Model Curriculum

QP Name: Two/Three-Wheeler Mechanic (Including LPG & CNG)

QP Code: STC-AUT/2024/0413

QP Version: 1.0

NSQF Level: 3

Model Curriculum Version: 1.0

West Bengal State Council of Technical & Vocational Education and Skill Development, Karigari Bhavan, (5th Floor), Plot-B/7, Action Area-III, New Town, Kolkata-700160

Table of Contents

Training Parameters

Sector	Automotive
Sub-Sector	Automobile Vehicle Service
Occupation	Two/Three-Wheeler Mechanic (Including LPG & CNG)
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3115.0601,7231.0500,7231.0501
Minimum Educational Qualification and Experience	1.Grade 10 OR 2. 8th grade pass with 2 years relevant experience OR 3. Previous relevant Qualification of NSQF Level 2.5 with 1.5 year relevant experience
Pre-Requisite License or Training	
Minimum Job Entry Age	18 Years
Last Reviewed On	17.12.2024
Next Review Date	16.12.2027
Version	1.0
NSQC Approval Date	17.12.2024
Model Curriculum Creation Date	17.12.2024
Model Curriculum Valid Upto Date	16.12.2027
Model Curriculum Version	1.0
Minimum Duration of the Course	360 hours
Maximum Duration of the Course	360 hours

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the participants will be able to:

- Apply safe working practices.
- Identify different types of two/three-wheeler and their configuration
- Identify and explain the key features of two and three-wheeler engines
- Identify hand tools, measuring tools and their uses.
- Troubleshoot any fault of engine system, fuel feed system and transmission system.
- Troubleshoot and repair the fault of brake and wheel, ignition system, electric system.
- Repair parts like fork, suspension system, steering column, mud guard, lubrication system.
- Work in real job situation with special emphasis on basic safety and hazards in this domain.

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
AUT/0413/OC1 Apply Safe Working Practices **NOS Version No.: 1.0** **NSQF Level: 3**	**10:00 Hours**	**20:00 Hours**	**00:00Hours**	**00:00Hours**	**30:00 Hours**
Module1: Occupational Safety hazard at workplace	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
AUT/0413/OC2 Identify different types of Two/Three wheeler and their configuration **NOS Version No. :1.0** **NSQF Level:3**	**10:00 Hours**	**20:00 Hours**	**00:00Hours**	**00:00Hours**	**30:00 Hours**
Module 2: Different Types of Two and Three wheeler	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
AUT/0413/OC3 Identify and explain the key features of two and three-wheeler engines **NOS Version No.:1.0** **NSQF Level: 3**	**10:00 Hours**	**20:00 Hours**	**00:00Hours**	**00:00Hours**	**30:00 Hours**

Module3: Features of Two and Three wheeler engines	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
AUT/0413/OC4 Identify hand tools, measuring tools and their uses. NOS Version No.:1.0 NSQF Level:3	**10:00 Hours**	**20:00 Hours**	**00:00Hours**	**00:00Hours**	**30:00 Hours**
Module 4: Hand tools & measuring tools	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
AUT/0413/OC5 Troubleshoot any fault of engine system, fuel feed system and transmission system. NOS Version No.:1.0 NSQF Level: 3	**20:00 Hours**	**40:00 Hours**	**00:00Hours**	**00:00Hours**	**60:00 Hours**
Module 5: Troubleshoot fault of engine system, fuel feed system and transmission system	20:00 Hours	40:00 Hours	00:00Hours	00:00Hours	60:00 Hours
AUT/0413/OC6 Troubleshoot and repair the fault of brake and wheel, ignition system, electric system. NOS Version No.: 1.0 NSQF Level: 3	**20:00 Hours**	**40:00 Hours**	**00:00Hours**	**00:00Hours**	**60:00 Hours**
Module 6: Troubleshoot and repair fault of brake and wheel, ignition system, electric system.	20:00 Hours	40:00 Hours	00:00Hours	00:00Hours	60:00 Hours
AUT/0413/OC7 Repair parts like fork, suspension system, steering column, mud guard, lubrication system. NOS Version No.:1.0 NSQF Level: 3	**10:00 Hours**	**20:00 Hours**	**00:00Hours**	**00:00Hours**	**30:00 Hours**
Module 7: Troubleshoot and repair parts like fork, suspension system, steering column, mud guard and lubrication system.	10:00 Hours	20:00 Hours	00:00Hours	00:00Hours	30:00 Hours
AUT/0413/OC8 Work in real job situation with special emphasis on basic safety and hazards in	**00:00 Hours**	**00:00 Hours**	**60:00Hours**	**00:00Hours**	**60:00 Hours**

