





## Certificate

### CURRICULUM COMPLIANCE TO QUALIFICATION PACK - NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

**AUTOMOTIVE SKILLS DEVELOPMENT COUNCIL**

for

**MODEL CURRICULUM**

Complying to National Occupational Standards of  
Job Role/Qualification Pack "**Auto Body Painting Technician - L3**" QP No: "**ASC/Q3303 Level 3**"

Date of Issuance: January 12th, 2017

Valid up to: January 12th, 2019\*

\*Valid up to the next review date of the Qualification Pack

  
**Authorised Signatory**  
(Automotive Skills Development Council)

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# Auto Body Painting Technician – L3

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Automotive Body Painting Technician – Level 3”, in the “Automotive” Sector/Industry and aims at building the following key competencies amongst the learner

<b>Program Name</b>	<b>Auto Body Painting Technician Level 3</b>		
<b>Qualification Pack Code</b>	ASC/Q3303		
<b>Version No.</b>	1.1	<b>Version Update Date</b>	8-02-2017
<b>Pre-requisites to Training</b>	Minimum Educational Qualifications : Class 10 Experience : 2 – 3 years		
<b>Training Outcomes</b>	<p><b>After completing this programme, participants will be able to:</b></p> <ul style="list-style-type: none"> <li> <b>Support the operator in surface preparation – Cleaning and pretreatment of body Parts</b>            Introduction to Auto Body Painting, Pre-wash process, Hot water spray process, Pre-degreasing process, Degrease dip process, Water rinse I spray process, Water rinse II dip process, Surface conditioning process, Phosphate dip process, Water rinse III spray process, Water rinse IV dip process, ED bath process, Ultra filtrate(1,2,3) process, DI spray process, Loading and unloading procedure         </li> <li> <b>Support the operator in base and top coat application</b>            Types of paints and thinners, Clean the auto body to remove dust particles , Paint preparation, Spray painting         </li> <li> <b>Support the operator in Paint mixing operations</b>            Safety aspects to be followed during painting, Note down the physical stock of the paint, thinner and other solutions, Paint mixing procedure, Maintain and transfer the paint into the different supply tank         </li> <li> <b>Move the finished goods from the production line and store</b>            Unloading of finished goods, Storage of finished goods         </li> <li> <b>Maintain a safe and healthy working environment at the workplace:</b> Types of PPEs, Personal hygiene, Hazards and Risks, Create and sustain a safe, clean and environment friendly work place, Safety procedures to be followed         </li> <li> <b>Conduct regular cleaning and maintenance of the machine:</b>            Maintenance Processes, Maintenance and cleaning techniques, Store         </li> </ul>		

