







Model Curriculum

QP Name: Electric Vehicle Quality Control Inspector

QP Code: ASC/Q6307

QP Version: 2.0

NSQF Level: 3.5

Model Curriculum Version: 1.0

Automotive Skills Development Council | 153, Gr Floor, Okhla Industrial Area, Phase – III, Leela Building, New Delhi – 110020







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Training Parameters

Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Automotive Quality Assurance
Country	India
NSQF Level	3.5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3139.5001
Minimum Educational Qualification and Experience	8th Class pass with 2 years of NTC + 1 year experience OR 8th Class pass with 3 years relevant experience OR 10th Class pass and pursuing continuous schooling OR 11th Class pass OR Certificate-NSQF (Automotive Quality Control Inspector Level 3) with 2 Years of experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 years
Last Reviewed On	25/11/2021
Next Review Date	25/11/2024
NSQC Approval Date	25/11/2021
QP Version	2.0
Model Curriculum Creation Date	25/11/2021
Model Curriculum Valid Up to Date	25/11/2024
Model Curriculum Version	1.0
Minimum Duration of the Course	420 Hours 00 Minutes
Maximum Duration of the Course	420 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.

- Carry out quality inspection activities such as inspection of Electric Vehicle (EV) parts, products and processes, measuring dimensions of part and product, etc.
- Work effectively and efficiently as per schedules and timelines.
- Implement safety practices.
- Optimize the use of resources to ensure less wastage and maximum conservation.

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	00:00			05:00
Module 1: Introduction to the role of an Electric Vehicle Quality Control Inspector	5:00	0:00			5:00
ASC/N9803 – Organize work and resources (Manufacturing) NOS Version No. – 1.0 NSQF Level – 3	25:00	35:00			55:00
Module 2: Organize work and resources according to safety and conservation standards	25:00	35:00			55:00
DGT/VSQ/N0102 - Employability Skills (60 hours) NOS Version No. – 1.0 NSQF Level – 5	24:00	36:00			60:00
Module 3: Introduction to Employability Skills	0.5:00	1:00			1.5:00
Module 4: Constitutional values - Citizenship	0.5:00	1:00			1.5:00
Module 5: Becoming a Professional in the 21st Century	1:00	1.5:00			2.5:00
Module 6: Basic English Skills	4:00	6:00			10:00
Module 7: Career Development & Goal Setting	1:00	1:00			2:00
Module 8: Communication Skills	2:00	3:00			5:00
Module 9: Diversity & Inclusion	1:00	1.5:00			2.5:00
Module 10: Financial and Legal Literacy	2:00	3:00			5:00







Module 11: Essential Digital Skills	4:00	6:00		10:00
Module 12: Entrepreneurship	3:00	4:00		7:00
Module 13: Customer Service	2:00	3:00		5:00
Module 14: Getting ready for apprenticeship & Jobs	3:00	5:00		8:00
ASC/N6313 – Inspect and maintain the electric vehicle (EV) parts and process quality and implement corrective actions NOS Version No. – 1.0 NSQF Level – 4	80:00	190:00	30:00	300:00
Module 15: Inspect and maintain quality of Electric Vehicle (EV) parts and related processes	80:00	190:00	30:00	300:00
Total Duration	134:00	261:00	30:00	420:00







Module Details

Module 1: Introduction to the role of an Electric Vehicle Quality Control Inspector Bridge module

Terminal Outcomes:

• Discuss the role and responsibilities of an Electric Vehicle Quality Control Inspector.

Duration : <00:00>
Practical – Key Learning Outcomes







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

Mapped to ASC/N9803, v1.0

Terminal Outcomes:

- Employ appropriate ways to maintain safe and secure working environment.
- Perform work as per the quality standards.
- Apply conservation practices at the workplace.

