

# DEBRA THANA SAHID KSHUDIRAM SMRITI MAHAVIDYALAYA

Re-accredited by NAAC with grade 'A' (2<sup>nd</sup> cycle)

Debra, Paschim Medinipur, West Bengal, India, 721124



**Skill India**  
कौशल भारत - कुशल भारत



**N.S.D.C**  
National  
Skill Development  
Corporation

## Course

**Certificate course in Automotive service technician  
(Two and Three wheelers)**

**Duration: 1 Year**

**Eligibility: Higher Secondary**

**Total No. of Seats: 30**

# Model Curriculum

## Automotive service technician (Two and Three wheelers)

**SECTOR: AUTOMOTIVE**  
**SUB-SECTOR: AUTOMOTIVE VEHICLE SERVICE**  
**OCCUPATION: TECHNICAL SERVICE & REPAIR**  
**REF ID: ASC/Q1411**  
**NSQF LEVEL: 4**



## 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: 'Automotive Service Technician(Two and Three Wheelers)' QP No. 'ASC/Q 1411 NSQF Level 4'

Date of Issuance: April 9<sup>th</sup>, 2016  
Valid up to\*: April 10<sup>th</sup>, 2018

\*Valid up to the next review date of the Qualification Pack or the  
\*Valid up to' date mentioned above (whichever is earlier)



**Sunil K. Chaturvedi**  
Chief Executive Officer, ASDC

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# Automotive Service Technician (2 & 3 wheelers)

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Automotive Service Technician (2 & 3 wheelers)”, in the “Automotive” Sector/Industry and aims at building the following key competencies amongst the learner

<b>Program Name</b>	<b>Automotive Service Technician ( 2 &amp; 3 Wheelers)</b>		
<b>Qualification Pack Code</b>	ACS/Q1411		
<b>Version No.</b>	1.0	<b>Version Update on</b>	7-03-2017
<b>Pre-requisites to Training</b>	10th Standard passed		
<b>Training Outcomes</b>	<p>After completing this programme, participants will be able to :-</p> <ul style="list-style-type: none"> <li>• <b>Carry out routine service and minor repairs of Vehicles and aggregates of two and three wheelers</b> understand auto component specifications , correctly use workshop tools, assess need of repairs and understand contents of service manuals</li> <li>• <b>Plan and organize work to meet expected out comes</b>, plan &amp; understand work content and output required in a given time, maintain set quality standards, identify and manage organizational resources efficiently and effectively.</li> <li>• <b>Work Effectively in a Team</b>:-know and follow organizational policies and procedures for working with colleagues.</li> <li>• <b>Maintain a healthy, safe and secure working environment</b>: - know prevailing environmental norms, government policies, and work to eliminate common breaches in health &amp; safety.</li> </ul>		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “Auto Service Technician (2&3 Wheelers)” Qualification Pack issued by “Automotive”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p><b>Introduction</b></p> <p><b>Theory Duration</b> (hh:mm) 05:00</p> <p><b>Corresponding NOS Code</b> ASC/Q 1411</p>	<ul style="list-style-type: none"> <li>• Knowledge of two and three wheeler Industry</li> <li>• Description of different types of automobiles</li> <li>• Explanation of service process of automobile work shop</li> <li>• Responsibilities of service technician &amp; customer expectations</li> </ul>	Whiteboard/ Markers, Computer, Projector, screen
2	<p><b>Carry out repair and routine servicing and maintenance (including electrical and mechanical aggregates) of vehicles (two and three wheelers)</b></p> <p><b>Theory Duration</b> (hh:mm) 110:00</p> <p><b>Practical Duration</b> (hh:mm) 180:00</p> <p><b>Corresponding NOS Code</b> ASC/N 1420</p>	<p>At the end of the module the learner should be able to</p> <ul style="list-style-type: none"> <li>• Understand and know basic technology &amp; functioning of various components &amp; component system of the vehicle including <ul style="list-style-type: none"> <li>- Engine &amp; fuel system</li> <li>- Emission &amp; exhaust system</li> <li>- Gear box &amp; clutch assembly</li> <li>- Brake, steering &amp; suspension system</li> <li>- Electrical and ignition system</li> </ul> </li> <li>• Should know the auto component manufactures specifications related to the various components/ aggregates in the vehicle.</li> <li>• Operate various tools and equipment required for vehicle diagnostic and repair</li> <li>• Diagnose the defect and performance issues in various component / subassemblies of the vehicle and use correct terminology for defects</li> <li>• Analyse customer complaints, find root cause and rectify the same</li> <li>• Carry out repair job of major aggregates and sub assemblies of the vehicle</li> <li>• Carry out routine servicing and maintenance requirements of the vehicles</li> <li>• Prepare job card having information of the customer, vehicle and repair requirement.</li> <li>• Prepare document based on the action taken for the complaint registered in the job card.</li> <li>• Refer and understand a typical service manual to practice the procedures for key service tasks, locate consumables &amp; spare part specifications / number</li> </ul>	Whiteboard/ Markers, Computer, Projector, screen Image Recognition tools, master samples, exhibits, Pneumatic Tools, Hand tools, Torque Wrenches, Vernier calliper, Micrometer, Multi Meter, Pullers, Sliding Hammer, Hydro Meter, Bench Grinder, Air Compressor, Battery Charging cum tester, Parts Washing Station, Emission gas analyser, Oil measure cans (1 ltr & 1/2 ltr), Oil collection tray, Ramp, personal protective equipments, Fire extinguisher, two and three wheeler, engine and gear box cut sections, wiring diagrams, typical component of electrical and mechanical aggregates, Service Manual samples & formats of job card
3	<p><b>Plan and organize work to meet expected outcomes</b></p>	At the end of the module the learner should be able	Whiteboard/ Markers, Computer, Projector, scr

