



Model Curriculum

Course Name: Electric Vehicle Driver cum Service Technician

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Program Overview

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

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Perform preparatory activities related to service and repairing of an EV.
- Assist the lead technician in diagnosing and repairing faults in an electric vehicle.
- Work effectively and efficiently as per schedules and timelines.
- Implement safety practices.
- Optimize the use of resources to ensure less wastage and maximum conservation.

After completing Elective 1, the participants will be able to:

- Perform routine service/maintenance/minor repairs of the four wheeler electric vehicle.

After completing Elective 2, the participants will be able to:

- Perform routine service/maintenance/minor repairs of the 2/3 wheeler electric vehicle.

After completing Elective 3, the participants will be able to:

- Perform routine service/maintenance/minor repairs of the truck/bus electric vehicle

Module Details	Theory Duration	Practical Duration	Total Duration
Bridge Module	11:00	03:00	14:00
Module 1: Introduction to Automotive Industry and Job Role	06:00	00:00	06:00
Module 2: Digital, Financial and Legal Literacy	05:00	03:00	08:00
Compulsory Module	189:00	397:00	586:00
Module 3: Work Effectively and Efficiently- Maintain Health, Hygiene and Safety Standard	10:00	20:00	30:00
Module 4: Perform Waste Disposal and Optimize Resource Utilization	06:00	06:00	12:00
Module 5: Maintain Effective Communication at Workplace	15:00	30:00	45:00
Module 6: Examine Roadworthiness of the Vehicle and Drive the LMV as per Standard	10:00	20:00	30:00
Module 7: Ensure Roadworthiness of the Electric Vehicle and Conform to CMVR and State Guidelines	30:00	30:00	60:00
Module 8: Electric Vehicle Driving Techniques	20:00	60:00	80:00
Module 9: Perform the Activities to Report on Duty and Coordinating with the Control Room	10:00	20:00	30:00
Module 10: Perform the Activities of Picking up and dropping off the Passenger	20:00	15:00	35:00
Module 11: EV Charging: Process and Etiquettes	05:00	12:00	17:00
Module 12: Perform routine service and repair of an Electric Vehicle (EV)	60:00	180:00	240:00
Module 15: Entrepreneurship	03:00	04:00	07:00
Elective Module	30:00	90:00	120:00
Elective 1: Module 13: Perform routine service and repairs of a 3 wheeler EV	30:00	90:00	120:00
Elective 2: Module 14: Perform routine service and repairs of a four wheeler EV	30:00	90:00	120:00
Total Duration	230:00	490:00	720:00

Module 1: Introduction to Automotive Industry and Job Role

Bridge Module

Terminal Outcomes:

- Outline the overview of Skill India Mission
- Describe the scope of the Automotive Industry
- Define/Discuss the role and responsibilities of an EV Driver cum Service Technician

Duration: 06:00	Duration: 00:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none">• Discuss the objectives and benefits of the Skill India Mission• Describe the scope of the Indian Automotive Industry and its sub-sectors• Explain basic terminologies and road safety signs used in Road Transport and Automotive industry.• Discuss job roles, responsibilities and opportunities for a EV Driver cum Service Technician• Explain standard code of ethics and professional practices to be adhered to by a EV Driver• Discuss the job opportunities for an EV Driver cum Service Technician in the automotive industry.• Explain about Indian EV manufacturing market.• List various types of EV's and different products/ models manufactured by Original Equipment Manufacturers (OEMs).• Illustrate the workshop structure.• Describe role and responsibilities of different people in the workshop.• Discuss the maintenance standards and procedures followed in organisation.• Identify the standard checklists and schedules recommended by OEM.	
Classroom Aids	
Whiteboard, Flip Chart, Markers, Duster, Projector, Laptop with charger, Projector screen, Power Point Presentation, 2.1 Laptop External Speakers.	
Tools, Equipment and Other Requirements	

Module 2: Digital, Financial and Legal Literacy

Bridge Module

Terminal Outcomes:

- Demonstrate procedure of operating digital devices and associated applications safely.
- Describe ways of managing expenses, income, and savings.

