Model Curriculum

QP Name: Four Wheeler Service Technician

QP Code: ASC/Q1402

QP Version: 3.0

NSQF Level: 4

Model Curriculum Version: 1.0

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

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Training Parameters

Sector	Automotive Skills Development Council
Sub-Sector	Automotive Vehicle Service
Occupation	Technical Service & Repair
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3115.0602
Minimum Educational Qualification & Experience	10th Class/ITI (Motor Mechanic) or Certificate NSQF - Four Wheeler Service Assistant with 1-2 years of experience
Pre-Requisite License or Training	Driving License and Basic Computer Skills
Minimum Job Entry Age	18 Years
Last Reviewed On	29/04/2020
Next Review Date	29/04/2025
NSQC Approval Date	
Version	3.0
Model Curriculum Creation Date	29/04/2020
Model Curriculum Valid Up to Date	29/04/2025
Model Curriculum Version	1.0
Minimum Duration of the Course	456 Hours, 0 Minutes
Maximum Duration of the Course	456 Hours, 0 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.

- Assist the lead technician in diagnosing repair requirements of the vehicle.
- Perform routine service/maintenance/minor repairs of the vehicle.
- Work effectively and efficiently as per schedules and timelines while complying with the health and hygiene norms.
- Implement safety practices.
- Optimize the use of resources 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	**08:00**	**00:00**	**-**	**-**	**08:00**
Introduction to the Role of a Four Wheeler Service Technician *Bridge Module*	08:00	00:00	-	-	08:00
ASC/N9801 - Organize Work and Resources (Service) **NOS Version No. 1.0** **NSQF Level 4**	**16:00**	**24:00**	-	-	**40:00**
Work effectively and efficiently	08:00	16:00	-	-	24:00
Optimize resource utilization	08:00	08:00	-	-	16:00
ASC/N9802 – Interact Effectively with Colleagues, Customers and others **NOS Version No. 1.0** **NSQF Level 4**	**16:00**	**24:00**	-	-	**40:00**
Communicate effectively and efficiently	16:00	24:00	-	-	40:00
ASC/N1402 Assist in performing diagnosis of vehicle for repair requirements **NOS Version No. 2.0** **NSQF Level 4**	**64:00**	**96:00**	-	-	**160:00**

Assist in Diagnosing Repair Requirements	64:00	96:00	-	-	160:00
ASC/N1403 Carry out routine service and minor repairs **NOS Version No. 2.0** **NSQF Level 4**	**72:00**	**136:00**	-	-	**208:00**
Perform Routine Service and Repairs	72:00	136:00	-	-	208:00
Total Duration	**176:00**	**280:00**	-	-	**456:00**

Module Details

Introduction to the Role of a Four Wheeler Service Technician

Bridge Module

Terminal Outcomes:

- Discuss how to work as per the defined the role and responsibilities of a Four Wheeler Service Technician.
- Discuss the scope of work of Four Wheeler Service Technician.

Duration: *08:00*	**Duration: *00:00***
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the role and responsibilities of a four wheeler service technician • Identify the various parts/components (inside as well as outside of a vehicle) of 4 wheeler vehicles • List the standard operating procedures (SOP) to be followed for use of tools and equipment, service and minor repairs • Discuss the documentation involved in the different processes of maintenance such as job sheet, status report, etc. • Identify the standard checklists and schedules recommended by OEM • Explain working as per SOP pertaining to processes, tools and pollution check • Describe how to work as per organisational policies and professional code of conduct	
Classroom Aids:	
Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	
Documents of standard operating procedures, code of conduct, checklists, schedules	

Work Effectively and Efficiently
Mapped to NOS ASC/N9801

Terminal Outcomes:

- Employ appropriate ways to maintain a safe and secure working environment.
- Perform work as per the quality standards.

Duration: ***08:00***	**Duration**: ***16:00***
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Outline the organizational structure to be followed to report about health, safety and security breaches to the concerned authorities. • List the potential workplace related risks and hazards, their causes and preventions. • State the methods to keep the work area clean and tidy. • Discuss how to complete the given work within the stipulated time period. • Explain how to maintain a proper balance between team and individual goals. • Discuss epidemics and pandemics and their impact on society at large. • Discuss the significance of conforming to basic hygiene practices such as washing hands, using alcohol-based hand sanitizers. • Discuss the use of proper PPE for maintaining health and hygiene at workplace and the process of wearing/discarding them. • Define self-quarantine or self-isolation. • Discuss the importance of identifying and reporting symptoms to the concerned authorities. • Explain the significance of following prescribed rules and guidelines during an epidemic or a pandemic. • Discuss organizational hygiene and sanitation guidelines and ways of reporting breaches/gaps if any. • Discuss the ways of dealing with stress and anxiety during an epidemic or a pandemic.	• Perform routine cleaning of tools, equipment and machines. • Employ various techniques for checking malfunctions in the equipment as per Standard Operating Procedure (SOP). • Apply basic housekeeping practices to ensure that the work area is clean, such as mopping spills and leaks, cleaning grease stains etc. • Demonstrate how to evacuate the workplace in case of an emergency. • Show how to sanitize and disinfect one's work area regularly. • Demonstrate the correct way of washing hands using soap and water. • Demonstrate the correct way of sanitizing hands using alcohol-based hand rubs. • Display the correct way of wearing and removing PPE such as face masks, hand gloves, face shields, PPE suits, etc. • Demonstrate appropriate social and behavioural etiquette (greeting and meeting people, spitting/coughing/sneezing, etc.). • Prepare a list of relevant hotline/emergency numbers.
Classroom Aids:	
White board/black board marker/chalk, duster, computer or Laptop attached to LCD projector	
Tools, Equipment and Other Requirements	

