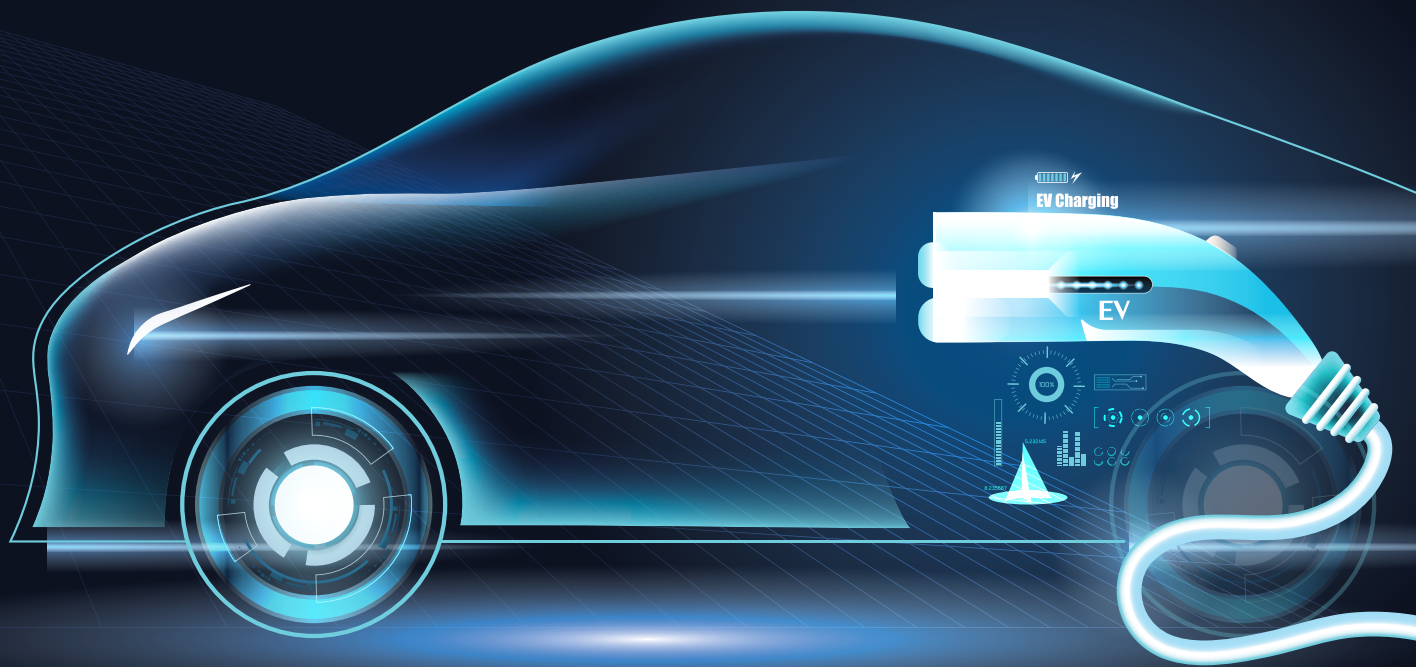
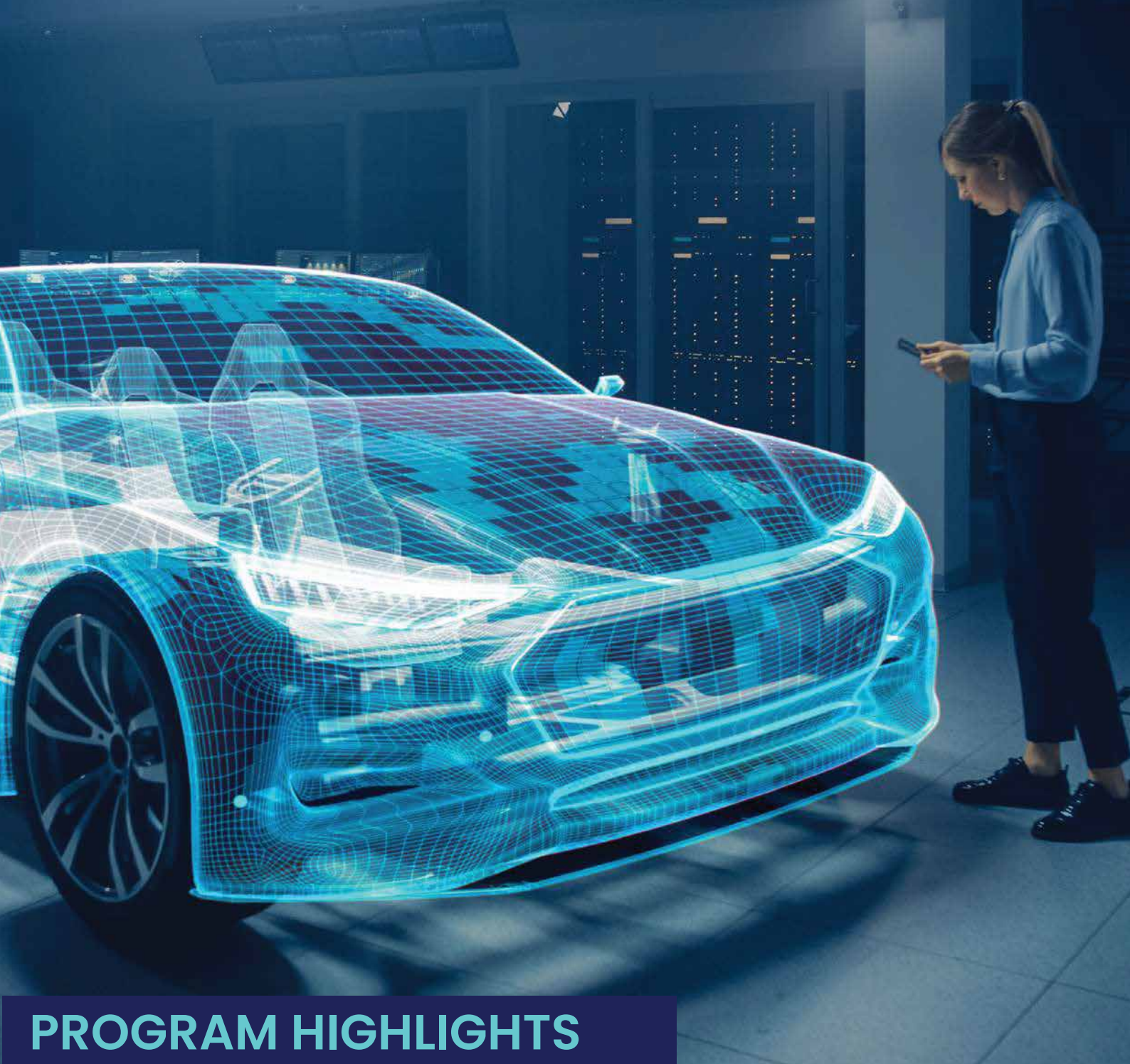


