







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: Valid up to*: April 9th, 2016 April 10th, 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

Wilhelm









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Automotive Service Technician (2& 3 wheelers)

CURRICULUM / SYLLABUS

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

Program Name	Automotive Service Technician (2 & 3 Wheelers)				
Qualification Pack Code	ACS/Q1411				
Version No.	1.0 Version Update on 7-03-2017				
Pre-requisites to Training	10th Standard passed				
Training Outcomes	After completing this	programme, participants wi	ill be able to :-		
	Carry out re	outine service and minor r	repairs of Vehicles and		
	aggregates	of two and three whe	elers understand auto		
	component specifications, correctly use workshop tools, assess				
	need of repairs and understand contents of service manuals				
	Plan and or	ganize work to meet expec	ted out comes, plan &		
	understand w	vork content and output rec	quired in a given time,		
	maintain set o	quality standards, identify an	d manage organizational		
	resources effi	ciently and effectively.			
	Work Effect	tively in a Team:-know an	nd follow organizational		
	policies and procedures for working with colleagues.				
	Maintain a healthy, safe and secure working environment: -				
	know prevailing environmental norms, government policies, and				
	work to elimi	nate common breaches in hea	alth &safety.		









This course encompasses $\underline{4}$ out of $\underline{4}$ National Occupational Standards (NOS) of "<u>Auto Service Technician (2&3 Wheelers</u>" Qualification Pack issued by "<u>Automotive</u>".

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction Theory Duration (hh:mm) 05:00 Corresponding NOS Code ASC/Q 1411	 Knowledge of two and three wheelerIndustry Description of different types of automobiles Explaination of service process of automobile work shop Responsibilities of service technician & customer expectations 	Whiteboard/ Markers, Computer, Projector, screen
2	Carry out repair and routine servicing and maintenance (including electrical and mechanical aggregates) of vehicles (two and three wheelers) Theory Duration (hh:mm) 110:00 Practical Duration (hh:mm) 180:00 Corresponding NOS Code ASC/N 1420	 At the end of the module the learner should be able to Understand and know basic technology & functioning of various components & component system of the vehicle including Engine & fuel system Emission & exhaust system Gear box & clutch assembly Brake, steering & suspension system Should know the auto component manufactures specifications related to the various components/ aggregates in the vehicle. Operate various tools and equipmentrequir ed for vehicle diagnostic and repair Diagnose the defect and performanceissues in various component / subassemblies of the vehicleand use correct terminology for defects Analyse customer complaints, find root cause and rectify the same Carryout repair job of major aggregates and sub assemblies of the vehicle Carryout routine servicing andmaintenance requirements of thevehicles Prepare job card having information of the customer, vehicle and repair reuirement. Prepare document based on the action taken for the complaint registered in the job card. Refer and understand a typical service manual to practice the procedures for key service tasks, locate consumables & spare part specifications / number 	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	Plan and organize work to meet expected outcomes	At the end of the module the learner should be able	Whiteboard/ Markers, Computer, Projector,scr









Sr. No.	Module	Key Learning Outcomes	Equipment Required	
1.00	Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 30:00 Corresponding NOS Code ASC/N001	 Perform the job within given time as per quality standards/work schedule Identify and manage resource and use it efficiently and effectively Perform in accordance with the organisational policies and procedures Manage his/her time effectively at work Apply best practices to keep workplace clean Acquire knowledge and understanding required for planning & organising. 	een typical 5 S literature	
4	Work effectively in a team Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 35:00 Corresponding NOS Code ASC/N 0002	At the end of the module the learner should be able to Interact & communicate effectively with colleagues including members in the owngro up as well as other groups Use all forms of verbal and non- verbalmethods to communicate clearly andef fectively with colleagues, supervisors, customers and other stakeholders Judge customers' body language and use an appropriate approach todeal with them Apply the best practices for grooming toloo k presentable and make good impression on customers Use proper personal etiquettes at workplace Acquire knowledge and understanding required for team working	Whiteboard/ Markers, Computer, Projector, screen,case studies	
5	Maintain a Healthy, Safe and Secure working environment Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 30:00 Corresponding NOS Code ASC/N0003	 Perform as per organisation policies & procedures tomaintain a safe, secure working environment Maintain safe & secure workplace Use best practice to remove potential hazardsat workplace and prevent accidents Apply appropriate strategies to deal with emergencies and accidents at workplace Apply relevant norms to the vehicles and spare parts to ensure no damage to the environment 	Whiteboard/ Markers, Computer, Projector, Fire extinguisher, First aid, , BS IV-VI and disposal of hazardous items and parts to provide an overview	
	Total Duration	Unique Equipment Required: Whiteboard/ Markers, Computer, Projector, Image	•	
	Theory Duration first aidkit, master samples, exhibits, Pneumatic Tools, Hand tools,			