Personal Protection Equipment: safety glasses, head protection, rubber gloves, safety footwear, warning signs and tapes, fire extinguisher and first aid kit Sanitization kit, disinfectants, alcohol-based sanitizers, different types of face masks, shields, suits, etc.

Optimize Resource Utilization
Mapped to NOS ASC/N9801

Terminal Outcomes:

- Use the resources efficiently.
- Apply conservation practices at the workplace.

Duration: *08:00*	**Duration: *08:00***
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the ways to optimize usage of resources. • Discuss various methods of waste management and its disposal. • List the different categories of waste for the purpose of segregation • Differentiate between recyclable and non-recyclable waste • State the importance of using appropriate colour dustbins for different types of waste. • Discuss the common sources of pollution and ways to minimize it.	• Perform basic checks to identify any spills and leaks and that need to be plugged /stopped. • Demonstrate different disposal techniques depending upon different types of waste. • Employ different ways to check if equipment/machines are functioning as per requirements and report malfunctioning, if observed. • Employ ways for efficient utilization of material and water • Use energy efficient electrical appliances and devices to ensure energy conservation
Classroom Aids:	
White board/black board marker/chalk, duster, computer or Laptop attached to LCD projector	
Tools, Equipment and Other Requirements	
Different type of waste bins to collect and segregate waste for disposal	

Communicate Effectively and Efficiently
Mapped to NOS ASC/N9802

Terminal Outcomes:

- Use effective communication and interpersonal skills.
- Apply sensitivity while interacting with different genders and people with disabilities.

Duration: *16:00*	**Duration: *24:00***
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the organizational structure for communicating with colleagues, seniors and others. • Discuss the ways to adjust the communication styles to reflect sensitivity towards gender and persons with disability (PwD). • Explain the importance of respecting personal space of colleagues and customers. • State the procedure to receive work instructions and report problems to the supervisor. • List the various organizational policies and procedures to be followed at the workplace. • Describe different ways to rectify commonly occurring errors. • Explain the importance of complying with the instructions/guidelines and procedures while performing tasks related to the job specifications. • Discuss the importance of PwD and gender sensitization.	• Employ different means of communication depending upon the requirement while interacting with others. • Demonstrate using new ways to maintain good relationships with colleagues and supervisor. • Prepare a sample report to send the work status to the supervisor. • Demonstrate how to communicate with different genders and persons with disability (PwD) in a sensitive manner.
Classroom Aids:	
White board/black board marker/chalk, duster, computer or Laptop attached to LCD projector	
Tools, Equipment and Other Requirements	
Sample of escalation matrix, organisation structure.	

Assist in Diagnosing Repair Requirements
Mapped to NOS ASC/N1402

Terminal Outcomes:

- Demonstrate how to use different techniques for diagnosing the repair requirements of the vehicle

Duration: *64:00*	**Duration: *96:00***
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the basics of driving and parking a four wheeler vehicle • Discuss the manufacturer specifications and safety requirement w.r.t. components/aggregates of the vehicle • Explain the basics of different types of engines, mechanical, electrical and other systems of the vehicle • List the types of tools and equipment used in different processes of vehicle maintenance • Discuss the symptoms of technical faults, their causes and rectification procedures • List the inspection parameters w.r.t coolants, oil, grease, etc. including value and tolerance limits of components • Distinguish between different types of repairs within one's scope and those beyond the scope of work • Identify the possible defects in various tools and equipment • Discuss the documents to be maintained w.r.t inspection and diagnosis of faults • Explain the safety measures w.r.t. equipment and components during fault diagnosis	• Analyse the job card to plan diagnostic activities as per the complaints mentioned in the job card • Demonstrate how to do a test drive of the vehicle • Employ appropriate techniques to park the vehicle in the workshop's designated service/repair area as instructed by lead technician • Apply basic techniques to diagnose faults in the sub-assemblies of the vehicle • Demonstrate how to check the vehicle for the service and repair requirements based on the job card • Demonstrate how to use tools and equipment required for diagnosis as per standard operating procedures • Employ various precautions and safety measures to ensure that no damage is caused to the vehicle during diagnosis • Prepare documents required for diagnosis/troubleshooting of common issues
Classroom Aids:	
Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	
Diagnostic tools, equipment and other sources of information such as diagnostic displays, etc., computer, vehicle, job card Vehicle, various body parts, engine, sub-assemblies, material, mechanical and electrical components/aggregates	