Master Certification In **ELECTRIC VEHICLE TECHNOLOGY**

Approved & Certified By





PROGRAM HIGHLIGHTS

The Indian EV industry is poised to grow 10x to reach USD 15 billion by 2027, creating over 1 lakh new jobs along the way. This rapidly evolving sector demands highly skilled and industry-ready professionals to drive its progress.

ISIEINDIA's AICTE Approved Master Certification in Electric Vehicle Technology is designed to equip learners with the advanced knowledge and hands-on skills required to build a successful career in the electric mobility ecosystem.



06 Months | Live Classes with Projects at ISIEINDIA EV Labs



Access to Interview Opportunities with Top EV Companies



Industry-Relevant Curriculum Designed and Taught by Industry Experts



Dedicated Career Support and Interview Preparation



Hands-on Projects and Industry-Specific Tools



Globally Valid Certificate from AICTE and ISIEINDIA



INTRODUCTION

For decades, the world has been confronting the environmental challenges caused by carbon-fuelled vehicles. With rapid advancements in technology and an increasing focus on sustainable mobility, the global automotive landscape is swiftly transitioning towards electric vehicles (EVs). The future of transportation is electric, and it demands highly

skilled, innovative professionals to lead this. The **AICTE Approved Master Certification in Electric Vehicle Technology**, developed by ISIEINDIA in collaboration with industry experts, is designed to empower learners with the knowledge, skills, and practical experience needed to build a rewarding career in the fast-growing EV sector.