Duration: 05:00	Duration: 03:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the role of digital technology in today's life • Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely • List the common components of salary and compute income, expenditure, taxes, investments etc. • Discuss the legal rights, laws, and aids 	<ul style="list-style-type: none"> • Show how to operate digital devices and use the associated applications and features, safely and securely • Create sample word documents, excel sheets and presentations using basic features • Utilize virtual collaboration tools to work effectively • Outline the importance of selecting the right financial institution, product, and service • Demonstrate how to carry out offline and online financial transactions, safely and securely
Classroom Aids	
Whiteboard, Flip Chart, Markers, Duster	
Tools, Equipment and Other Requirements	

Module 3: Work Effectively and Efficiently- Maintain Health, Hygiene and Safety Standard

Compulsory Module

Terminal Outcomes:

- Employ appropriate health, hygiene, and safety practices at workplace.
- Safety during Fire and Rain.
- Perform work as per the quality standards.
- Safety considerations for EV drivers and Emergency procedures

Duration: 10:00	Duration: 20:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • List the potential workplace related risks and hazards, their causes and preventions. • Discuss the ways various methods to organize work as per the standard health, safety and security policy and procedures. • Outline the concept and importance of personal and workplace hygiene. • Explain the ways how to clean and sanitize the vehicle and related equipment. • List vital points to be checked to ensure proper functioning of the vehicle before commencing work. • Identify List the causes of risks and potential hazards at the workplace and ways to prevent them. • List the components of the first-aid kit. • Outline the purpose and usage of various Personal Protective Equipment (PPE) required at the workplace. • Recall the helpline number related to the women safety. • Explain the procedure to report accident, hazard and any other health-related issues as per SOP. • Outline the organizational structure to be followed to report about health, safety and security breaches to the concerned authorities. • State the methods to keep the work area clean and tidy. 	<ul style="list-style-type: none"> • Employ appropriate ways to keep vehicle clean, hygienic and hazard free. • Apply appropriate practices to check and ensure proper functioning of vehicle before commencing work. • Employ appropriate practices to check and ensure all equipment of the vehicle is properly connected before commencing the work • Prepare a sample report for vehicle repair and maintenance requirements as well as any safety breaches. • Role play on how to report perform hygiene and sanitation and report any hygienic issues to appropriate authority • Demonstrate how to provide first-aid in case of an accident. • Apply appropriate corrective measures in case of accident • Show how to use and handle of relevant protective equipment as after performing a task and at work conditions. • Perform routine cleaning of tools, equipment and machines. • Employ various techniques for checking malfunctions in the equipment as per Standard Operating Procedure (SOP). • Apply basic housekeeping practices to ensure that the work area is clean, such as mopping spills and leaks, cleaning grease stains etc.

<ul style="list-style-type: none"> • Explain how to maintain a proper balance between team and individual goals. • Discuss epidemics and pandemics and their impact on society at large. 	<ul style="list-style-type: none"> • Demonstrate how to evacuate the workplace in case of an emergency • Prepare a list of relevant hotline/emergency numbers.
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Classroom Aids

Training kit (Trainer guide, Presentations) Whiteboard, Flip Chart, Markers, Duster, Projector, Laptop, Projector screen, Power Point Presentation, 2.1 Laptop External Speakers, Participant Handbook and related SOPs.

Tools, Equipment and Other Requirements

Personal Protection Equipment: Safety glasses, Sanitization kit, Hand gloves, Face masks, Safety shield, footwear, warning signs and tapes, fire extinguisher and first aid kit

Module 4: Perform Waste Disposal and Optimize Resource Utilization

Compulsory Module

Terminal Outcomes:

- Employ effective waste management practices.
- Use the resources efficiently.
- Apply conservation practices at the workplace.

