



**QUILLANCE
INFOTECH PVT LTD.**

Hybrid & Electric Vehicles Program

The Quillance Hybrid & Electric Vehicles Program is a complete beginner-to-advanced training program designed to help learners master electric vehicle systems, hybrid vehicle technology, EV powertrains, battery management systems, charging infrastructure, automotive electronics, and sustainable mobility solutions used in the modern automobile industry.



Program Overview

What You Will Learn

- Understand electric and hybrid vehicle fundamentals
- Learn EV powertrain and battery management systems
- Study electric motors, controllers, and charging systems
- Understand automotive electronics and EV safety standards
- Analyze sustainable mobility and energy management concepts
- Work with real-world EV applications and simulations

Career Opportunities

After completing this program, learners can apply for roles such as:

- Electric Vehicle Engineer
- EV Service & Maintenance Associate
- Automotive Design Associate
- Battery Management System Technician
- EV Testing Engineer
- Hybrid Vehicle Technology Intern

Live Projects You'll Build

- **Project 1 – Electric Vehicle System Analysis**

Study and analyze the components of electric vehicles and hybrid systems.

- **Project 2 – EV Charging System Design**

Design and understand EV charging workflows and infrastructure.

- **Project 3 – Battery Management System Simulation**

Develop battery monitoring and energy management concepts.

- **Project 4 – Hybrid Vehicle Powertrain Design**

Analyze and model hybrid powertrain systems and workflows.

- **Project 5 – Smart EV Monitoring Dashboard**

Build monitoring systems for EV performance and diagnostics.

MODULE 1

Automotive & EV Fundamentals

TOPICS COVERED:

- Introduction to Hybrid & Electric Vehicles
- Basics of Automotive Engineering
- Types of Electric & Hybrid Vehicles
- EV Components & Vehicle Architecture
- Introduction to Sustainable Mobility
- EV Industry Trends & Future Technologies

SKILLS GAINED:

- Automotive Fundamentals
- EV System Understanding
- Mobility Technology Awareness
- Industry Knowledge

PRACTICAL LEARNING:

- Understand EV systems and workflows
- Analyze vehicle architectures
- Explore sustainable transportation concepts
- Learn automotive fundamentals

MODULE 2

EV Powertrain & Battery Technology

TOPICS COVERED:

- EV Powertrain Fundamentals
- Electric Motors & Controllers
- Battery Technologies & Lithium-Ion Systems
- Battery Management Systems (BMS)
- Energy Storage & Power Distribution
- Thermal Management Systems

SKILLS GAINED:

- EV Powertrain Knowledge
- Battery Technology Understanding
- BMS Workflow Skills
- Energy Management Concepts

PRACTICAL LEARNING:

- Analyze EV battery systems
- Understand motor and controller operations
- Study energy management workflows
- Explore thermal and power systems

MODULE 3

Automotive Electronics & Control Systems

TOPICS COVERED:

- Automotive Electronics Fundamentals
- Sensors & Embedded Systems
- Vehicle Control Units & CAN Protocol
- EV Wiring & Electrical Systems
- Diagnostics & Fault Detection Basics
- Smart Vehicle Communication Systems

SKILLS GAINED:

- Automotive Electronics Skills
- Vehicle Communication Understanding
- Embedded System Knowledge
- Diagnostics & Troubleshooting Skills

PRACTICAL LEARNING:

- Work with automotive electronics concepts
- Understand sensor integration workflows
- Analyze vehicle communication systems
- Explore diagnostics and fault detection

Module 4

Charging Infrastructure & EV Safety

TOPICS COVERED:

- EV Charging Fundamentals
- AC & DC Charging Systems
- Charging Infrastructure Design
- EV Safety Standards & Protocols
- Electrical Safety & Protection Systems
- Smart Grid & Energy Management Basics

PRACTICAL LEARNING:

- EV Charging Knowledge
- Safety System Understanding
- Infrastructure Design Awareness
- Energy Management Skills

PRACTICAL LEARNING:

- Study EV charging workflows
- Analyze charging infrastructure systems
- Understand EV safety protocols
- Explore smart energy management systems

Advanced EV Technology & Smart Mobility

TOPICS COVERED:

- Autonomous & Smart Vehicle Concepts
- AI & IoT in Electric Vehicles
- Connected Vehicle Technologies
- EV Data Monitoring & Analytics
- Sustainable Transportation Systems
- Future Trends in EV Technology

PRACTICAL LEARNING:

- Explore connected vehicle systems
- Analyze smart EV technologies
- Understand intelligent transportation workflows
- Work on sustainable mobility concepts

ADVANCED CONCEPTS INCLUDED:

- Intelligent Mobility Systems
- Smart Vehicle Connectivity
- EV Data Analytics
- Autonomous Driving Fundamentals
- Green Transportation Technologies
- Future Automotive Innovation

SKILLS GAINED

- Smart Mobility Understanding
- EV Technology Expertise
- Intelligent Vehicle Knowledge
- Future Automotive Technology Awareness

Module 6

Live EV Project & Team Collaboration Focus

TOPICS COVERED:

- EV Project Planning & Workflow
- Battery & Powertrain Analysis
- Vehicle Monitoring & Diagnostics
- EV System Testing & Reporting
- Team Collaboration & Technical Documentation
- Final EV Project Presentation

SKILLS GAINED:

- Real-World EV Experience
- Team Collaboration Skills
- Automotive Documentation Skills
- End-to-End EV Workflow Understanding

PRACTICAL LEARNING:

- Work on EV engineering simulations
- Analyze vehicle systems and performance
- Collaborate in automotive project teams
- Present EV solutions professionally

Module 7

Placement & Career Preparation

TOPICS COVERED:

- Resume Building & ATS Optimization
- LinkedIn & Professional Branding
- EV Technology Interview Preparation
- Automotive Industry Workflow Sessions
- Mock Interviews & HR Preparation
- Career Guidance & Industry Exposure

OUTCOMES

Students will be prepared for internships, EV engineering roles, automotive technology opportunities, and sustainable mobility careers.

CAREER SUPPORT INCLUDES:

- Resume & LinkedIn Reviews
- Mock Technical Interviews
- Internship & Placement Assistance
- Automotive Portfolio Guidance
- Career Mentorship Sessions
- Professional Communication Training



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Thank You!!



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