this domain. **NOS Version No.: 1.0** **NSQF Level: 3**					
Module 8: OJT.	00:00 Hours	00.00 Hours	60:00Hours	00:00Hours	60:00 Hours
DGT/VSQ/N0101 Employability Skills **NOS Version No.: 1.0** **NSQF Level: 3**	**30:00 Hours**	**00:00 Hours**	**00:00Hours**	**00:00Hours**	**30:00 Hours**
Module 9: Employability Skills	30:00 Hours	00:00 Hours	00:00Hours	00:00Hours	30:00 Hours
Total Duration	**120:00 Hours**	**180:00 Hours**	**60:00Hours**	**00:00Hours**	**360:00 Hours**

Module Details

Module1: Occupational Safety hazard at workplace

Mapped to AUT/0413/OC1

Terminal Outcomes:

- Apply and maintain Safe Working Practices
- Recognize any unsafe situations according to site policy.
- Identify fire and safety and fire hazards
- Identify different fire extinguishers and use them as per requirements.
- Perform bubble test for LPG leakage in 3-wheeler.
- Identify CNG leakage by sniffing in Two - Three wheeler.
- Follow basic pollution control measure used in automobile shop surroundings.

Duration: *10:00*	**Duration**: *20:00*
Theory–Key Learning Outcomes	**Practical–Key Learning Outcomes**
• Maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements according to site policy. • Recognize any unsafe situations according to site policy, and assess his report accordingly. • Identify and take necessary precautions on fire and safety hazards and report according to site policy and procedures. • Difference between BS & Euro norms. • Basic knowledge about Road Transport & Traffic rules.	• Recognize any unsafe situations according to site policy, and assess his report accordingly. • Demonstrate Personal Productive Equipment (PPE) like: safety helmet, safety glove, safety shoe, use the same as per related working environment. • Demonstrate basic first aid & CPR and use them under different circumstances. • Identify different fire extinguishers and use the same as per requirement in a mock drill. • Perform bubble test for LPG leakage in two three wheeler. • Identify CNG leakage by sniffing in two three wheeler • Identify the differences of BS I, II, III, IV, VI • Preventive maintenance on selective parts.
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements:	
First Aid box, Different types of fire extinguishers, PPE kits, Safety charts, Allen Key set, Caliper inside, Calipers outside, Center Punch, Dividers, Hands file, Electrician Screw Driver, Ball peen hammer, Philips Screw Driver set, Screw driver, Working scooter/motor cycle, Working model of MPFI of auto rickshaw.	

Module 2: Different Types of Two and Three wheeler

Mapped to AUT/0413/OC2

Terminal Outcomes:

- State the basic differences between two wheelers: types of motorcycles, scooter.
- Comprehend the engine configurations with various transmission systems
- Define the uses of various parts of two/three wheeler
- Identify different parts of alternative fuel feed system
- Identify different frame and body of two and three wheelers

Duration: *10:00*	**Duration**: *20:00*
Theory–Key Learning Outcomes	**Practical–Key Learning Outcomes**
• Knowledge on different parts of two-wheeler • Differences between motorcycles, scooters, auto rickshaw • Define the functions of different parts of three-wheeler • Functions of main parts of an Internal combustion engine- SI engine, CI engine, LPG and CNG dual fuel engine. • Identify different body structures of two and three-wheeler (layout only) • Safety and regulatory standards	• Identify different parts of two-wheeler and three wheeler • Distinguish the difference between motorcycles, scooters with their main parts • Distinguish the difference between loading auto rickshaws: passenger vehicle, delivery vehicle, pickup vehicle, tipper vehicle with their main parts • Locate the different parts and application in the 2/3 wheelers • Identify different frame of two and three-wheeler Recognize the Tubular Frame, Engine Based Frame, Twin-Spar Frame, Monocoque Frame
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Screw driver, Scriber, Spanner D.E. set of 12 pieces, Spanner, ring set of 12 metric sizes, Spanners socket with speed handle, T-bar, ratchet and universal, Wire cutter and stripper, Adjustable spanner (pipe wrench), Ammeter, Auto Electrical test bench, working scooter/motor cycle, Working model of MPFI of auto rickshaw	

