFMEA) Control Plan, Part Submission Warrant (PSW), Engineering Change Documents Dimensional Results, PLC Simulator, Hydraulic, Pneumatic, Electronic Control Systems Simulator, Internet of Things study material and IOT communication devices, Manufacturing Execution system, manufacturing operation management system.	

Hydraulics and pneumatics systems simulator, PLC Simulator with required software, Air Cylinders, valves, connector/tubing simulators, Pick and place robots assembly Electronics sensor like proximity, optical, magnetic sensors.

Module 4: Developing the prototype on the basis of organization future business plan.

Mapped to ASC/N6502, v2.0

Terminal Outcomes:

- Perform design release for proto parts/vehicle in coordination with R & D for future business plan.
- Perform the steps of selecting and procuring the vendor.
- Support quality team for validation of new Proto.

Duration: *25:00*	**Duration**: *65:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Support in bridging the gap between the design team and product team related to new proto development • Discuss the documentation made by R & D for new product. • Discuss with R & D team to sign off the proto after release as per SOP. • Examine the new part whether it is being manufactured in-house or sourced from different vendor. • Order the new parts according to design release for prototype assembly • Discuss with R&D department that parts are getting delivered within timeline. • Discuss with production team for new proto manufacturing as per design released by R&D department. • Examine the adequate numbers of new proto manufactured by production team. • Discuss the timeline to the testing and validation team for proto testing and validation. • Relate Personnel and other HR policies of the organization. • Describe roles, responsibilities, and scope of work for different departments	• Discuss with R&D for the design release of proto based on customer/market requirement • Analyse the simulation of the complete product for a better explaining of the new proto. • Determine the design from a manufacturing/assembly • Discuss the timeline for delivering modified parts with in-house manufacturing unit and vendor • Share the new proto vehicle/part after production to the testing validation team • Discuss the verification of the dimensional and material / special characteristics of the modified proto with Materials Lab, QA, standards Room etc. • Describe basics of prototyping and testing process • Define basics of designing tool like CAD, CAM, PRO -E etc and simulation software like DFMEA, APQP etc • Define basics of Information system tools like SAP, ERP, PLM etc.
Classroom Aids:	
Laptop, White board, Marker, Projector & stationary	
Tools, Equipment and Other Requirements	
PCs/Laptops, Internet with Wi-Fi (Min2 Mbps Dedicated) 18 documents of PPAP, Design records, Design Records, Authorized Engineering Change Documents, Customer Engineering Approval, Design Failure Modes and Effects Analysis (DFMEA), applied in special situations, Process Flow Diagram, Process Failure Modes and Effects Analysis (PFMEA) Control Plan, Part Submission Warrant (PSW), Engineering Change Documents	

Dimensional Results, PLC Simulator, Hydraulic, Pneumatic, Electronic Control Systems Simulator, Internet of Things study material and IOT communication devices, Manufacturing Execution system, manufacturing operation management system. Hydraulics and pneumatics systems simulator, PLC Simulator with required software, Air Cylinders, valves, connector/tubing simulators, Pick and place robots assembly Electronics sensor like proximity, optical, magnetic sensors.

Module 5: Operate 3D Printing machine for production

Mapped to ASC/N6811, v1.0

Terminal Outcomes:

- Identify raw material, machine, components and automotive parts involved in manufacturing process.
- Perform the steps to operate and set up the machine for printing the automotive components.
- Demonstrate post-processing activities like quality check, segregation, storage etc.

