AUTOMOTIVE SKILLS DEVELOPMENT COUNCIL

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

Skill India

N·S·D·C National Skill Development Corporation
Transforming the skill landscape

Model Curriculum

QP Name: Automotive Body Repair Technician

QP Code: ASC/Q1405

QP Version: 2.0

NSQF Level: 4

Model Curriculum Version: 1.0

Automotive Skill Development Council
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Table of Contents

Table of Contents 2

Training Parameters 3

Program Overview 4

- Training Outcomes 4
- Compulsory Modules 4

Module Details 6

- Module 1- Introduction to the Role of an Automotive Body Repair Technician 6
- *Bridge Module* 6
- Module 2 - Work Effectively and Efficiently 7
  - *Mapped to NOS ASC/N9801 v1.0* 7
- Module 3 - Optimize Resource Utilization 9
  - *Mapped to NOS ASC/N9801 v1.0* 9
- Module 4 - Communicate Effectively and Efficiently 10
  - Mapped to NOS ASC/N9802 v1.0 10
- Module 5 - Repair/Replace Vehicle's Non-structural Body Components 11
- Module 6 - Perform Repairs by Cutting or Welding Sheets on the Vehicle's Body 13

Annexure 15

- Trainer Requirements 15
- Assessor Requirements 16
- Assessment Strategy 17
- References 18
- Glossary 18
- Acronyms and Abbreviations 19

Training Parameters

Sector	Automotive
Sub-Sector	Automotive Vehicle Service
Occupation	Technical Service & Repair
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7213.0301
Minimum Educational Qualification & Experience	8th Class pass + ITI with 2 years relevant experience OR 10th Class + 1 year ITI (Mechanic Auto Body Repair) with 1 year relevant experience OR 10th Class pass with 3 years relevant experience OR 12th Class pass with 1 year relevant experience OR Certificate-NSQF (Automotive Body Repair Assistant Level 3) with 2 Years of experience
Pre-Requisite License or Training	LMV Driving License
Minimum Job Entry Age	18 Years
Last Reviewed On	29/07/2021
Next Review Date	29/07/2026
NSQC Approval Date	29/07/2021
Version	2.0
Model Curriculum Creation Date	29/07/2021
Model Curriculum Valid Up to Date	29/07/2026
Model Curriculum Version	1.0
Minimum Duration of the Course	390 Hours, 0 Minutes
Maximum Duration of the Course	390 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.

- Work effectively and efficiently as per schedules and timelines.
- Implement safety practices.
- Optimize the use of resources.
- Communicate effectively using interpersonal skills.
- Identify the role, responsibilities and scope of work of an automotive body repair technician.
- Perform repairs and replacement on non-structural body panels/components of vehicles.
- Carry out repairs for the vehicle body by cutting and welding metal sheets under supervision.

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 Automotive Body Repair Assistant	05:00	00:00	-	-	05:00
ASC/N9801: Organize Work and Resources (Service) **NOS Version No. 1.0** **NSQF Level 4**	**15:00**	**30:00**	-	-	**45:00**
Module 2: Work effectively and efficiently	09:00	15:00	-	-	24:00
Module 3: Optimize resource utilization	06:00	15:00	-	-	21:00
ASC/N9802: Interact Effectively with Colleagues, Customers and Others **NOS Version No. 1.0** **NSQF Level 4**	**15:00**	**25:00**	-	-	**40:00**
Module 4: Communicate effectively and efficiently	15:00	25:00	-	-	40:00

ASC/N1412: Carry out repairs and replacement on non-structural body panels or components NOS Version No. 2.0 NSQF Level 4	**60:00**	**90:00**	-	-	**150:00**
Module 5 : Repair/Replace Vehicle's Non-structural Body Components	60:00	90:00	-	-	150:00
ASC/N1413: Carry out repair/replacement by cutting and welding on structural or non-structural body panels NOS Version No. 2.0 NSQF Level 4	**60:00**	**90:00**	-	-	**150:00**
Module 6 : Perform repairs by cutting or welding sheets on the vehicle's body	60:00	90:00	-	-	150:00
Total Duration	**155:00**	**235:00**	-	-	**390:00**

Module Details

Module 1- Introduction to the Role of an Automotive Body Repair Technician

Bridge Module

Terminal Outcomes:

- Identify the role, responsibilities and scope of work of an automotive body repair technician.
- Identify the importance of following process, policies, and procedures.

Duration: *05:00*	**Duration**: *0:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the role and responsibilities of an automotive body repair technician. • List the schedules and checklists pertaining to repairs of body panels and components. • Explain about Automotive Industry in India, workshop structure and role and responsibilities of different people in the workshop. • Elaborate standard operating procedures (SOPs) regarding receiving vehicles, opening job card, allocation of work, invoicing, vehicle delivery, handling complaints etc. • Describe how to work as per organisational and professional code of ethics and standards of practice. • Outline the safety, health and environment policies to be followed for the automotive sector. • Discuss SOPs recommended by OEM w.r.t. repair and replacement of body panels and components in the vehicle.	
Classroom Aids:	
Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	
PPE kit, job card, protective covers of vehicle, hand tools, welding & cutting tools and equipment, vehicle's body panels and components etc.	