Sr. No.	Module	Key Learning Outcomes	Equipment Required	
	175:00	Torque Wrenches, Vernier calliper, Micrometre, Mult	iMeter, Pullers,	
		Sliding Hammer,		
	Practical Duration	Hydro Meter,,Bench Grinder, Air Compressor, Battery Charging cum test		
	275:00	er,Parts Washing Station, Emission gas analyser, Oil measure cans(1 ltr & 1/2 lt		
		r), Oil collection tray, Ramp, personal protective equipment, two and three		
		wheeler of different types (2 and 4 strokes), petrol and disel models, service		
		manuals, engine and gear box cut sections, wiring diagr		
		of electrical and machanical aggregates, Rings and double ended spanner sets,		
		screw driver sets, plier sets, spark plug spanners, compressor gauge, digital		
		techometer, feeler gauge and work beches.		

Grand Total Course Duration: 450Hours, 0 Minutes

(This syllabus/ curriculum has been approved by <u>Automotive Skill Council of India</u>)









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

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "ASC/Q1411".
2	Personal Attributes	 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-organised and focused. 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. Should be able to demonstrate the usage of workshop equipment, instruments, special instruments and tools. Should have sharp diagnostic abilities for identifying reasons of problems in vehicles and troubleshoot. Should be hands-on with servicing of vehicles to provide experiential training.
3	Minimum Educational Qualifications	ITI/ Diploma /Engineer (mechanical engineering) from a recognized institute
4a	Domain Certification	Certified for Job Role: "Trainer Service Technician" mapped to QP: ASC/Q1414. Minimum qualifying score-80 %, as per ASDC guidelines.
4b	Platform Certification	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	Experience	 Minimum 3 years of experience in Automotive Service Industry for ITI Minimum 2 years of experience in Automotive Service Industry for Diploma/ Engineer (mechanical engineering) Working experience on latest tools and equipments used for vehicle servicing









Annexure: Assessment Criteria

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

Sr. No.	Guidelines for Assessment
1	Assessment to be conducted by ASDC as per competency output defined in the NOS/QP and theas
	sessment 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:
	i. Theory/Knowledge test
	ii. Practical demonstration test
	iii. Face to Face Viva-Voce
4	Theory/Knowledge assessment will be carried out on line throughalink provided for
	eachassessment that generates a random paper from a bank of questions available at the back end.
	- Exception to an online test in favour of Paper Test would be subject to non-
	availability of requisitebroad band and/or hardware.
	-
	On line test would be conducted in the presence of an ASDC assessor till web enabled proctoringi
	s deployed.
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	PC1.understand the auto component manufacturer specifications related to the various components/ aggregates in the two/ three wheeler vehicle		5		5	
minor repairs of aggregates of two and three	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	
wheelers	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)	200	200	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	









	PC2.work with colleagues to integrate work		8		8
effectively in a team	(by all means including face-to-face, telephonic as well as written)	100	9		9
ASC/N0002 Work	PC1.maintain clear communication with colleagues	iotai	100	30	70
	All NA, NO TOT THE INOS	Total	100	30	70
	All KA, KB for the NOS		/	30	/
	PC8.manage time, materials and cost effectively PC9. use resources efficiently with minimal wastage		8 7		8
	appropriate people		0		0
	PC7.establish and agree on work requirements with		9		9
	PC6.ensure work meets the agreed requirements		7		7
	where necessary				8
	PC5.obtain guidance from appropriate people,	100	8		
	PC4.work within the limits of job role		8		8
expected outcomes	PC3.work in line with organisation's policies and procedures		8		8
and organise work to meet	PC2.treat confidential information as per the organisation's guidelines		8		8
ASC/N0001 Plan	PC1.keep immediate work area clean and tidy		7		7
		Total	200	60	140
	All KA, KB for the NOS			60	
	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
	PC17.utilise any computer-based applications relevant to service and repairs		5		5
	PC16. measure/ inspect the machining or any other repair done from an outside source/ local machining garages		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
	PC14.ensure any malfunctioning observed in tools and equipment are reported to the concerned persons		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
	PC12.record all service and repairs carried out and ensure completeness of tasks assigned before releasing vehicle for the next procedure		5		5









	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	
		Total	100	30	70
ASC/N0003 Maintain a	PC1.comply with organisation's current health, safety and security policies and procedures		9		9
healthy, safe and secure working environment	PC2.report any identified breaches in health, safety, and security policies and procedures to the designated person	100	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	
		Total	100	30	70