Duration: *50:00*	**Duration**: *70:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss manufacturing and automotive product design standards and procedures followed in the company. • Explain various 3D Printing technologies such as Fused Deposition Modelling, StereoLithography etc. • Identify various symbols and notifications being displayed by the 3D Printing machine. • Describe functionality of the 3D printing machine. • Discuss the importance of preserving critical electronic parts/equipment from moisture/ heat/ environmental external conditions. • List the machine, support structure, raw material etc. required for work. • List types of materials available for fabrication in various 3D printing technique. • Explain the selection criteria of raw material and 3D printing machine as per the product specifications. • Recall various specifications of machine such as build speed, extrusion speed, nozzle temperature etc. • List machine operating parameters such as room temperature range, air cleanliness. • List types of files such as .stl, code file, etc generated in the various steps of the process. • Explain standard tesselation language (.stl) code file and its selection criteria for machine operation. • List the steps to be performed for deleting unwanted code files, uploading new code files and selecting any pre-stored program in the machine memory.	• Demonstrate how to select the raw material and 3D printing machine for printing the automotive components as per product specifications. • Use appropriate resources to obtain information about part orientation, support structure requirement, machine specifications, machine operating parameters etc. as per the work requirement. • Show how to delete unwanted code files, upload new code files and select any pre-stored program in the machine memory. • Demonstrate how to connect the data storage devices with the machine. • Show how to check the number of automotive parts needed to be manufactured. • Role play a situation on how to co-ordinate with the designer for rectifying the errors generated during file uploading and observed during running of process. • Apply appropriate ways to check the critical components of machine. • Demonstrate how to set and clean the 3D printing machine before starting the printing operation by following organisational procedures. • Apply appropriate techniques to decipher the codes to calculate the volume of material • Show how to load appropriate amount of consumables material. • Show how to pre-heat the bed of the machine and set the laser or nozzles temperature of the machine to defined values.

• Summarise the steps to be performed for checking the critical components of machine. • List steps for preparing 3D printing machine for operation. • List the steps to be performed for operating the 3D printing machine. • Describe post-processing techniques such as removing and cleaning fabricated parts, inspection, segregation etc. of parts. • Discuss ways for removing the fabricated part from machine and support structures from the part. • Explain methods of inspecting the quality and non-conformities of the part. • Discuss the process of segregating of damaged and ok parts as per organisational guidelines. • Discuss the process of storing of ok parts as per organisational guidelines. • Discuss the documents needed to be maintained related to work.	• Demonstrate organizational specified procedure of operating the 3D printing machine for printing of automotive components. • Apply appropriate ways to identify and rectify errors in machine during the machine operation. • Show how to stop the machine during an unwanted situation. • Demonstrate how to remove the fabricated part and support structures from the machine carefully. • Apply appropriate ways to clean the part for getting required surface finish. • Apply appropriate inspection methods for checking the quality and non-conformities of the part. • Show how to segregate the parts into rework or reject as per organisational guidelines. • Demonstrate how to store the manufactured automotive parts as per organisational guidelines.
Classroom Aids:	
Laptop White board, Marker, Projector & stationary	
Tools, Equipment and Other Requirements	
3D Printing machines- Fixed Deposition Modelling Machine, Stereo-Lithography Machine, Metal Sintering Machine & any other type of 3D printing machine with the all the consumables required. Flash Drive (With pre-stored program)	

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 mitigation plan • Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement	• Create a sample business plan, for the selected business opportunity
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	1	Mechanical/ Automobile	1	Mechanical/ Automobile	**NA**
B.E./B. Tech	Mechanical/Automobile	2	Mechanical/ Automobile	1	Mechanical/ Automobile	**NA**
Diploma	Mechanical/Automobile	3	Mechanical/ Automobile	1	Mechanical/ Automobile	**NA**

Trainer Certification	
Domain Certification	**Platform Certification**
"Automotive Prototype Manufacturing Lead Technician, ASC/Q6501, 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	2	Mechanical/ Automobile	1	Mechanical/ Automobile	**NA**
B.E./B. Tech	Mechanical/Automobile	3	Mechanical/ Automobile	1	Mechanical/ Automobile	**NA**
Diploma	Mechanical/Automobile	4	Mechanical/ Automobile	1	Mechanical/ Automobile	**NA**

Assessor Certification	
Domain Certification	**Platform Certification**
"Automotive Prototype Manufacturing Lead Technician, ASC/Q6501, 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 SDSM/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
   - Center 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
CFT	Complement Fixation Test