Module 3: Features of Two and Three-wheeler engines

Mapped to AUT/0413/OC3

Terminal Outcomes:

- Identify the four stroke and narrate the working principle of four stroke engine
- Differentiate two stroke and four stroke engines
- Identify different engine components like cylinders, pistons, crankshafts and their role in engine functionality
- Identify the difference four stroke LPG and four stroke NG and four stroke petrol engines

Duration:*10:00*	**Duration:*20:00***
Theory–Key Learning Outcomes	**Practical–Key Learning Outcomes**
• Difference between two stroke and four stroke engines • Working principle of four stroke engine • Arrangements of Cylinders - single cylinder, Inline (2, 3 ,4 cylinder) • Introduction to valve operating mechanism and cranking system • Exhaust System of Two/three Wheelers, Exhaust Pipe and Header • Difference between four stroke LPG. Four stroke CNG and four stroke Petrol Engine	• Identify the working of two stroke and four stroke engines • Describe working principle of two stroke and four stroke engines. • Identify the different mechanism of (Valve and cranking system) of an engine. • Identify the cylinders arrangement of various engine types. • Identify the different components of exhaust system of two/three wheelers • Recognize the difference between Fuel Delivery System, LPG/ CNG tank, Pressure regulator, gas filters, injectors
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Working scooter/motor cycle Working model of MPFI of auto rickshaw, Allen Key set, Caliper inside, Calipers outside, Center Punch, Dividers, Hands file, Electrician Screw Driver, Ball peen hammer, Philips Screw Driver set, Screw driver, Spanner D.E. set of 12 pieces, Adjustable spanner (pipe wrench)	

Module 4: Hand tools & Measuring tools

Mapped to AUT/0413/OC4

Terminal Outcomes:

- Recognize the hand tools used for repairing Two /Three wheeler, like. Hammer mallet, torque wrench, screw driver, file, etc.
- Describe the purpose and use of hand tools.
- Plan the working principles of measuring instruments and special tools used in auto workshop.
- Apply appropriate tools for lifting a three-wheeler
- Recognize the measuring instruments with working principle of vernier caliper, caliper, micrometer, scale, feeler gauge etc.

Duration: *10:00*	**Duration**: *20:00*
Theory–Key Learning Outcomes	**Practical–Key Learning Outcomes**
• Introduction to Hand tools: Overview of the purpose and importance of hand tools in the maintenance and repair of 2/3 wheelers • Demonstrate the uses of different measuring instruments (Vernier Caliper, Micrometer, Feeler gauge, Multimeter, Tachometer) • Describe the general-purpose hand tools used in Automobile workshop with the principle. • Importance of using right tools for each task to prevent injury and component damage • Selection of tools as per task • Overview of Tyre pressure gauge (Analog / digital) • Overview of air compressor • Procedure for compare with recommended pressure • Maintenance of tools	• Identify different measuring instruments (Vernier Caliper, Micrometer, Feeler gauge, Multimeter, Tachometer) • Apply general purpose hand tools in Automobile workshop. Measurement of length, depth, diameter (inside & outside). • Measurements of Spark plug gap and valve tappet clearance. • Measurement of voltage, currents & resistance. • Measurement of RPM. • Test the vehicle electrical system, including battery voltage, testing fuses and diagnosing electrical faults • Tyre pressure and alignment check • Cleaning and maintenance of hand and measuring tools
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Allen Key set, Caliper inside, Calipers outside, Center Punch, Dividers, Hands file, Electrician Screw Driver, Ball peen hammer, Philips Screw Driver set, Screw driver, Scriber, Spanner D.E. set of 12 pieces, Spanner, ring set of 12 metric sizes, Spanners socket with speed handle, T-bar, ratchet and universal, Steel rule, Wire cutter and stripper, Adjustable spanner (pipe wrench), Ammeter, Lead acid 12 V Battery –charger, Chisel flat, Cir clip pliers Expanding and contracting type, Clamps C, soldering iron, Depth micrometer (digital), Outside micrometer, Drill twist, Electric Soldering Iron,	