	<p>the equipment in the proper condition, Clean the equipment to remove dust, moisture and waste material and Preventive maintenance of equipment</p> <ul style="list-style-type: none"><li>• <b>Maintain 5S at the work premises:</b> Ensure sorting, Streamlining and organizing, Storage and documentation, Cleaning, Standardization and sustenance across the plant and office premises of the organization</li></ul>
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This course encompasses 7 out of 7 National Occupational Standards (NOS) of “Auto Body Painting Technician – L3” Qualification Pack “ASC/Q3303” issued by “Automotive Skills Development Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p><b>Support the operator in Surface Preparation – Cleaning and Pre-treatment of auto body Parts</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 25:00</p> <p><b>Corresponding NOS Code</b> ASC/ N3305</p>	<ul style="list-style-type: none"> <li>Explain Surface preparation, cleaning and pre – treatment of auto body parts</li> <li>List the various chemicals, tools and equipment used in Surface preparation, cleaning and pre – treatment of body parts</li> <li>List and explain the defects that arise due to improper parameters maintained at each tank level</li> <li>Explain how to achieve the final product output</li> <li>Ensure the Pre-wash process</li> <li>Ensure completion of Hot water spray process</li> <li>Ensure completion of Pre-degreasing process</li> <li>Ensure completion of Degrease dip process</li> <li>Ensure Water rinse I spray process</li> <li>Ensure Water rinse II dip process</li> <li>Ensure completion of Surface Conditioning process</li> <li>Ensure completion of Phosphate dip process</li> <li>Ensure Water rinse III spray process</li> <li>Ensure Water rinse IV dip process</li> <li>Ensure completion of DM dip process</li> <li>Ensure completion of ED Bath process</li> <li>Ensure completion of Ultra Filtrate 1 , 2 and 3 processes and RCDM dip process</li> <li>Ensure Fresh DI spray process</li> <li>Ensure proper unloading of body parts</li> </ul>	<p>Laptop, White board, Marker, Projector, stationery, Car washing equipment, Industrial Water Supply (Hot and cold), Spray Guns, Degreaser, Degreasing dip tank, Water rinse dip tank, Surface conditioning disc, Phosphate solution, Phosphate dip tank, ED coating plant, DI solution, Cleaning agents, Cleaning cloth, Waste container, Dust pan, brush set, Liquid soap, Hand towel, Hoists, lifts, crane, hangars, conveyor belts, cranes, forklifts, Fire extinguisher, Respirator, Safety gloves, Safety glasses, Aprons, Ear plug, Safety shoes, First aid kit</p>
2	<p><b>Support the operator in Base and top Coat Application</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 25:00</p> <p><b>Corresponding NOS Code</b> ASC/N3306</p>	<ul style="list-style-type: none"> <li>Explain Spray painting</li> <li>Describe paints and thinners</li> <li>Explain different types of defects due to improper booth parameters</li> <li>Clean the auto body parts to remove dust particles</li> <li>Prepare paint as per requirements</li> <li>Set the paint specification as per defined requirement</li> <li>Apply paint with a spray gun</li> </ul>	<p>Laptop White board, Marker, Projector, stationary, Paint mixing equipment, Painting Booth, Paint atomizer, Bell cup, Bell cup box, Air booster compressor with accessories, Spray gun, Buffing and polishing machine, Bench vice, emery, Primer, Hardener, Thinner, Paints, Filler, Rubbing and polishing compounds, Polishing cloth, Cleaning agents, Cleaning cloth, Waste container, Dust pan, brush set, Liquid soap, Hand Towel, Hoists, lifts, crane, hangars, conveyor belts, cranes, forklifts, Fire extinguisher, Respirator, Safety gloves, Safety glasses, Aprons, Safety shoes, Ear Plug, First aid kit</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
3	<p><b>Support the operator in Paint mixing operations</b></p> <p><b>Theory Duration</b> (hh:mm) 25:00</p> <p><b>Practical Duration</b> (hh:mm) 30:00</p> <p><b>Corresponding NOS Code</b> ASC/N3307</p>	<ul style="list-style-type: none"> <li>Use correct PPE for a particular task at station</li> <li>Explain electrical hazards in the paint shop</li> <li>List the materials tools and equipment required for paint mixing</li> <li>Follow all safety aspects related to paint mixing</li> <li>Carry out the process of checking expiry date and batch no. as per the work instructions/ SOPs</li> <li>Ensure that there should be no skinning, sedimentation or paint separation in the paint container</li> <li>Carry out the process of maintaining paint mix room temperature and no use of an electrical equipment inside paint mix room</li> <li>Ensure that during suction there should be no spillage of paint and thinner on floor.</li> <li>Carry out regular check of paint viscosity till the desired viscosity obtained</li> <li>Ensure checking of earthing of equipment</li> <li>Carry out the viscosity adjustment: once the viscosity adjusted as per end customer requirement / Control Plan</li> <li>Check the final viscosity and keep it on record</li> <li>Ensure that earthing of equipment is properly done as per the instructions</li> </ul>	<p>Laptop White board, Marker, Projector, stationery, Paint mixing equipment, Primer, Hardener, Thinners, Paints, Filler, Cleaning agents, Cleaning cloth, Paint charging tank, Waste container, Dust pan, brush set, Liquid soap, Hand towel, Fire extinguisher, Respirator, Safety gloves, Safety glasses, Aprons, Safety shoes, Ear plug, First aid kit</p>
4	<p><b>Move the finished goods from the production line and store</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 25:00</p> <p><b>Corresponding NOS Code</b> ASC/N3308</p>	<ul style="list-style-type: none"> <li>Explain material handling and storage</li> <li>Choose the lifting mechanism based on the shape of the output product</li> <li>Carry out loading of work piece using lifting equipment</li> <li>Ensure that there is no damage to the lifted work pieces</li> <li>Carry the output product to the designated area using hangars, conveyor belts, cranes, forklifts etc</li> <li>Carry out post inspection process</li> <li>Carry the tagged pieces to the storage areas using manual/automatic means</li> <li>Carry out recording and documentation</li> </ul>	<p>Laptop White board, Marker, Projector, stationery, Hoists, Lifts, Crane, Hangars, Clamps, Conveyor belts, Forklifts, Finished goods, Records and documents, Fire extinguisher, Respirator, Safety gloves, Safety glasses, Aprons, Safety shoes, First aid kit</p>





Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>Maintain periodic log sheets of equipment maintenance dates, maintenance schedules and maintenance activity conducted on the equipment</li> </ul>	
7	<p><b>Maintaining 5S at the work premises</b></p> <p><b>Theory Duration</b> (hh:mm) 10:00</p> <p><b>Practical Duration</b> (hh:mm) 20:00</p> <p><b>Corresponding NOS Code</b> ASC/N0021</p>	<ul style="list-style-type: none"> <li>Explain 5S</li> <li>Explain Total quality management (TQM)</li> <li>Follow sorting process</li> <li>Explain waste disposal</li> <li>Ensure segregation hazardous and non-hazardous waste, red tag items</li> <li>Carry out waste disposal</li> <li>Ensure that areas of material storage areas are not overflowing</li> <li>Carry out stacking of boxes and containers as per size/utility</li> <li>Identify and understand visual controls, symbols, graphs etc.</li> <li>Follow the floor markings/ area markings</li> <li>Follow the proper labeling mechanism</li> <li>Identify the broken/damaged items in the respective areas</li> <li>Check for labelling of fluids, oils, lubricants, solvents, chemicals etc.</li> <li>Store tools and materials in designated area</li> <li>Check whether the safety glasses are safe and in good condition</li> <li>Ensure that the floors are swept regularly</li> <li>Ensure that the machinery are clean and in good condition</li> <li>Check whether all hoses, cabling and wires are clean, in good condition and clamped to avoid any mishap or mix up</li> <li>Ensure workbenches and work surfaces are clean and in good condition</li> <li>Follow cleaning schedule for lighting system</li> <li>Store the cleaning material and equipment in the correct location and in good condition</li> <li>Ensure self-cleanliness - clean uniform, clean shoes, clean gloves clean helmets, personal hygiene</li> <li>Follow the daily cleaning standards and schedules</li> <li>Attend all training programs for employees on 5 S</li> <li>Support the team during the audit of 5 S</li> <li>Participate actively in employee work groups on 5S</li> </ul>	<p>Laptop, White board, Marker, Projector, Fire extinguisher, Respirator, Safety gloves, Safety glasses, Aprons, Safety shoes, First aid kit, Cleaning agents, Cleaning cloth, Waste container, Dust pan, brush set, Liquid soap, Hand towel</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>Follow the guidelines as mentioned in 5S checklists</li> </ul>	
	<b>Total Duration</b>  <b>Theory Duration</b> <b>125:00</b>  <b>Practical Duration</b> <b>175:00</b>	<b>Unique Equipment Required:</b> Laptop, White board, Marker, Projector, Stationery, Automatic car washing equipment, Industrial Water Supply (Hot and cold), Spray Guns, Degreaser, Degreasing dip tank, Water rinse dip tank, Surface conditioning disc, Phosphate solution, Phosphate dip tank, ED coating plant, DI solution, Painting Booth, Paint, Paint atomizer, Bell cup, Bell cup box, Air booster compressor with accessories, Spray gun, Paint missing equipment, Buffing and polishing machine, Bench vice, Emery, Primer, Hardener, Thinner, Paints, Filler, Rubbing and polishing compounds, Polishing cloth, Cleaning agents, Cleaning cloth, Waste container, Dust pan, brush set, Liquid soap, Hand towel, Hoists, Lifts, Crane, Hangars, Conveyor belts, Cranes, Forklifts, Fire extinguisher, Respirator, Safety gloves, Safety glasses, Ear plug, Aprons, Safety shoes, First aid kit Records, Documents, Wrenches, Ratchets, Sockets, Screwdrivers, Pliers, Hammer, Mallet, LED Flashlight/Head lamp, Multimeter, Jack, Jack stands, Stacking rack, Boxes Containers, Labels, Tags	

**Grand Total Course Duration: 300Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by **Automotive Skills Development Council**)

## Trainer Prerequisites for Job role: “Auto Body Painting Technician – L3” mapped to Qualification Pack: “ASC/Q3303, Version 1.1”