Perform Routine Service and Repairs
Mapped to NOS ASC/N1403

Terminal Outcomes:

- Demonstrate how to perform service and minor repairs of the vehicle

Duration: *72:00*	**Duration:** *136:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the job card to clearly understand the service and repair requirements • List the various sources of information to assess service/repair requirements • Discuss how to gauge misfits or issues in the previous repair • Identify the parameters for inspection/routine service/non-routine repair work • Discuss the checklist for tasks to be performed for routine or non-routine service/repair • Explain the specifications w.r.t. quality and type of material/consumables/components required for routine service • Discuss the importance of using appropriate spare parts and other material for service/maintenance such as grade of oil, lubricants, grease, etc. • Discuss the symptoms of wear and tear w.r.t. components needing replacement such as filters, belts, wipers, etc. • Identify different methods for disposing off waste material such as waste oil, scrap, etc. • List the necessary precautions so as to avoid any kind of damage to aggregates/vehicle • Identify the defects/malfunctions in the tools/equipment and leftover consumables/parts to be reported further for rectification • Determine any other repair requirements to be escalated further for inspection • List the records/documents to be maintained w.r.t service/repair work	• Demonstrate how to do a test drive of the vehicle to assess the service/repair/calibration requirements • Apply basic maintenance techniques to ensure that the tools and equipment are functioning as per SOP • Perform the process of routine service/maintenance as per standard operating procedures • Employ different corrective actions to be taken for common faults and failures • Demonstrate how to dismantle the aggregates that require servicing/repair as per SOP • Apply suitable cleaning techniques for cleaning and conditioning the dismantled aggregates • Perform final inspection at each stage to ensure completion of work as assigned by the service technician • Demonstrate how to record the basic repair and service inspections performed on the vehicle • Prepare a schedule for carrying out inspection, calibration and repairs of the tools, equipment, workstations, etc. to maintain workshop • Apply ways to maintain the workshop by conducting properly scheduled check/calibration/repairs of tools, equipment and workstations
Classroom Aids:	
Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	

Vehicle, various body parts, engine, tools and equipment, material, consumables, components/aggregates, lubricants, grease, oil, etc.

Pressure indicators: fuel pressure testers, manifold gauge sets, oil pressure gauges, tire pressure gauges etc., pullers: ball joint separators, bearing pullers, gear puller tools, slide hammers etc., trim or moulding tools: carbon scrapers, gasket scrapers, scrapers, spoons etc., measuring equipment: vernier calipers, micrometre, feeler gauges, multi-metre, flow metre, temp gauge, dial gauge etc., other tools: hand tools, power tools, lifting/jacking equipment, tensioning equipment, security activator etc., tools for other tasks such as cleaning of vehicles, brake bleeding, wheel alignment, AC gas charging etc.

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
ITI/Diploma	Automobile Engineering/ Mechanical Engineering/ Motor Vehicle Mechanic	3	Four Wheeler Service	1	Four Wheeler Service	**NA**
ITI/Diploma	Automobile Engineering/ Mechanical Engineering/ Motor Vehicle Mechanic	4	Four Wheeler Service	0	Four Wheeler Service	**NA**
Certificate- NSQF Level 6	Four Wheeler Master Technician	3	Four Wheeler Service	1	Four Wheeler Service	NA

Trainer Certification	
Domain Certification	**Platform Certification**
"Four Wheeler Service technician", "ASC/Q1402", minimum accepted score is 80%	"Trainer", "MEP/Q2601", with scoring of minimum 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
ITI/Diploma	Automobile Engineering/ Mechanical Engineering/ Motor Vehicle Mechanic	4	Four Wheeler Service	2	Four Wheeler Service	**NA**
ITI/Diploma	Automobile Engineering/ Mechanical Engineering/ Motor Vehicle Mechanic	5	Four Wheeler Service	0	Four Wheeler Service	**NA**
Certificate- NSQF Level 6	Four Wheeler Master Technician	4	Four Wheeler Service	2	Four Wheeler Service	NA

Assessor Certification	
Domain Certification	**Platform Certification**
"Four Wheeler Service technician", "ASC/Q1402", minimum accepted score is 80%	"Assessor", "MEP/Q2701", with scoring of minimum 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:

    The assessor should:

    - 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 are created by the Subject Matter Experts (SME)
    - Question papers created by the SME are 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