Electric testing screw driver, Feeler gauge, File flat, half round File, Square, File, triangular File, surface plate, Grease Gun, Hacksaw frame, Hammer Ball Peen with handle, Insulated Screw driver, Multimeter digital LCD DC AC. Outside micrometer, Motor cycle repairing stand, Spark lighter, Tachometer , Torque wrenches, Tyre pressure gauge with holding nipple, V' Block, Vernier caliper, Voltmeter 0-50V/DC, Wire Gauge (metric), Grinding machine (general purpose), Trolley type portable air compressor single cylinder, Working scooter/motor cycle, Working model of MPFI of auto rickshaw

Module 5: Troubleshoot fault of engine system, fuel feed system and transmission system

Mapped to AUT/0413/OC5

Terminal Outcomes:

- Identify basic problems in an engine and their cause
- Dismantle, replace any parts and reassemble different parts of an engine.
- Identify basic problems in a carburetor and their cause.
- Diagnose basic problem of a clutch and their causes.
- Diagnose basic problem of a gearbox and their causes.
- Dismantle, replace any parts and reassemble a clutch, dismantle, replace any parts and reassemble a gearbox.
- Repair of sprocket system of a motor cycle, adjust primary and secondary chain
- Identify and change the components as required viz. Belts, oil and air filters etc.
- Demonstrate different alternative fuel feed system required in 3wheeler.
- Replace CNG kit/LPG kit in a 3-wheeler and test it for its functionality

Duration: *20:00*	**Duration**: *40:00*
Theory–Key Learning Outcomes	**Practical–Key Learning Outcomes**
• Recognize the basic problems in an engine and find the cause • Procedure to dismantle any parts and precautions to be taken • Replacement procedure and reassemble of different parts of an engine • Identify the basic problems in a carburetor, clutch, gearbox and the cause • Dismantle and replacement procedure for the same parts with precautions. • Procedure to change the components viz. Belts, oil, filters etc. • Explain different alternative fuel feed system in 3-wheeler • Describe the function of CNG kit/LPG kit in a three-wheeler	• Basic problems in a fuel feed system and their causes. • Dismantle different parts of a fuel feed system • Cleaning, Inspecting & refitting of different parts of a fuel feed system • Basic problems in alternating fuel feed system (LPG/CNG) • Dismantling, Cleaning, inspecting & refitting of different parts of Multi valve, LPR, HPR. • Clean, inspect and refit the different parts of multi valve, LPR and HPR. • Dismantling, Cleaning, inspecting & refitting of LPG and CNG kit
Classroom Aids:	

Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook
Tools, Equipment and Other Requirements
Allen Key set, Caliper inside, Calipers outside, Center Punch, Dividers, Hands file, Electrician Screw Driver, Ball peen hammer, Philips Screw Driver set, Screw driver, Scriber, Spanner D.E. set of 12 pieces, Spanner, ring set of 12 metric sizes, Spanners socket with speed handle, T-bar, ratchet and universal, Steel rule, Wire cutter and stripper, Adjustable spanner (pipe wrench), Ammeter, Lead acid 12 V Battery –charger, Chisel flat, Cir clip pliers Expanding and contracting type, Clamps C, soldering iron, Depth micrometer (digital), Outside micrometer, Drill twist, Electric Soldering Iron, Electric testing screw driver, Feeler gauge, File flat, half round File, Square, File, triangular File, surface plate, Grease Gun, Hacksaw frame. Hammer Ball Peen with handle, Insulated Screw driver, Multimeter digital LCD DC AC. Outside micrometer, Motor cycle repairing stand, Spark lighter, Tachometer, Torque wrenches, Tyre pressure gauge with holding nipple, V' Block, Vernier caliper, Voltmeter 0-50V/DC, Wire Gauge (metric), Grinding machine (general purpose), Trolley type portable air compressor single cylinder, working scooter/motor cycle, Working model of MPFI of auto rickshaw, LPG and CNG Kit with cylinders

Module 6: Troubleshoot and repair fault of brake and wheel, ignition system, electric system.