Sr. No.	Area	Details
1	<b>Description</b>	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ASCQ/3303 Version 1.1”.
2	<b>Personal Attributes</b>	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well- organized and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	<b>Minimum Educational Qualifications</b>	ITI/Diploma in Mechanical Engineering from a recognized institute
4a	<b>Domain Certification</b>	Certified for Job Role: “Auto Body Painting Technician – L3” mapped to QP: “ASC/Q3303”. Minimum accepted score as per ASDC guidelines is 70%.
4b	<b>Platform Certification</b>	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/ Q0102”. Minimum accepted score as per MEPSC guidelines is 80%.
5	<b>Experience</b>	3 years of experience in automotive service industry and preferably of 2 years of experience in an auto body shop.

## Annexure: Assessment Criteria

### Criteria for assessment of Trainees

JOB ROLE	Automotive Body Painting Technician L3
Qualification Pack	ASC/Q 3303
No. Of NOS	4 Role specific ,3 generic

NOS Title/ NOS Elements	NOS & Performance Criterion Description	Marks allocation	
		Viva	Practical
<b>ASC/ N3305</b>	<b>Support the operator in cleaning &amp; Pre-treatment</b>		
<b>Ensure the Prewash process</b>	PC1. Clearly understanding the does and don'ts of the manufacturing process as defined in SOPs/ Work Instructions or defined by supervisors PC2. Carry out general check:-feed valve, drain valve must be in closed condition. PC3. Carry out bath pointage maintenance as per bath replenishment chart. PC4. Ensure correct bath make up frequency as per standard process PC5. Check for oil separator, it must be in working condition	10	25
<b>Ensure completion of Hot water spray process</b>	PC6. Check:-feed valve, drain valve must be in closed condition. PC7. Check bath pointage maintenance as per bath replenishment chart. PC8. Ensure bath make up frequency PC9. Ensure pressure difference across bag filter and then clean the bag filter	10	20
<b>Ensure completion of Pre degreasing process</b>	PC10. Check:-feed valve, drain valve must be in closed condition. PC11. Maintain bath pointage as per bath replenishment chart. PC12. Check for oil separator, it must be in working condition	5	10
<b>Ensure completion of Degrease dip process</b>	PC13. Check:-feed valve, drain valve must be in closed condition. PC14. Maintain bath pointage as per bath replenishment chart. PC15. Ensure bath make up verification as per the frequency	5	10

<b>Ensure Water rinse I spray process, Ensure Water rinse II dip process</b>	PC16. Check:-feed valve, drain valve must be in closed condition. PC17. Maintain bath pointage as per bath replenishment chart. PC18. Ensure bath make up verification as per the frequency	5	10
<b>Ensure completion of Surface Conditioning process</b>	PC19. Check:-feed valve, drain valve must be in closed condition. PC20. Maintain bath pointage as per bath replenishment chart. PC21. Ensure bath make up verification as per the frequency	5	10
<b>Ensure completion of Phosphate dip process</b>	PC22. Check:-feed valve, drain valve must be in closed condition. PC23. Maintain bath pointage as per bath replenishment chart. PC24. Ensure bath make up verification as per the frequency PC25. Check of heat exchanger temperature must be in the range	10	20
<b>Ensure Water rinse III spray process &amp; Ensure Water rinse IV dip process</b>	PC26. Check:-feed valve, drain valve must be in closed condition. PC27. Ensure bath make up frequency	5	10
<b>Ensure completion of RCDM dip process</b>	PC28. Check:-feed valve, drain valve must be in closed condition. PC29. Maintain bath pointage as per bath replenishment chart. PC30. Ensure bath make up verification as per the frequency	5	10
<b>Ensure completion of ED Bath process</b>	PC31. Check:-feed valve, drain valve must be in closed condition. PC32. Maintain bath pointage as per bath replenishment chart. PC33. Ensure bath make up verification as per the frequency	10	20
<b>Ensure completion of Ultra Filtrate 1, 2 and 3 processes and RCDM dip process</b>	PC34. Check:-feed valve, drain valve must be in closed condition. PC35. Maintain bath pointage as per bath replenishment chart. PC36. Ensure bath make up verification as per the frequency	10	20
<b>Ensure Fresh DI spray</b>	PC37. The conductivity test from dm supply line	5	10