Duration: 06:00	Duration: 06:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • State the significance of biodiversity and ecosystem (greening). • Discuss the common sources of pollution and ways to minimize it. • Discuss various methods of waste management and its disposal. • List the different categories of waste for the purpose of segregation. • Differentiate between recyclable and non-recyclable waste. • State the importance of using appropriate colour dustbins for different types of waste. • Explain the ways to optimize usage of resources. • Elaborate the importance of using the material and water effectively and efficiently at the workplace. • Explain different methods to check spills/leakages of oil/coolant or water from the vehicle. 	<ul style="list-style-type: none"> • Demonstrate waste disposal procedures at the workplace depending on the types of waste. • Demonstrate different disposal techniques depending upon different types of waste. • Show how to use resources in a responsible manner. • Employ ways for efficient utilization of material and water. • Use energy efficient electrical appliances and devices to ensure energy conservation. • Dramatize a situation on how to escalate vehicle range, decrease in oil level, coolant or any water/oil leakage issues to appropriate authority. • Perform basic checks to identify any spills and leaks and that need to be plugged/stopped.
Classroom Aids	
Training kit (Trainer guide, Presentations), White board, Marker, Projector screen, Power Point Presentation Laptop with charger, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers.	
Tools, Equipment and Other Requirements	
Different type of waste bins to collect and segregate waste for disposal	

Module 5: Maintain Effective Communication at Workplace

Compulsory Module

Terminal Outcomes:

- Explain professional protocols and etiquette of effective communication to be followed with customers, colleagues, and superiors.
- Discuss various ways to show sensitization towards different age groups, gender and persons with disabilities.

Duration: 15:00	Duration: 30:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the importance of professionalism, etiquette, ethical behaviour and gender sensitive service practices at the workplace. • State the importance of effective communication and procedure for establishing good working relationships with supervisor and customers. • State the importance of identifying work requirements on the basis of instructions received from the supervisor. • Discuss the standard policy with regards to Persons with disability. • Discuss the importance of adhering to the policies related to physical and verbal Sexual harassment at workplace. • Explain the importance of showing respect to personal space of others. • Discuss different ways of escalating unresolved problems and analysing feedback from superiors as well as from customers. 	<ul style="list-style-type: none"> • Demonstrate the standard procedure to welcome and greet the customers. • Role play a situation on how to address customers dis-satisfactions and complaints effectively. • Role play a situation on how to communicate with customers, colleagues and others of different ages, genders and differently abled people as well as per specification. • Role play on how to escalate unresolved problems to superiors. • Dramatize a situation on how to report the completed trips and other data details to the supervisor
Classroom Aids	
Training kit (Trainer guide, Presentations), White board, Marker, Projector screen, Power Point Presentation Laptop with charger, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers.	
Tools, Equipment and Other Requirements	
Sample of escalation matrix and Organisation structure.	

Module 6: Examine Roadworthiness of the Vehicle and Drive the LMV as per Standard

Compulsory Module

Terminal Outcomes:

- Perform the steps to examine the roadworthiness of the vehicles.
- Demonstrate the pre-driving and driving activities conforming to the LMV standard driving practices.

Duration: 10:00	Duration: 20:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the technical, legal, technical, safety and compliance requirements, load limit, etc. as well as roadworthiness parameters for Light Motor Vehicles. • Discuss the quality norms and standards prescribed in the Quality Manual by the organization. • Describe basic functionalities of the technical equipment of the vehicle. • State the importance of examining the standard check list for the vehicle before the trip. • Describe safe and fuel-efficient and safe driving techniques. • Explain the standard escalation procedure regarding vehicle defects or deviation. 	<ul style="list-style-type: none"> • Apply appropriate techniques to perform routine checks on the vehicle for tyre pressure, Charge level, working of headlights and brakes, gauges, warning lights, etc. • Employ appropriate practices to check vehicle service record for any history of technical defects or immediate need for servicing like oil/filter change, etc. • Prepare sample deviation report as per observation while carrying out routine checks. • Draft a sample to-do list for repair requirement. • Demonstrate how to check the roadworthiness of the vehicle. • Create a sample report regarding actual or potential defects and deviations in the vehicle. • Display pre-driving activities like shoulder checking, adjusting IRVM/ ORVM and releasing of handbrakes, etc. • Demonstrate the procedure of safe driving starting from inserting or pressing the ignition key/button.
Classroom Aids	
Training kit (Trainer guide, Presentations), White board, Marker, Projector Screen, Laptop with charger, Power Point Presentation, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers.	
Tools, Equipment and Other Requirements	
Light Motor Vehicle, Sample compliance requirements, load limit, etc.	