Mapped to AUT/0413/OC6

Terminal Outcomes:

- Diagnose basic problem of brake system and their causes.
- Dismantle, replace any parts and reassemble a brake shoe/disc brake.
- Diagnose basic problems of wheel system and their causes.
- Dismantle, replace any parts and reassemble a wheel
- Diagnose basic problems of ignition system and their causes.
- Dismantle, replace any parts and reassemble ignition system
- Diagnose basic problems of battery and their causes.
- Replace/ repair the connection of battery.
- Diagnose basic problems of lighting system, switch, relay, and their causes.
- Repair of lighting system, switches, relays.

Duration: *20:00*	**Duration**: *40:00*
Theory–Key Learning Outcomes	**Practical–Key Learning Outcomes**
• Basic problem of brake system and their causes. • Procedure of dismantling, Cleaning, Inspecting & assembling Brake assembly. • Trouble shooting of Brake system. • Brake bleeding process. • Basic problems of ignition system and their causes. Dismantling, Cleaning, replacing	• Basic problem of brake system and their causes. • Dismantling, Cleaning, Inspecting & assembling Brake assembly. Trouble shooting of Brake system. Brake bleeding process. • Checking of Toe in & Toe out in 3wheeler. • Overhauling of suspension system. Basic

parts of ignition system. Basic problems of battery and their causes. • Describe the procedure of replacing a Battery in a correct sequence. Basic problems of lighting system, switch, relay, and their causes.	problems of ignition system and their causes • Dismantling, Cleaning, replacing parts of ignition system. Basic problems of battery and their causes. • Replacing a Battery in a correct sequence. Basic problems of lighting system, switch, relay, and their causes • Trouble shooting of Starter motor. Basic trouble shooting in electrical accessories.
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Allen Key set, Caliper inside, Calipers outside, Center Punch, Dividers, Hands file, Electrician Screw Driver, Ball peen hammer, Philips Screw Driver set, Screw driver, Scriber, Spanner D.E. set of 12 pieces, Spanner, ring set of 12 metric sizes, Spanners socket with speed handle, T-bar, ratchet and universal, Steel rule, Wire cutter and stripper, Adjustable spanner (pipe wrench), Ammeter, Lead acid 12 V Battery –charger, Chisel flat, Cir clip pliers Expanding and contracting type, Clamps C, soldering iron, Depth micrometer (digital), Outside micrometer, Drill twist, Electric Soldering Iron, Electric testing screw driver, Feeler gauge, File flat, half round File, Square, File, triangular File, surface plate, Grease Gun, Hacksaw frame Hammer Ball Peen with handle, Insulated Screw driver, Multimeter digital LCD DC AC, Outside micrometer, Motor cycle repairing stand, Spark lighter, Tachometer , Torque wrenches, Tyre pressure gauge with holding nipple, V' Block, Vernier caliper, Voltmeter 0-50V/DC, Wire Gauge (metric), Grinding machine (general purpose), Trolley type portable air compressor single cylinder, Working scooter/motor cycle, Working model of MPFI of auto rickshaw	

Module 7: Troubleshoot and repair parts like fork, suspension system, steering column, mud guard and lubrication system.