<b>Goods</b>	<p>the mechanism to lift the output</p> <p>PC2. Clamp the product and lift the output object using suitable equipment like hoist, lifts, crane etc.</p> <p>PC3. Ensure that there is no damage to the lifted work pieces</p> <p>PC4. Carry the output product to the designated area using hangars, conveyor belts, cranes, forklifts etc.</p>	10	25
<b>Store the finished goods</b>	<p>PC5. Post inspection process, tag the right quality pieces for future identification</p> <p>PC6. Carry the tagged pieces to the storage areas using manual/ automatic means</p> <p>PC7. Keep a record of the finished goods along with the storage identification numbers for easy sorting</p>	10	15
	<b>Subtotal</b>	20	40
<b>ASC/N0008</b>	Carry out routine cleaning and maintenance activity	Viva	Practical
<b>Storing equipment in proper condition</b>	<p>PC1. Arrange all equipment in a proper order as indicated in the equipment manual</p> <p>PC2. Store equipment auxiliaries and spare parts in proper designated areas</p> <p>PC3. Clearly tag process related equipment parts/ spare parts as per part number or serial number so that sorting of equipment becomes easy</p> <p>PC4. Cover equipment so that there is limited dust collection and moisture contact</p>	15	25
<b>Regular cleaning of the equipment and work area</b>	<p>PC5. Regularly clean the equipment and process auxiliaries to remove any dust, moisture, waste material which would have got collected on the equipment</p> <p>PC6. Regularly open the equipment and clean the internal parts of the equipment</p> <p>PC7. Regularly clean the working area under the process and create a healthy, clean and safe working environment</p>	0	25
<b>Conduct regular preventive maintenance of equipment</b>	<p>PC8. Check the working of all bearing, rollers, shafts etc. and oil all moving parts of the equipment on a periodic basis</p> <p>PC9. Check the working of non-moving parts and periodically conduct preventive maintenance to prevent machine failure</p> <p>PC10. Periodically check the equipment calibration and report any errors to the maintenance teams for rectification</p>	15	20
<b>Recording observations and preparing MIS</b>	PC11. Prepare periodic log sheets of equipment maintenance dates, maintenance schedules and maintenance activity conducted on the equipment	10	10
	<b>Subtotal</b>	40	80
<b>ASC/N 0006</b>	<b>Maintain safe , healthy environment friendly workplace</b>	Viva	Practical
<b>Identify and report the</b>	PC1. Identify activities which can cause potential injury		

<b>risks identified</b>	<p>through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise</p> <p>PC2. Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc.</p> <p>PC3. Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations</p> <p>PC4. Create awareness amongst other by sharing information on the identified risks</p>	20	40
<b>Create and sustain a Safe, clean and environment friendly work place</b>	<p>PC5. Follow the instructions given on the equipment manual describing the operating process of the equipment</p> <p>PC6. Follow the Safety, Health and Environment related practices developed by the organization</p> <p>PC7. Operate the machine using the recommended Personal Protective Equipment (PPE)</p> <p>PC8. Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc.</p> <p>PC9. Maintain high standards of personal hygiene at the work place</p> <p>PC10. Ensure that the waste disposal is done in the designated area and manner as per organization SOP.</p> <p>PC11. Inform appropriately the medical officer/ HR in case of self or an employee's illness of contagious nature so that preventive actions can be planned for others</p>	50	40
	subtotal	70	80
<b>ASC / N 0021</b>	<b>Maintain 5 S activities at the workplace</b>	<b>Viva</b>	<b>practical</b>
<b>Ensure sorting</b>	<p>C1. Follow the sorting process and check that the tools, fixtures &amp; jigs that are lying on workstations are the ones in use and un-necessary items are not cluttering the workbenches or work surfaces.</p> <p>PC2. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions</p> <p>PC3. Follow the technique of waste disposal and waste storage in the proper bins as per SOP</p> <p>PC4. Segregate the items which are labelled as red tag items for the process area and keep them in the correct places</p> <p>PC5. Sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions</p>	10	20





	and encourage team members for active participation PC26. Follow the guidelines for What to do and What not to do to build sustainability in 5S as mentioned in the 5S check lists/ work instructions		
	<b>Sub total</b>	<b>50</b>	<b>120</b>
	<b>Total</b>	<b>270</b>	<b>570</b>