Duration: <25:00>	Duration : <35:00>
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
List the potential workplace related risks	Apply appropriate safety practices to
and hazards, their causes and preventions.	ensure safety of people at the workplace
 Identify PPE to be used at workplace. 	Display the correct way of wearing and
• Identify various warning signs used at the workplace.	removing PPE such as face masks, hand gloves, face shields, PPE suits, etc.
Describe appropriate strategies to deal	Demonstrate the use of fire extinguisher.
with emergencies and accidents at the workplace.	 Apply basic first aid procedure in case of emergencies.
Outline the organizational structure to be	 Perform routine cleaning of tools,
followed to report about health, safety	equipment and machines.
and security breaches to the concerned	Employ various techniques for checking
authorities.	malfunctions in the equipment as per
Discuss the importance of keeping work	Standard Operating Procedure (SOP).
area clean and tidy.	Show how to sanitize and disinfect one's
Discuss the significance of conforming to	work area regularly.
basic hygiene practices such as washing	Demonstrate the correct way of washing
hands, using alcohol based hand sanitizers	hands using soap and water.
or soap.Discuss organizational hygiene and	Demonstrate the correct way of sanitizing hands using also hall based hand rules.
 Discuss organizational hygiene and sanitation guidelines and ways of 	hands using alcohol-based hand rubs.Demonstrate how to evacuate the
reporting breaches/gaps if any to the	workplace in case of an emergency.
concerned authorities.	 Demonstrate sorting of materials, tools
Discuss the ways of dealing with stress	and equipment and spare parts after
and anxiety.	completion of work.
Discuss how to complete the given work	Demonstrate the steps involved in storage
within the stipulated time period.	of tools, equipment and material after
Explain how to maintain a proper balance	completion of work.
between team and individual goals.	Perform basic checks to identify any spills
Explain 5S guidelines at workplace.	and leaks and that need to be plugged
List the various materials used at the	/stopped.
workplace.	Demonstrate different disposal techniques
Explain organisational recommended	depending upon types of waste.
procedure for storage of tools, equipment	Employ different ways to check if
and material after completion of work.	equipment/machines are functioning as
Explain the ways to optimize usage of	per requirements and report
resources.	malfunctioning, if observed.
Discuss various methods of waste	Employ ways for efficient utilization of

material and water.

management and its disposal.







- List the different categories of waste for the purpose of segregation
- Differentiate between recyclable and nonrecyclable waste
- State the importance of using appropriate colour dustbins for different types of waste.
- Discuss common practices for conserving electricity at workplace.
- Discuss the common sources of pollution and ways to minimize it.

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: 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 4: Constitutional values - Citizenship Mapped to DGT/VSQ/N0102

Terminal Outcomes:

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

Practical – Key Learning Outcomes
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 Show how to practice different environmentally sustainable practices
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Module 5: 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 6: Basic English Skills Mapped to DGT/VSQ/N0102

Terminal Outcomes:

• Practice basic English speaking.

Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
for everyday conversation in different contexts, in person and over the
Read and interpret text written in basic English Write a short note/paragraph / letter/e - mail using basic English







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 8: 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	
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Module 9: 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 10: 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 11: Essential Digital Skills

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

Demonstrate procedure of operating digital devices and associated applications safely.
 12 | Electric Vehicle Quality Control Inspector







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 12: 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 13: 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.			
Clas	Classroom Aids:				
Whi	Whiteboard, marker pen, projector				
_	Tools, Equipment and Other Requirements				

Module 14: 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				
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Module 15: Inspect and maintain quality of Electric Vehicle (EV) parts and related processes

Mapped to ASC/N6313, v1.0

Terminal Outcomes:

- Identify testing equipment, measuring instruments, gauges, parts etc. required for quality inspection job.
- Demonstrate methods and techniques for quality inspection of EV parts and related processes.
- Prepare and maintain documents and reports related to quality inspection work.

Duration : <80:00>	Duration : <220:00>		
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes		
 List various components /aggregates and the manufacturer's specifications of an electric vehicle. Discuss basic technology used, functioning and interconnections of various systems and components of the vehicle. Recall fundamental terms, laws and principles of electricity used in EV. Describe various symbols, units and terms used in wiring diagrams associated with electrical/electric systems/components of the vehicle. Explain legal regulations that need to be taken into account for handling electric vehicles. Discuss organisational quality inspection standards and processes. Discuss the information collected from the inspection tasks and quality check criteria of EV parts and processes and how to confirm it from the superior. Classify measuring instruments as direct/indirect, precision/non-precision etc, gauges. List testing equipment, measuring instruments, gauges, parts etc. required during the quality inspection process. 	 Demonstrate the standard operating procedures to use the testing equipment, measuring instruments, gauges, parts etc. required during the quality inspection process. Show how to collect the required testing equipment, measuring instruments, gauges, parts etc. from the store. Apply appropriate ways of checking the calibration of tools, gauges and measuring instruments before use. Show how to visually inspect the EV parts for scratches, dents, damages, packing etc. Perform the steps to inspect the dimensions and function of part or product. Show how to judge the part or product through feel, touch, sound, smell, etc. Apply appropriate ways to maintain and preserve the tested samples of EV part or product for future use. Show how to check the sticker/number/label of the inspected automotive part or product. Apply appropriate inspection techniques to verify the EV manufacturing related process control items. Show how to measure and control the 		
 Discuss the organisational process of collecting and arranging the testing equipment, measuring instruments, gauges, parts etc. from the store. Summarise the steps to be performed for checking the calibration of tools, gauges 	 quality of EV manufacturing process by using Statistical Process Control (SPC). Prepare a sample first-off inspection report as per the process inspection standard/process parameter sheet/control plan. 		
and measuring instruments before use.	• Prepare records, reports and documents		