Mapped to AUT/0413/OC7

Terminal Outcomes:

- Diagnose basic problems of fork, suspension system, steering column, mud guard, lubrication system and their causes.
- Replace/ repair the fork, suspension system, steering column, mud guard, lubrication system.
- Restore the suspension systems efficiency
- Apply proper lubrication of moving parts, preventing wear and tear

Duration: *10:00*	**Duration**: *20:00*
Theory–Key Learning Outcomes	**Practical–Key Learning Outcomes**

• Describe the procedure to find the basic problems of fork, suspension system, steering column, mud guard. • Exhibit the system of lubrication and replacement of lubrication in timely manner. • Describe the procedure for repairing the fork, suspension system, steering column and mud guard.	• Diagnose basic problems of fork • Diagnose suspension system, steering column, mud guard • Check the lubrication system and replace the lubrication in timely manner. • Replace/ repair the fork, suspension system, steering column, mud guard, lubrication system. • Diagnose and troubleshoot of handle bar steering system.
Classroom Aids:	
Computer, Projection Equipment, Power Point Presentation and software, Facilitator's Guide, Participant's Handbook	
Tools, Equipment and Other Requirements	
Allen Key set, Caliper inside, Calipers outside, Center Punch, Dividers, Hands file, Electrician Screw Driver, Ball peen hammer, Philips Screw Driver set, Screw driver, Scriber, Spanner D.E. set of 12 pieces, Spanner, ring set of 12 metric sizes, Spanners socket with speed handle, T-bar, ratchet and universal, Steel rule, Wire cutter and stripper, Adjustable spanner (pipe wrench), Ammeter, Lead acid 12 V Battery –charger, Chisel flat, Cir clip pliers Expanding and contracting type, Clamps C, soldering iron, Depth micrometer (digital), Outside micrometer, Drill twist, Electric Soldering Iron, Electric testing screw driver, Feeler gauge, File flat, half round File, Square, File, triangular File, surface plate, Grease Gun, Hacksaw frame, Hammer Ball Peen with handle, Insulated Screw driver, Multimeter digital LCD DC AC, Outside micrometer, Motor cycle repairing stand, Spark lighter, Tachometer, Torque wrenches, Tyre pressure gauge with holding nipple, V' Block, Vernier caliper, Voltmeter 0-50V/DC, Wire Gauge (metric), Grinding machine (general purpose), Trolley type portable air compressor single cylinder, Working scooter/motor cycle, Working model of MPFI of auto rickshaw. Working model of handle bar steering system.	

Module 8 OJT

Mapped to AUT/0413/OC8

Terminal Outcomes:

Assessor will check report prepared for this component of training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for 60 Hours.)

Duration: *00:00*	**Duration**: *60:00*
Theory–Key Learning Outcomes	**Practical–Key Learning Outcomes**
	• Assessor will check report prepared for this component of training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for 60 Hours.)
Classroom Aids:	
Tools, Equipment and Other Requirements	

Module 9: Employability Skills

Mapped to DGT/VSQ/N0101

Detail of Employability Skills Syllabus: 30 hours

Key Learning Outcomes:

Introduction to Employability Skills Duration: 1 Hour

After completing this programme, participants will be able to:

1. Discuss the importance of Employability Skills in meeting the job requirements

Constitutional values - Citizenship Duration: 1 Hour

2. Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen.
3. Show how to practice different environmentally sustainable practices

Becoming a Professional in the 21st Century Duration: 1 Hours

4. Discuss 21st century skills.
5. Display positive attitude, self -motivation, problem solving, time management skills and continuous learning mindset in different situations.

Basic English Skills Duration: 2 Hours

6. Use appropriate basic English sentences/phrases while speaking

Communication Skills Duration: 4 Hour

7. Demonstrate how to communicate in a well -mannered way with others.
8. Demonstrate working with others in a team

Diversity & Inclusion Duration: 1 Hour

9. Show how to conduct oneself appropriately with all genders and PwD
10. Discuss the significance of reporting sexual harassment issues in time

Financial and Legal Literacy Duration: 4 Hours

11. Discuss the significance of using financial products and services safely and securely.
12. Explain the importance of managing expenses, income, and savings.
13. Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws

Essential Digital Skills Duration: 3 Hours

14. Show how to operate digital devices and use the associated applications and features, safely and securely
15. Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely

Entrepreneurship Duration: 7 Hours

16. Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges

Customer Service Duration: 4 Hours

17. Differentiate between types of customers
18. Explain the significance of identifying customer needs and addressing them
19. Discuss the significance of maintaining hygiene and dressing appropriately