Module 2 - Work Effectively and Efficiently

Mapped to NOS ASC/N9801 v1.0

Terminal Outcomes:

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

Duration: *<09:00>*	**Duration:** *<15:00>*
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.

Module 3 - Optimize Resource Utilization

Mapped to NOS ASC/N9801 v1.0

Terminal Outcomes:

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

Duration: *<06:00>*	**Duration:** *<15:00>*
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	

Module 4 - Communicate Effectively and Efficiently

Mapped to NOS ASC/N9802 v1.0

Terminal Outcomes:

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

Duration: *<15:00>*	**Duration:** *<25:00>*
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.	

Module 5 - Repair/Replace Vehicle's Non-structural Body Components

Mapped to NOS ASC/N1412, v2.0

Terminal Outcomes:

- Demonstrate the process of assessing damages and repair estimation under supervision.
- Perform repairing or replacement activities on non-structural panels or components

Duration: *60:00*	**Duration**: *90:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Identify different types of vehicle body and chassis damage/defects their cause, prevention and rectification, features of body construction and structural/non-structural panels, characteristics of common metals. • Discuss the job card received from the supervisor to understand repair requirements. • Assess the extent of damage to determine direction of impact and whether all the damages are due to the same time and situation. • Explain how to assist the supervisor/service advisor for visual inspection of the vehicle and identification of the type of damages on various parts of the body. • Describe how to prepare initial estimate by listing down repair requirements, time and replacement of consumables and other OEM components along with the supervisor/service advisor. • Identify the nomenclature, manufacturer's specifications of different consumable/material and hand tools, manual and electric dent pullers, welding equipment etc. and vehicle parts and body panels. • Discuss the overall functioning of various types of collision repair equipment, workshop tools /materials, their usage, storage and maintenance. • Recall the processes and procedures for preparing replacement panel work and panel fixing positions. • Summarise the removal, replacement, repair, and testing procedures related to vehicle body and frame	• Employ various techniques to assess the extent of damages in the vehicle's body and report malfunctions/repairs that are beyond own scope to the supervisor/service advisor. • Demonstrate how to park/place the vehicle on a suitable platform as per the job requirements. • Demonstrate how to collect, check and use the tools, equipment, components/aggregates, fittings, new panel, spare parts, consumables or materials as required for the repair. • Perform appropriate steps using proper techniques to remove detachable parts of the vehicle and tag removed items for repair, reuse and replacement. • Implement different ways to perform various OEM specific tasks during repair such as riveting, bonding, screwing, bolting etc. • Demonstrate how to apply suitable sealers, foams, anti-corrosion coatings and sound dampening pads on the vehicle's body parts during repair. • Employ suitable techniques for reinstalling non-structural removed/repaired/new panels/parts ensuring correct alignment of the panels and components. • Implement ways for inspecting grooves, angles, or gap allowances of body panels/components after repair and reinstallation by using testing devices as per manufacturer's specifications. • Perform steps to test for water leaks in the body panels and ensure that the sealing or adhesion of replaced rubber seal/weather strip or glass work activity is correct and as per OEM recommended guidelines.

• Explain how to report any malfunctions observed in the tools/equipment/material or any additional repair requirement in the vehicle to the concerned person. • Describe the importance of using proper PPE and ensuring order and cleanliness in the work area to avoid any hazard or damage to the vehicle and its components. • List the methods for removing and replacing exterior and interior body parts of the vehicle. • Identify the characteristics of commonly used glass parts such as Tempered/Toughened glass & Laminated glass and plastic parts in the vehicle such as Polypropylene (PP), Poly Carbonate (PC) in the vehicle's body. • Emphasize on the importance of proper tagging and placement of vehicle's removed parts securely as per manufacturers' guidelines. • Describe the importance for maintaining complete documentation on the repair/replacement job/task of the vehicle. • Discuss how to check whether all repair activities/tasks have been completed as per requirements and specifications before releasing the vehicle for the next procedure.	• Implement proper waste disposal techniques for disposing scrap of damaged parts/panels. • Employ proper procedure for returning leftover consumable/parts and tools/equipment to the store/person incharge and informing them about any malfunctions. • Perform steps to reinstate suitable corrosion protection to replaced parts of the vehicle's body. • Demonstrate how to inspect the repaired body panel/components of the vehicle for proper functioning and test drive vehicles to verify proper alignment and handling.
Classroom Aids:	
Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	
PPE kit, job card, protective covers of vehicle, hand tools, welding & cutting tools and equipment, vehicle's body panels and components etc.	

Module 6 - Perform Repairs by Cutting or Welding Sheets on the Vehicle's Body

Mapped to NOS ASC/N1413, v2.0

Terminal Outcomes:

- Perform cutting and welding activities on vehicle body panels.
- Carry out post cutting and welding activities.

Duration: *60:00*	**Duration**: *90:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the job card received from the supervisor to understand repair requirements. • Explain the principles of pulling systems, operation and adjustment of welding systems used for panel repair or replacement. • Describe the overall functioning of different types of collision repair tools/equipment and materials. • Identify the workshop tools/equipment and materials along with their usage, storage and maintenance procedures. • Explain the importance of using proper PPE for cutting and welding activities and ensure order/cleanliness in the work area to avoid any hazard or damage to the vehicle and its components. • Describe how to take assistance from supervisor to perform rough pulling for body alignment process. • Discuss how to assist supervisor in measuring the vehicle body dimensions to ensure correct alignment or final correction. • Emphasize on the importance of maintaining complete documentation on the cutting/welding job/task performed on the vehicle's body. • Discuss how to check whether all cutting/welding have been completed as per requirements and specifications before releasing the vehicle for the next procedure.	• Demonstrate how to park/place the vehicle on a suitable platform for performing cutting and welding activities on the vehicle body. • Employ various techniques to assess the extent of damages in the vehicle's body and report malfunctions/repairs that are beyond own scope to the concerned person. • Demonstrate how to collect, check and use the tools and equipment, for cutting and welding job. • Employ suitable techniques to use workshop tools/equipment (manual and automated) as per OEM SOPs. • Perform appropriate steps using proper techniques to remove detachable parts of the vehicle and tag removed items for repair, reuse and replacement before commencing cutting/welding activities. • Demonstrate how to cut and remove damaged/dented/welded structural panels with minimal disturbance to surrounding panels in order to prepare the body for new panel installation. • Implement different ways to properly install/replace the new panel ensuring its correct alignment with the vehicle body. • Employ appropriate welding techniques to weld new panels or panel assemblies as per OEM specifications. • Demonstrate how to dress weld seams using sanding/grinding operations and apply body seam sealers for rust prevention treatment. • Employ suitable techniques for reinstalling non-structural removed/repaired/new panels/parts (internal and external) ensuring correct alignment of the panels and components. • Implement proper waste disposal techniques for disposing scrap of damage

	parts/panels used during cutting/welding activities. • Employ proper procedure for returning leftover consumable/parts and tools/equipment to the store/person incharge and informing them about any malfunctions, if observed. • Demonstrate how to inspect the repaired body panel/part of the vehicle for proper functioning to verify proper alignment and handling.
Classroom Aids:	
Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	
PPE kit, job card, protective covers of vehicle, hand tools, welding & cutting tools and equipment, vehicle's body panels and components etc.	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
ITI	Mechanic Motor Vehicle/ Mechanic Auto Body repair/ Diesel Mechanic	4	Two/Four Wheeler Service	1	Two/Four Wheeler Service	**NA**
ITI	Mechanic Motor Vehicle/ Mechanic Auto Body repair/ Diesel Mechanic	5	Two/Four Wheeler Service	0	Two/Four Wheeler Service	**NA**
Diploma	Automobile Engineering Mechanical Engineering	3	Two/Four Wheeler Service	1	Two/Four Wheeler Service	**NA**
Diploma	Automobile Engineering Mechanical Engineering	4	Two/Four Wheeler Service	0	Two/Four Wheeler Service	**NA**
Certificate-NSQF Level-6	Four Wheeler Master Technician	3	Two/Four Wheeler Service	1	Two/Four Wheeler Service	**NA**

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role: "Automotive Body Repair Technician", QP: "ASC/Q1405", v2.0". Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: "Trainer", "MEP/Q2601, v1.0", Minimum accepted score is 80%

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
ITI	Mechanic Motor Vehicle/ Mechanic Auto Body repair/ Diesel Mechanic	5	Two/Four Wheeler Service	1	Two/Four Wheeler Service	**NA**
ITI	Mechanic Motor Vehicle/ Mechanic Auto Body repair/ Diesel Mechanic	6	Two/Four Wheeler Service	0	Two/Four Wheeler Service	**NA**
Diploma	Automobile Engineering Mechanical Engineering	4	Two/Four Wheeler Service	1	Two/Four Wheeler Service	**NA**
Diploma	Automobile Engineering Mechanical Engineering	5	Two/Four Wheeler Service	0	Two/Four Wheeler Service	**NA**
Certificate-NSQF Level-6	Four Wheeler Master Technician	4	Two/Four Wheeler Service	1	Two/Four Wheeler Service	**NA**

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role: "Automotive Body Repair Technician", QP: "ASC/Q1405", v2.0". Minimum accepted score is 80%	Recommended that the Assessor is certified for the Job Role: "Assessor" "MEP/Q2701, v1.0"

Assessment Strategy

1. Assessment System Overview:

    - Batches assigned to the assessment agencies for conducting the assessment on 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

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
PwD	Persons with Disability
OEM	Original Equipment Manufacturer