related to quality inspection process as

Discuss the safety practices to avoid any







- hazard and accident during quality inspection activities.
- List QMS system guidelines followed in the organization.
- Recall manufacturing process for each automotive part and product.
- Explain methods and techniques of inspecting the quality of automotive parts, products and related processes.
- List inspection checkpoints for the EV parts, product and process.
- Explain ways of measuring the dimensions of automotive part or product.
- Elucidate the importance of maintaining and preserving the tested samples of EV part or product as limit samples.
- Discuss inspection techniques to verify the quality and effectiveness of EV product and process.
- Discuss the records, reports and documents needed to be maintained and updated as per SOP.
- Identify different methods for disposing off scrap.
- Recall process of operating softwares like SAP, ERP etc.
- Describe poka yoke, mould functioning, fixture condition etc.
- Describe problem solving & analysis tools like 8Ds, five why analysis etc.

- per SOP.
- Show how to raise scrap note and dispose scrapped part or product as per organisational guidelines.
- Role play a situation on how to coordinate with the team as a CFT member to analyse the problems and identify corrective actions pertaining to the products handled.
- Demonstrate ways to collect the data related to problems identified in inspection process.
- Role play a situation on how to coordinate with the team to analyse the problems identified in inspection process.
- Dramatise how to coordinate with the process line leader/supervisor to identify the corrective actions for discrepancies identified in the inspection report.
- Apply appropriate ways to implement the corrective actions for discrepancies identified.
- Role play a situation on how to coordinate with the team to identify opportunities for improvements in productivity, quality, cost, safety and morale.
- Apply appropriate ways to verify the daily check items for e.g. poka yoke, mould functioning, fixture condition etc.

Classroom Aids:

Whiteboard, marker pen, projector

Tools, Equipment and Other Requirements

NG Parts With Known Dimension, Air Gauge Unit/Plugs/Rings, Apron, Bore Gauge, Centre Bench, Defective Samples, Dial Gauge/With Stand, Fixtures, Gauges, Height Gauge, Labels / Stickers, Sample Inspection Report Format, Limit Samples for Visual Defects, Manuals for SPC, APQP, MSA TS Standards, Micrometer, Ok Parts With Known Dimension, Parts (Within & Out Of Tolerance As Per Drawings), Plug ,Ring & Taper Go/No Go Gauges, Profile Gauge, Sample Parts, Screw Jack, Standard V Block/Magnetic, Surface Plate With Stand, Thread Plug/Ring Gauge, Tools, Vernier Caliper







Annexure

Trainer Requirements

		rainer	Prerequisite:	S		
Minimum Specialization Educational	Relevant Industry Experience		Training Experience		Remarks	
Qualification		Years	Specialization	Years	Specialization	
ITI	Fitter/Electrical/Mechanic Auto Electronical & Electronics/ Electronic Mechanic	5	Quality	1	Quality	NA
IΤΙ	Fitter/Electrical/Mechanic Auto Electronical & Electronics/ Electronic Mechanic	6	Quality	0	Quality	NA
Diploma	Electrical/Electronics/ Automobile	3	Quality	1	Quality	NA
Diploma	Electrical/Electronics/ Automobile	4	Quality	0	Quality	NA

Trainer Certification		
Domain Certification	Platform Certification	
"Electric Vehicle Quality Control Inspector, ASC/Q6307, version 1.0". Minimum accepted score is 80%.	Recommender 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 Specialis Educational	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
Qualification		Years	Specialization	Years	Specialization	
ITI	Fitter/Electrical/Mechanic Auto Electronical & Electronics/ Electronic Mechanic	6	Quality	1	Quality	NA
ITI	Fitter/Electrical/Mechanic Auto Electronical & Electronics/ Electronic Mechanic	7	Quality	0	Quality	NA
Diploma	Electrical/Electronics/ Automobile	4	Quality	1	Quality	NA
Diploma	Electrical/Electronics/ Automobile	5	Quality	0	Quality	NA

Assessor Certification		
Domain Certification	Platform Certification	
"Electric Vehicle Quality Control Inspector, ASC/Q6307, version 1.0". Minimum accepted score is 80%.	Recommender that the Accessor is certified for the job role "Accessor (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