Getting ready for apprenticeship & Jobs Duration: 2 Hours

20. Create a biodata
21. Use various sources to search and apply for jobs
22. Discuss the significance of dressing up neatly and maintaining hygiene for an interview
23. Discuss how to search and register for apprenticeship opportunities

Tools & Equipment

Tools and Equipment Two/Three-Wheeler Mechanic (Including LPG & CNG) (30 students)

Sl. No.	Tools/ Equipment	Specification	Qty.
1	Allen Key set	12 pieces (2mm to 14mm)	6
2	Caliper inside	15 cm Spring	6
3	Calipers outside	15 cm Spring	6
4	Center Punch	10 mm. Dia. x 100 mm.	6
5	Dividers	15 cm Spring	6
6	Hands file	20 cm. Second cut flat	6
7	Electrician Screw Driver	250 mm	6
8	Ball peen hammer	Peen 0.5 kg in with handle	6
9	Philips Screw Driver set	5 pieces (100 to 300mm)	6
11	Screw driver	20cm.X 9mm. Blade	6
12	Screw driver	30 cm. X 9 mm. Blade	6
13	Scriber	20 cm	6
14	Spanner D.E. set of 12 pieces	(6mm to 32mm)	6
15	Spanner, ring set of 12 metric sizes	6 to 32 mm.	6
16	Spanners socket with speed handle, T-bar, ratchet and universal	Up to 32 mm set of 28 pieces with box	6
17	Steel rule	30 cm (inch and metric)	6
18	Wire cutter and stripper	Plastic Handle Wire Strippers Crimper Plier Electrical Tool	6
19	Adjustable spanner (pipe wrench)	350 mm	2
20	Ammeter	300A/ 60A DC with external shunt	4
21	Auto Electrical test bench	Testing of all opening points of one	1
22	Lead acid 12 V Battery –charger	110 – 265 V AC supply (50 /60 Hz), 14.2 V max output, max current 1 amp	2
23	Blow Lamp	1 litre	2
24	Chisel flat	2.2 cm x 20 cm flat	4
25	Chisel octagonal flat	200 mm X 6 mm	4
26	Circlip pliers Expanding and contracting type	15cm and 20cm each	4
27	Clamps C	100 mm	2
28	Clamps C	150 mm	2
29	Clamps C	200 mm	2
30	Cleaning tray	45x30 cm.	4
31	Copper bit soldering iron	0.25 Kg	2
32	Cylinder bore gauge	capacity 18 to 160 mm	2
33	Depth micrometer (digital)	0-25mm, LC: 0.02mm	4
34	Outside micrometer	0 – 25 mm, LC: 0.02	4
35	Drill twist	1.5 mm to 13 mm (23 pcs) by 0.5 mm step, 14mm, 15mm	4
36	Drill twist	14mm, 15mm	2
37	Electric Soldering Iron	230 V 60 watts, adjustable temperature 200-450°C, 5 tips	2

38	Electric testing screw driver	6’	4
39	Feeler gauge	20 blades (metric)	4
40	Working scooter/motor cycle		1 each
41	Working model of MPFI of auto rickshaw.		1
42	Trolley type portable air compressor single cylinder		1
43	Grinding machine (general purpose)		1
44	Tachometer		
45	Tyre pressure gauge with holding nipple		2
46	Multimeter digital LCD DC AC		4
47	Lead acid 12 V Battery –charger		1
48	Working model of handle bar steering system		1
49	Injector cleaning kit		1
50	LPG kit with cylinder		1
51	CNG kit with cylinder		1

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
CTS/ATS	Mechanic Two and Three wheeler/ Mechanic Motor Vehicle	3	-	-	-	-
Diploma	Automobile Engineering/ Mechanical Engineering (Specialization in Automobile Engineering)	2	-	-	-	-
B. Tech/BE	Automobile/ Mechanical Engineering (Specialization in Automobile Engineering)	1	-	-	-	-
BSC	Automobile Maintenance	2	-	-	-	-