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	<p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 30:00</p> <p><b>Corresponding NOS Code</b> ASC/N001</p>	<p>to</p> <ul style="list-style-type: none"> <li>• Perform the job within given time as per quality standards/work schedule</li> <li>• Identify and manage resource and use it efficiently and effectively</li> <li>• Perform in accordance with the organisational policies and procedures</li> <li>• Manage his/her time effectively at work</li> <li>• Apply best practices to keep workplace clean</li> <li>• Acquire knowledge and understanding required for planning &amp; organising.</li> </ul>	<p>een typical 5 S literature</p>
4	<p><b>Work effectively in a team</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 35:00</p> <p><b>Corresponding NOS Code</b> ASC/N 0002</p>	<p>At the end of the module the learner should be able to</p> <ul style="list-style-type: none"> <li>• Interact &amp; communicate effectively with colleagues including members in the own group as well as other groups</li> <li>• Use all forms of verbal and non-verbal methods to communicate clearly and effectively with colleagues, supervisors, customers and other stakeholders</li> <li>• Judge customers' body language and use an appropriate approach to deal with them</li> <li>• Apply the best practices for grooming to look presentable and make good impression on customers</li> <li>• Use proper personal etiquettes at workplace</li> <li>• Acquire knowledge and understanding required for team working</li> </ul>	<p>Whiteboard/ Markers, Computer, Projector, screen, case studies</p>
5	<p><b>Maintain a Healthy, Safe and Secure working environment</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 30:00</p> <p><b>Corresponding NOS Code</b> ASC/N0003</p>	<ul style="list-style-type: none"> <li>• Perform as per organisation policies &amp; procedures to maintain a safe, secure working environment</li> <li>• Maintain safe &amp; secure workplace</li> <li>• Use best practice to remove potential hazards at workplace and prevent accidents</li> <li>• Apply appropriate strategies to deal with emergencies and accidents at workplace</li> <li>• Apply relevant norms to the vehicles and spare parts to ensure no damage to the environment</li> </ul>	<p>Whiteboard/ Markers, Computer, Projector, Fire extinguisher, First aid, BS IV-VI and disposal of hazardous items and parts to provide an overview</p>
	<p><b>Total Duration</b></p> <p><b>Theory Duration</b></p>	<p><b>Unique Equipment Required:</b> Whiteboard/ Markers, Computer, Projector, Image Recognition tools, first aid kit, master samples, exhibits, Pneumatic Tools, Hand tools,</p>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	<p><b>175:00</b></p> <p><b>Practical Duration</b></p> <p><b>275:00</b></p>	<p>Torque Wrenches, Vernier calliper, Micrometre, MultiMeter, Pullers, Sliding Hammer, Hydro Meter,,Bench Grinder, Air Compressor, Battery Charging cum tester,Parts Washing Station, Emission gas analyser, Oil measure cans(1 ltr &amp; 1/2 ltr), Oil collection tray, Ramp, personal protective equipment, two and three wheeler of different types (2 and 4 strokes), petrol and diesel models , service manuals , engine and gear box cut sections, wiring diagrams, typical component of electrical and machanical aggregates, Rings and double ended spanner sets, screw driver sets, plier sets, spark plug spanners, compressor gauge, digital tachometer, feeler gauge and work benches.</p>	

Grand Total Course Duration: 450Hours, 0 Minutes

(This syllabus/ curriculum has been approved by [Automotive Skill Council of India](#))



## Trainer Prerequisites for Job role: “Service Technician 2 & 3 wheelers” mapped to Qualification Pack: “ASC/Q1411, v1.0”

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 “ASC/Q1411”.
2	<b>Personal Attributes</b>	<ul style="list-style-type: none"> <li>• Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training.</li> <li>• Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused.</li> <li>• Eager to learn and keep oneself abreast of the latest developments and newer technologies used in the various systems of the vehicle and its aggregates is highly desirable.</li> <li>• Should be able to demonstrate the usage of workshop equipment, instruments, special instruments and tools.</li> <li>• Should have sharp diagnostic abilities for identifying reasons of problems in vehicles and troubleshoot.</li> <li>• Should be hands-on with servicing of vehicles to provide experiential training.</li> </ul>
3	<b>Minimum Educational Qualifications</b>	ITI/ Diploma /Engineer (mechanical engineering) from a recognized institute
4a	<b>Domain Certification</b>	Certified for Job Role: “Trainer Service Technician” mapped to QP: ASC/Q1414. Minimum qualifying score-80 %, as per ASDC guidelines.
4b	<b>Platform Certification</b>	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/1402”. Minimum qualifying score-80%, as per ASDC guidelines.
5	<b>Experience</b>	<ul style="list-style-type: none"> <li>▪ Minimum 3 years of experience in Automotive Service Industry for ITI</li> <li>▪ Minimum 2 years of experience in Automotive Service Industry for Diploma/ Engineer (mechanical engineering)</li> <li>▪ Working experience on latest tools and equipments used for vehicle servicing</li> </ul>

### Annexure: Assessment Criteria

<b>Assessment Criteria</b>	
<b>Job Role</b>	<b>Service Technician 2 &amp; 3 Wheelers</b>
<b>Qualification Pack</b>	<b>ASC/Q1411, v1.0</b>
<b>Sector Skill Council</b>	<b>Automotive</b>

<b>Sr. No.</b>	<b>Guidelines for Assessment</b>
1	Assessment to be conducted by ASDC as per competency output defined in the NOS/QP and the assessment criteria provided in the NOS/QP
2	Assessment to be carried out by a third party Assessment Body duly affiliated to the SSC.
3	ASDC assessments will be comprehensive and cover all aspects of acquired knowledge, Practical skills and also basic ability to communicate. Accordingly, evaluation process would include: <ol style="list-style-type: none"> <li>i. Theory/Knowledge test</li> <li>ii. Practical demonstration test</li> <li>iii. Face to Face Viva-Voce</li> </ol>
4	Theory/Knowledge assessment will be carried out on line through link provided for each assessment that generates a random paper from a bank of questions available at the back end. <ul style="list-style-type: none"> <li>- Exception to an online test in favour of Paper Test would be subject to non-availability of requisite broad band and/or hardware.</li> <li>- On line test would be conducted in the presence of an ASDC assessor till web enabled proctoring is deployed.</li> </ul>
5	ASDC assessor would be conducting Practical and Viva as per the criteria provided in the NOS/QP.
6	Cut off criteria for certification (Marks obtained in %): 80 %

Assessable Outcomes	Assessment Criteria	Total Marks	Out of	Theory	Practical Skills
ASC/N1420 Carry out routine servicing and minor repairs of aggregates of two and three wheelers	PC1.understand the auto component manufacturer specifications related to the various components/ aggregates in the two/ three wheeler vehicle	200	5		5
	PC2.follow standard operating procedures for using workshop tools and equipment for service and minor aggregate repairs in the two/ three wheeler vehicle		5		5
	PC3.conduct test drives/ rides to assess need for repairs, calibration or any other adjustments in the electrical/ mechanical aggregates in the two/ three wheeler vehicle		15		15
	PC4.review the job card and understand work to be carried out		5		5
	PC5.ensure OEM recommended procedure and checklist is followed for routine servicing in case of non-routine service or repair, confirm tasks to be carried out with superior		5		5
	PC6. calibrate, align and adjust settings, alignment, pressures, tension, speeds and levels relevant to : engine and aggregates; transmission system, chassis, electrical and electronic components; Scooter (two stroke engine), Scooter (four stroke engine), Motor cycle (two stroke engine), Motor cycle (four stroke engine), Disc & drum brakes system; other components (including to valves, ignition, fuel and emissions; transmission, lights, tyres, steering and body fittings)		20		20
	PC7.ensure that for routine maintenance and service, the correct spare parts and appropriate grade of lubricants, coolant, oils and grease required have been obtained		10		10
	PC8.ensure all dismantled components (including mechanical and electrical aggregates) are cleaned and conditioned prior to reassembly following the procedures in the OEM Manual		10		10
	PC9. identify and change components effected due to continuous use & wear and tear e.g. air filters; belts, wiper blades, brake linings and pads		20		20
	PC10.ensure disposal of materials (including waste oil, scrap of failed parts/ aggregates) in accordance with the organisation’s policies		5		5
	PC11.understand the various precautions to be taken to avoid damage to the vehicle and its components while working on other aggregates		5		5

	PC12.record all service and repairs carried out and ensure completeness of tasks assigned before releasing vehicle for the next procedure		5		5
	PC13.ensure all workshop tools, equipment and workstations are adequately maintained by carrying out scheduled checks, calibration and timely repairs where necessary		5		5
	PC14.ensure any malfunctioning observed in tools and equipment are reported to the concerned persons		5		5
	PC15.ensure any other repair requirements observed in the components/ aggregates systems (like engine, gear box etc.) while repairing/ overhauling of braking systems are reported to senior advisor for further inspection by other specialists		5		5
	PC16. measure/ inspect the machining or any other repair done from an outside source/ local machining garages		5		5
	PC17.utilise any computer-based applications relevant to service and repairs		5		5
	PC18.ensure that trainings organized by the OEM from time-to-time are attended and knowledge levels are upgraded (esp. in case of newly launched products, product refreshes)		5		5
	All KA, KB for the NOS			<b>60</b>	
		<b>Total</b>	<b>200</b>	<b>60</b>	<b>140</b>
ASC/N0001 Plan and organise work to meet expected outcomes	PC1.keep immediate work area clean and tidy	100	7		7
	PC2.treat confidential information as per the organisation's guidelines		8		8
	PC3.work in line with organisation's policies and procedures		8		8
	PC4.work within the limits of job role		8		8
	PC5.obtain guidance from appropriate people, where necessary		8		8
	PC6.ensure work meets the agreed requirements		7		7
	PC7.establish and agree on work requirements with appropriate people		9		9
	PC8.manage time, materials and cost effectively		8		8
	PC9. use resources efficiently with minimal wastage		7		7
	All KA, KB for the NOS			30	
		<b>Total</b>	<b>100</b>	<b>30</b>	<b>70</b>
ASC/N0002 Work effectively in a team	PC1.maintain clear communication with colleagues (by all means including face-to-face, telephonic as well as written)	100	9		9
	PC2.work with colleagues to integrate work		8		8

	PC3.pass on information to colleagues in line with organisational requirements both through verbal as well as non-verbal means		9		9
	PC4.work in ways that show respect for colleagues		8		8
	PC5.carry out commitments made to colleagues		9		9
	PC6.let colleagues know in good time if cannot carry out commitments, explaining the reasons		9		9
	PC7.identify problems in working with colleagues and take the initiative to solve these problems		9		9
	PC8.follow the organisation's policies and procedures for working with colleagues		9		9
	All KA, KB for the NOS			30	
		<b>Total</b>	<b>100</b>	<b>30</b>	<b>70</b>
ASC/N0003 Maintain a healthy, safe and secure working environment	PC1.comply with organisation's current health, safety and security policies and procedures	100	9		9
	PC2.report any identified breaches in health, safety, and security policies and procedures to the designated person		9		9
	PC3. coordinate with other resources at the workplace to achieve healthy, safe and secure environment for all incorporating government norms esp. for emergency situations like fires, earthquakes etc.		9		9
	PC4. identify and correct any hazards like illness, accidents, fires or any other natural calamity within the limits of individual's authority		9		9
	PC5.report any hazards outside the individual's authority to the relevant person in line with organisational procedures and warn other people who may be affected		9		9
	PC6.follow organisation's emergency procedures for accidents, fires or any other natural calamity		8		8
	PC7.identify and recommend opportunities for improving health, safety, and security to the designated person		8		8
	PC8. complete health and safety records , ensure procedures are well defined		9		9
	All KA, KB for the NOS			30	
		<b>Total</b>	<b>100</b>	<b>30</b>	<b>70</b>