Module 7: Ensure Roadworthiness of the Electric Vehicle and Conform to CMVR and State Guidelines

Compulsory Module

Terminal Outcomes:

- Perform the steps to examine the roadworthiness of the Electrical Vehicle.
- Describe CMVR and State Guidelines related to Electrical Vehicle.

Duration: 30:00	Duration: 30:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the CMVR guidelines issued by MoRTH, RTOs and other relevant authorities for the Electric Vehicle. • Explain the quality norms and standards prescribed for the EV in the Instructional Manual or as per the Standard Operating Procedure (SOP). • State the importance of ensuring the availability of required tools for the basic maintenance of the EV per the operating manual. • Discuss the basic functionalities and techniques for driving an Electric Vehicle (EV). • List the tools required for the basic maintenance of the EV • Compare between the basics of driving, features available in an Electric Vehicle against an Internal Combustion (IC) Engine vehicle. • Describe various types of batteries used in the EV and their maintenance procedures. • Discuss different functions of the battery • State the types of charging connector and time required for achieving full charge using either fast or slow chargers. • Discuss related electronic systems including active and passive safety systems specific to EV. • State the importance of applying the OEM's Standard Operating Procedures (SOP) while identifying the basic electrical faults in the EV. • Discuss various tools and their usage to diagnose technical faults in the EV. 	<ul style="list-style-type: none"> • Apply appropriate practices to identify related dashboard's signs, warning lights, signals, sensors, switches, gauges, Human Machine Interface (HMI) and Electronic Instrument Cluster (EIC) related to the EV. • Show how to charge an Electric Vehicle and ensure optimum charging of battery. • Demonstrate how to use appropriately vehicle lights, ignition, electronics, features and air-conditioning systems etc. • Demonstrate how to identify the basic electrical/electronic faults in the EV. • Prepare sample statutory documentation relevant to safety.

<ul style="list-style-type: none"> Identify the standard symbols, warning signs and signages used in the EV. 	
Classroom Aids	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop with charger, Presentation, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers.	
Tools, Equipment and Other Requirements	
Electrical Vehicle and Related spare parts.	

Module 8: Electric Vehicle Driving Techniques

Compulsory Module

Terminal Outcomes:

- Basic driving skills for EVs
- Energy-efficient driving practices
- Regenerative braking

Duration: 20:00	Duration: 60:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • Understand the basic controls of an electric vehicle, including the accelerator, brake, and regenerative braking system. • Demonstrate the ability to start, stop, and maneuver an electric vehicle safely in various driving conditions. • Accelerate smoothly and gradually to reduce energy consumption. • Maintain a steady speed and avoid unnecessary acceleration and deceleration. • Anticipate traffic flow and use regenerative braking to slow down whenever possible. • Explain the concept of regenerative braking, which converts the kinetic energy of a moving vehicle into electrical energy to charge the battery. • Describe how regenerative braking helps to improve the overall efficiency and range of an electric vehicle. • Demonstrate the use of regenerative braking in practice and explain its benefits in terms of energy savings and battery life 	<ul style="list-style-type: none"> • Demonstrate the ability to start, stop, and maneuver an electric vehicle safely. • Apply defensive driving techniques to anticipate and respond to potential hazards. • Practice safe driving practices in various road and weather conditions. • Apply energy-efficient driving techniques to maximize range and battery life. • Demonstrate the ability to monitor energy consumption and adjust driving behavior accordingly. • Analyze driving data to identify opportunities for improving energy efficiency. • Practice regenerative braking techniques during driving. • Demonstrate an understanding of how regenerative braking helps to recharge the battery. • Calculate the energy recovered through regenerative braking and its impact on overall efficiency.
Classroom Aids	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop with charger, Presentation, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers..	
Tools, Equipment and Other Requirements	
EV Driving Simulator, Electric Vehicle	

Module 9: Perform the Activities to Report on Duty and Coordinating with the Control Room

Compulsory Module

Terminal Outcomes:

- Describe the reporting procedure for starting the duty.
- Apply appropriate practices to coordinate with the vehicle control room

Duration: 10:00	Duration: 20:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • Elaborate the standard policies on duty, reporting, procedure and associated compliance applicable for a Taxi Driver • Discuss the standard protocol and procedure for communicating with the control room or supervisors • Describe the usage and importance of wearing proper uniform and PPE kit on duty and following standard safety policy for the driver and passenger as per standards • State the significance of informing the reporting manager well in advance about sickness, leave or delay in reaching or picking up the passenger at their destination 	<ul style="list-style-type: none"> • Dramatize a situation on how to report to the authorised person for starting the day's duty as per schedule. • Show how to obtain duty schedule from the reporting manager at the depo/branch office. • Apply appropriate practices to coordinate with control room regarding passenger details, pickup location, route and information about traffic
Classroom Aids	
Training kit (Trainer guide, Presentations), White board, Marker, Projector screen, Power Point Presentation Laptop with charger, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers.	
Tools, Equipment and Other Requirements	
PPE kit, Face N95 masks, Hand gloves, Sanitiser spray, Vehicle with MCT system and GPS, etc.	

Module 10: Perform the Activities of Picking up and Dropping off the Passenger

Compulsory Module

Terminal Outcomes:

- Perform the steps to pick-up and drop the passenger

Duration: 20:00	Duration: 15:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • State the significance of knowing the geographical area and different routes within the city • Explain the usage of android devices running GPS or vehicle in-built navigation system. • State the importance of reaching the pick-up location on time. • Discuss the standards to prepare and maintain vehicle log book • State the significance of efficient driving practices using gear, clutch, accelerator and brakes appropriately. • Elaborate the standard procedure of cleaning and maintaining the vital parts of the vehicle. • State the importance of offering newspaper, magazines, or entertainment media available inside the vehicle to the passenger. 	<ul style="list-style-type: none"> • Apply appropriate practices to check and confirm the passenger details and address of pick-up point. • Role play on how to greet the passenger as per standards and assist the customer while loading and arranging the luggage as well as entering/exiting and unloading goods from the vehicle • Show how to secure the overhead luggage with waterproof/resistant sheets/cover in case of rainfall. • Demonstrate how to perform the trip-end activities at the control room, like taking payments, providing receipt etc. • Calculate the route fare/ per km rates as per the standard. • Demonstrate the procedure of duty closure on completion of tasks for the day like cleaning of vehicle, parking at the designated area, securing the vehicle, visual checks and handing over the vehicle keys to the manager. • Prepare a sample vehicle logbook to record the number of trips, daily running (km), repairs and Charging done/consumed, etc. • Employ appropriate procedure to report vehicle defects or maintenance requirements as per standard. • Role play on how to inform the authorized person about incidents like accidents, breakdowns, change in route/ destination, unpaid trips, etc. happened during performing the duty
Classroom Aids	

Training kit (Trainer guide, Presentations), White board, Marker, Projector screen, Power Point Presentation Laptop with charger, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers.

Tools, Equipment and Other Requirements

Sample of escalation matrix and Organisation structure.

Module 11: EV Charging: Process and Etiquettes

Compulsory Module

Terminal Outcomes:

- Learning about EV charging Infrastructure, Chargers
- Identification of relevant EV charger enroute and its usage
- Explain professional protocols and etiquette of using an EV charging Station.

Duration: 05:00	Duration: 12:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • Identify and describe different types of EV charging stations (e.g., Level 1, Level 2, DC fast charging). • Explain the characteristics and charging capabilities of each type of charging station. • Understand the infrastructure requirements for different types of charging stations. • Describe the common charging protocols used in EV charging stations (e.g., CHAdeMO, CCS, Type 2). • Explain how these protocols affect charging times and compatibility with different EV models. • Understand the importance of standardization in EV charging protocols for interoperability. • Explain the basic etiquette for using public EV charging stations. • Describe common courtesy practices to ensure fair and efficient use of charging stations. • Understand the importance of leaving charging stations clean and free of obstructions. 	<ul style="list-style-type: none"> • Identify different types of charging stations in a practical setting. • Demonstrate how to use different types of charging stations safely and efficiently. • Practice plugging and unplugging an EV from various types of charging stations. • Demonstrate how to initiate a charging session using different charging protocols. • Practice using different charging protocols with compatible EVs. • Troubleshoot common issues related to charging protocols. • Role-play scenarios to practice proper behavior at public charging stations. • Demonstrate how to handle situations where charging station etiquette is not followed. • Discuss the importance of charging station etiquette in promoting EV adoption.
Classroom Aids	
Training kit (Trainer guide, Presentations), White board, Marker, Projector screen, Power Point Presentation Laptop with charger, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers.	
Tools, Equipment and Other Requirements	
Charging Application, Different type of Chargers, Sockets	

Module 12: Perform routine service and repair of an Electric Vehicle (EV)

Compulsory Module

Terminal Outcomes:

- Identify tools and equipment required for servicing and repairing.
- Demonstrate preparatory activities for diagnosing faults and repairing of an EV.
- Demonstrate how to use different techniques for diagnosing faults and repairing the an EV.

Duration: 60:00	Duration: 180:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • List various components/ aggregates and the manufacturer's specifications of an EV. • Discuss basic technology used, functioning and interconnections of various systems and components of an EV. • Recall fundamental terms, laws and principles of electricity used in EV. • Describe various symbols, units and terms used in wiring diagrams associated with electrical/electric systems/ components of an EV. • Describe various electrical and electronic signals such as electrical inputs, outputs, voltage, pulsewidth modulation, digital signal (including infra-red and fiber optics) etc. • Explain legal regulations that need to be taken into account for handling electric vehicles. • Elucidate SOP for receiving vehicles, opening job card, allocation of work, invoicing, vehicle delivery, handling complaints, etc. • Discuss various sources of information available for assessing service and repair requirements of the vehicle. • Discuss standard schedules and checklists recommended by the OEM/auto component manufacturer for servicing of electric vehicles. • List the types of tools and equipment used in different processes of an EV maintenance. 	<ul style="list-style-type: none"> • Analyse the job card to plan diagnostic activities as per the complaints mentioned in the job card. • Show how to collect workshop tools/ measuring devices/ equipment required for the job. • Apply appropriate ways to check the defects and calibration of tools/ measuring devices/ equipment before use. • Employ appropriate techniques to park the an EV in the workshop's designated service/repair area during electrical work. • Apply basic techniques to diagnose faults in the sub-assemblies and electrical/ electronic components of an EV. • Demonstrate how to check the electric vehicle for the service and repair requirements based on the job card. • Perform steps to report about malfunctions/repairs in the electric vehicle beyond own scope to the concerned person. • Demonstrate how to use tools and equipment for inspection and repairing of faults in an EV. • Demonstrate how to use computer, on- • line application and OEM technical information/assistance portals. • Employ various precautions and safety measures to ensure that no damage is caused to the vehicle during diagnosis.

<ul style="list-style-type: none"> • Discuss the importance of no HV (High Voltage) activity is being conducted around workstation prior to commencement of work. • Elaborate ways to work on the HV systems which do not require isolation, troubleshooting and replacing parts on the active HV system. • List the activities need to perform for preparing an EV for fault identification and repairing work. • Discuss the safety precautions need to follow during servicing and repairing of an EV. • Discuss the symptoms of technical faults, their causes and rectification procedures in EV. • Describe organizational/ professional code of ethics and standards of practice. • Discuss the documents to be maintained w.r.t inspection, troubleshooting and diagnosis of faults. • Describe five safety rules for electrical work on HV systems before starting the work. • Explain the health and safety measures and regulations w.r.t. equipment and components during fault diagnosis. 	<ul style="list-style-type: none"> • Demonstrate how to perform service and repairing activities on the HV system of an EV. • Show how to clean and condition dismantled mechanical and electrical components of an EV. • Demonstrate how to test electrical and electronic systems of an EV by following SOP. • Demonstrate how to perform service and repairing activities on the mechanical system of an EV. • Demonstrate how to conduct test drive of an EV for assessing after servicing and repairing by following instructions of Lead Service Technician. • Apply appropriate ways to check the inspect/test electric vehicle/system/component performance. • Demonstrate how to test and inspect vehicle mechanical and electrical systems by following instructions of Lead Service Technician. • Apply appropriate ways to interpret and compare results of diagnostic inspections/ tests with vehicle specifications and regulatory requirements. • Prepare a report the on the results of diagnosis or troubleshooting for lead technician by following organisational procedures. • Apply appropriate ways to check the performance of e l e c t r i c vehicle/aggregate post repair. • Show how to return leftover components and tools to store and dispose waste material after completion of work by following organisational policies and procedures.
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Classroom Aids

Training kit (Trainer guide, Presentations), White board, Marker, Projector screen, Power Point Presentation Laptop with charger, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers.

Tools, Equipment and Other Requirements

- PPT's, teaching aids, job card, Electric vehicle

- Vehicle, various body parts, engine, tools and equipment, material, consumables, components/aggregates, lubricants, grease, oil, etc.
- **Pressure indicators:** fuel pressure testers, manifold gauge sets, oil pressure gauges, tire pressure gauges etc., pullers: ball joint separators, bearing pullers, gear puller tools, slide hammers etc., trim or moulding tools: carbon scrapers, gasket scrapers, scrapers, spoons etc., measuring equipment: vernier calipers, micrometre, feeler gauges, multi-metre, flow metre, temp gauge, dial gauge etc., other tools: hand tools, power tools, lifting/jacking equipment, tensioning equipment, security activator etc., tools for other tasks such as cleaning of vehicles, brake bleeding, wheel alignment, AC gas charging etc.
- **Safety materials:** Fire extinguisher, safety gloves, aprons, safety glasses, helmet, safety shoe and first-aid kit
- **Cleaning material:** Tip cleaner, wire brush (M.S.), cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel

Module 13: Perform routine service and repairs of a 3 wheeler EV

Elective Module

Terminal Outcomes:

- Demonstrate preparatory activities for diagnosing faults and repairing of a 3-wheeler EV.
- Demonstrate how to use different techniques for diagnosing faults and repairing the 3-wheeler vehicle.

Duration: 30:00	Duration: 90:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • List various components/ aggregates and the manufacturer's specifications of a 3-wheeler EV. • Discuss basic technology used, functioning and interconnections of various systems and components of a 3-wheeler EV. • List the types of tools and equipment used in different processes of a 3-wheeler EV maintenance. • List the activities need to perform for preparing a 3-wheeler EV for fault identification and repairing work. • Discuss the symptoms of technical faults, their causes and rectification procedures in a 3-wheeler EV. • Explain the health and safety measures and regulations w.r.t. equipment and components during fault diagnosis. 	<ul style="list-style-type: none"> • Employ appropriate techniques to park a 3-wheeler EV in the workshop's designated service/repair area during electrical work. • Apply basic techniques to diagnose faults in the sub-assemblies and electrical/ electronic components of a 3-wheeler EV. • Demonstrate how to check the 3-wheeler EV for the service and repair requirements based on the job card. • Show how to clean and condition dismantled mechanical and electrical components of a 3-wheeler EV. • Demonstrate how to test electrical and electronic systems of a 3-wheeler EV by following SOP. • Demonstrate how to perform service and repairing activities on the mechanical system of a 3-wheeler EV. • Demonstrate how to conduct test drive of a 3-wheeler EV for assessing after servicing and repairing by following instructions of Lead Service Technician. • Demonstrate how to test and inspect vehicle mechanical and electrical systems by following instructions of Lead Service Technician. • Apply appropriate ways to interpret and compare results of diagnostic inspections/ tests with vehicle specifications and regulatory requirements.

	<ul style="list-style-type: none"> • Apply appropriate ways to check the performance of electric vehicle/aggregate post repair.
Classroom Aids	
White board, Marker, Projector screen, Power Point Presentation Laptop with charger, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers.	
Tools, Equipment and Other Requirements	
PPT's, teaching aids, job card, 3-wheeler electric vehicle	

Module 14: Perform routine service and repairs of a four wheeler EV

Elective Module

Terminal Outcomes:

- Demonstrate preparatory activities for diagnosing faults and repairing of a four-wheeler EV.
- Demonstrate how to use different techniques for diagnosing faults and repairing the four-wheeler vehicle.

Duration: 30:00	Duration: 90:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none"> • List various components /aggregates and the manufacturer's specifications of a four-wheeler EV. • Discuss basic technology used, functioning and interconnections of various systems and components of a four-wheeler EV. • List the types of tools and equipment used in different processes of a four-wheeler EV maintenance. • List the activities need to perform for preparing a four-wheeler EV for fault identification and repairing work. • Discuss the symptoms of technical faults, their causes and rectification procedures in a four-wheeler EV. • Explain the health and safety measures and regulations w.r.t. equipment and components during fault diagnosis. 	<ul style="list-style-type: none"> • Employ appropriate techniques to park the a four wheeler EV in the workshop's designated service/repair area during electrical work. • Apply basic techniques to diagnose faults in the sub-assemblies and electrical/ electronic components of a four-wheeler EV. • Demonstrate how to check the four-wheeler EV for the service and repair requirements based on the job card. • Show how to clean and condition dismantled mechanical and electrical components of a four-wheeler EV. • Demonstrate how to test electrical and electronic systems of a four-wheeler EV by following SOP. • Demonstrate how to perform service and repairing activities on the mechanical system of a four-wheeler EV. • Demonstrate how to conduct test drive of a four-wheeler EV for assessing after servicing and repairing by following instructions of Lead Service Technician. • Demonstrate how to test and inspect vehicle mechanical and electrical systems by following instructions of Lead Service Technician. • Apply appropriate ways to interpret and compare results of diagnostic inspections/ tests with vehicle specifications and regulatory requirements.

	<ul style="list-style-type: none"> • Apply appropriate ways to check the performance of electric vehicle/ aggregate post repair.
Classroom Aids	
Training kit (Trainer guide, Presentations), White board, Marker, Projector screen, Power Point Presentation Laptop with charger, 2.1 External Speakers.	
Tools, Equipment and Other Requirements	
<ul style="list-style-type: none"> • PPT's, teaching aids, job card, four wheeler electric vehicle • Vehicle, various body parts, engine, tools and equipment, material, consumables, components/aggregates, lubricants, grease, oil, etc. • Pressure indicators: fuel pressure testers, manifold gauge sets, oil pressure gauges, tire pressure gauges etc., pullers: ball joint separators, bearing pullers, gear puller tools, slide hammers etc., trim or moulding tools: carbon scrapers, gasket scrapers, scrapers, spoons etc., measuring equipment: vernier calipers, micrometre, feeler gauges, multi-metre, flow metre, temp gauge, dial gauge etc., other tools: hand tools, power tools, lifting/jacking equipment, tensioning equipment, security activator etc., tools for other tasks such as cleaning of vehicles, brake bleeding, wheel alignment, AC gas charging etc. • Safety materials: Fire extinguisher, safety gloves, aprons, safety glasses, helmet, safety shoe and first-aid kit • Cleaning material: Tip cleaner, wire brush (M.S.), cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel 	

Module 15: Entrepreneurship

Compulsory Module

Terminal Outcomes:

- Describe opportunities as an entrepreneur.

Duration: 30:00	Duration: 90:00
Theory- Key Learning Outcomes	Practical- Key Learning Outcomes
<ul style="list-style-type: none">• Explain the types of entrepreneurship and enterprises• Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan• Describe the 4Ps of Marketing- Product, Price, Place and Promotion and apply them as per requirement	<ul style="list-style-type: none">• Create a sample business plan, for the selected business opportunity.
Classroom Aids	
White board, Marker, Projector screen, Power Point Presentation Laptop with charger, 2.1 External Speakers.	
Tools, Equipment and Other Requirements	