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role: "Two/Three-Wheeler Mechanic (Including LPG & CNG)" mapped to QP: "STC-AUT/2024/0413". Minimum accepted score is 80%.	Recommended that the Trainer is certified for the Job Role: "Trainer (VET & skills)", mapped to the Qualification Pack: "MEP/Q2601, v2.0". Minimum accepted score is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
CTS/ATS	Mechanic Two and Three wheeler/ Mechanic Motor Vehicle	5	-	-	-	-
Diploma	Automobile Engineering/ Mechanical Engineering	3	-	-	-	-
B. Tech/BE	Mechanical Engineering	2	-	-	-	-
B.Sc	Automobile Maintenance	3	-	-	-	-

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role: "Two/Three-Wheeler Mechanic (Including LPG & CNG)" mapped to QP: "STC-AUT/2024/0413". Minimum accepted score is 80%.	Recommended that the Assessor is certified for the Job Role: "Assessor (VET & skills)", mapped to the Qualification Pack: "MEP/Q2701, v2.0". Minimum accepted score is 80%.

Assessment Strategy

Assessment will be based on the concept of Independent Assessors empaneled with West Bengal State Council of Technical & Vocational Education & Skill Development (WBSCT&VE&SD), identified, selected, trained and certified on Assessment techniques. These Assessors would be aligned to assess as per the laid down criteria.

WBSCT&VE&SD would conduct assessment only at the training centers or designated testing centers authorized by WBSCT&VE&SD.

Ideally, the assessment will be a continuous process comprising of two distinct steps:

A. Continuous assessment by Trainers
B. Term end /Final Assessment by WBSCT&VE&SD

Each National Occupational Standard (NOS) in the respective QPs will be assigned weightage. Each Performance Criteria in the NOS will be assigned marks for theory and/or practical based on relative importance and criticality of function.

This will facilitate preparation of question bank / paper sets for each of the QPs. Each of these papers sets/question banks created by subject matter experts through WBSCT&VE&SD, especially with regard to the practical test and the defined tolerances, finish, accuracy etc.

The following tools are proposed to be used for final assessment:

i. Written Test: This will comprise of (i) True/False Statements and/or (ii)Multiple Choice Questions and/or (iii) Matching Type Questions. Online system for this will be preferred.
ii. Practical Test: This will comprise a test job to be prepared as per project briefing following appropriate working steps, using necessary tools, equipment and instruments. Through observation it will be possible to ascertain candidate's aptitude, attention to details, quality consciousness etc.
iii. Structured Viva-voce: This tool will be used to assess the conceptual understanding and the behavioral aspects as regards the job role and the specific task at hand.

Marks distribution as per outcome

Course Name	Sr No	Outcome No.	Outcome Name	Th Hrs	Pr Hrs	OJT Hrs	Total marks Th	Total marks Pr	Total marks OJT
Two/Three Wheeler Mechanic (Including LPG & CNG)	1	AUT/ 0413/ OC1	Apply Safe Working Practices	10	20	0	10	70	0
	2	AUT/ 0413/ OC2	Identify different types of two/three wheeler and their configuration	10	20	0	20	80	0
	3	AUT/0413/ OC3	Identify and explain the key features of two and three-wheeler engines	10	20	0	20	80	0
	4	AUT/ 0413/ OC4	Identify hand tools, measuring tools and their uses..	10	20	0	20	80	0
	5	AUT/ 0413/ OC5	Troubleshoot any fault of engine system, fuel feed system and transmission system.	20	40	0	30	130	0
	6	AUT/0413/ OC6	Troubleshoot and repair the fault of brake and wheel, ignition system, electric system.	20	40	0	30	130	0
	7	AUT/ 0413/ OC7	Repair parts like fork, suspension system, steering column, mud guard, lubrication system.	10	20	0	20	80	0
	8	AUT/0413/ OC8	Work in real job situation with special emphasis on basic safety and hazards in this domain.	0	0	60	0	0	150
	9	DGT/VSQ/N0101	Employability Skills- 30 hrs.	30	0	0	50	0	0
	TOTAL Theory 90 Hrs, Practical 180 Hrs, OJT 60hrs, Employability Skill 30 Hrs						200	650	150

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 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 psycho motor 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

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards