



# MPRTS

## ELECTRIC BIKE REPAIR FUNDAMENTALS COURSE BY MPRTS

*The Electric Bike Repair Fundamentals course is designed to equip participants with the essential knowledge and skills required to diagnose, maintain, and repair electric bikes (e-bikes). As the popularity of e-bikes continues to rise, this course aims to provide students with a comprehensive understanding of electric bike components, systems, and troubleshooting techniques.*



**COURSE  
DURATION:  
1 WEEKS (20  
HOURS)**

## **COURSE OBJECTIVES: BY THE END OF THE ELECTRIC BIKE REPAIR FUNDAMENTALS COURSE,**

*participants should be able to:*

- Understand the basic principles of e-bike technology and its components.
- Safely handle e-bike electrical systems and batteries.
- Diagnose and troubleshoot common e-bike issues.
- Perform routine maintenance and repairs on e-bikes.
- Communicate effectively with customers about e-bike repair solutions.

**PREREQUISITES: NO PRIOR TECHNICAL KNOWLEDGE IS REQUIRED, BUT A BASIC UNDERSTANDING OF BICYCLE MECHANICS AND ELECTRICAL CONCEPTS IS BENEFICIAL.**



#### **DAY 1: INTRODUCTION TO ELECTRIC BIKES AND SAFETY**

- OVERVIEW OF E-BIKE TECHNOLOGY AND MARKET TRENDS.
- UNDERSTANDING DIFFERENT E-BIKE TYPES (PEDAL-ASSIST, THROTTLE, ETC.).
- SAFETY CONSIDERATIONS ARE SPECIFIC TO E-BIKES.
- PROPER HANDLING OF BATTERIES, ELECTRICAL COMPONENTS, AND HIGH-VOLTAGE SYSTEMS.

#### **DAY 2: ELECTRIC BIKE COMPONENTS AND SYSTEMS**

- EXPLORING E-BIKE COMPONENTS: MOTOR, BATTERY, CONTROLLER, SENSORS, AND WIRING.
- UNDERSTANDING THE INTERACTION BETWEEN ELECTRICAL AND MECHANICAL SYSTEMS.
- DIFFERENTIATING BETWEEN HUB MOTORS AND MID-DRIVE SYSTEMS.
- OVERVIEW OF PEDAL-ASSIST LEVELS AND THROTTLE OPERATION.

#### **DAY 3: DIAGNOSTIC AND TROUBLESHOOTING TECHNIQUES**

- IDENTIFYING COMMON E-BIKE ISSUES AND THEIR ROOT CAUSES.
- USING MULTIMETERS AND DIAGNOSTIC TOOLS FOR ELECTRICAL TESTING.
- TROUBLESHOOTING MOTOR AND CONTROLLER PROBLEMS.
- DIAGNOSING BATTERY-RELATED ISSUES AND CAPACITY DEGRADATION.

#### **DAY 4: REPAIRS AND MAINTENANCE**

- PERFORMING ROUTINE MAINTENANCE TASKS ON E-BIKES.
- A STEP-BY-STEP GUIDE TO REPLACING WORN-OUT COMPONENTS.
- REPAIRING OR REPLACING ELECTRICAL WIRING AND CONNECTORS.
- FINE-TUNING PEDAL-ASSIST SETTINGS AND THROTTLE RESPONSIVENESS.

#### **COURSE MATERIALS:**

- LECTURE SLIDES AND PRESENTATIONS EXPLAINING E-BIKE COMPONENTS AND REPAIR TECHNIQUES.
- PRACTICAL WORKSHEETS FOR HANDS-ON TROUBLESHOOTING EXERCISES.
- READING MATERIALS AND RESOURCES FOR FURTHER SELF-STUDY.

**CERTIFICATION: UPON SUCCESSFUL COMPLETION OF THE COURSE AND PASSING THE FINAL ASSESSMENT, PARTICIPANTS WILL RECEIVE A CERTIFICATE OF COMPLETION IN ELECTRIC BIKE REPAIR FUNDAMENTALS.**

#### **Assessment and Practical Work:**

- Hands-on exercises to diagnose and troubleshoot e-bike issues.
- Final project: Participants repair and restore a non-functional e-bike to working condition.

**Certification:** Upon successful completion of the course and passing the final assessment, participants will receive a Certificate of Completion in Electric Bike Repair Fundamentals.

Please note that this is a general outline for an electric bike repair course. Depending on the level of detail you want to include and the target audience's skill level, you can customize the course content further.