90%

YoY Growth

in the sale of EVs in India during FY 24-25.

[Source: E Vehicle Info]

1 L +

New Jobs

expected to be generated if EV penetration reaches 30% by 2030.

[Source: CEEW Report India]

10 X

Growth

predicted in the Indian EV industry by 2027.

[Source: E Mobility Plus]

This comprehensive program prepares you for cutting-edge roles such as EV Design Engineer, Battery Systems Engineer, Power Electronics Engineer, Testing Engineer, Simulation Engineer, and EV R&D Specialist.

Through hands-on projects, case studies, and real-world applications, you'll gain practical expertise in EV design, powertrain systems, battery management, charging

infrastructure, and vehicle dynamics. The curriculum emphasizes simulation and analysis using leading tools such as **MATLAB, ANSYS, Simulink, CATIA, and LS-DYNA**, ensuring a deep understanding of both component-level and system-level EV design. By the end of the program, you'll be **industry-ready** to contribute to the sustainable mobility transformation shaping India and the world.



ABOUT THE PROGRAM

The **AICTE Approved Master Certification in Electric Vehicle Technology** spans over a period of 06 months, and delivers a cutting-edge curriculum designed and developed by best-in-class industry experts. It offers a live classes learning along with mon-Industrial Training or Hands on Projects on ISIE-COE Labs

LEARN ONLINE ANYTIME, ANYWHERE

Learn from live masterclasses by top industry leaders and online lab sessions every week, along with 120+ hours of learning content.

WEEKLY ONLINE MENTORSHIP FROM EXPERTS

Get assistance on projects and reinforce the concepts you learn through weekly mentorship sessions.

NETWORK WITH LIKE-MINDED PEERS

Interact with peers from diverse backgrounds and grow your professional network.

DEDICATED PROGRAM SUPPORT

Access dedicated support on your learning journey and resolve for all your queries with help from a dedicated Program Manager.

WHO IS THIS PROGRAM FOR?

The **AICTE Approved Master Certification in Electric Vehicle Technology** is curated especially for learners who wish to break into the EV industry with the latest skills and hands-on experience. This program is an ideal fit for you if you are:



Pursuing or have attained an engineering degree in electrical, electronics, mechanical, automobile, or related fields.



A fresh graduate who is looking to upskill and build a career in the EV industry.



Looking to build user-oriented, technology-driven vehicles to transform the future of mobility

80%

Success Ratio

432

Learners got their dream job out of 540



PROGRAM OUTCOMES

Upon completion of this program, you will be able to:

- Have a comprehensive understanding of the technology that governs electric vehicles, their various individual components and overall working mechanism.
- Perform system-level simulations of an entire EV using tools such as MATLAB, ANSYS, SOLIDWORKS AND LS DYNA.
- Design and simulate individual components such as batteries, power converters, motors, using industry-relevant tools and techniques.
- Design, develop, and test software and hardware components for electric vehicles, using C programming and knowledge of embedded systems.
- Present yourself as an ideal candidate for various roles in leading EV and component supplier companies and automotive consulting firms.

JOB ROLES YOU CAN ACCESS

Successful completion of the program will make you eligible for job opportunities at leading automotive and component supplier companies. You can also work at various consulting firms and explore research-oriented roles at relevant research centers. Some of these companies include Ola Electric, Ather Energy, Hero Electric, Renault-Nissan, Mahindra Rise, Tata Elxsi, Tata Motors, Cyient, HCL, Capgemini, TCS etc. Some of the job roles you can access are:

GRADUATE ENGINEER TRAINEE

DESIGN ENGINEER (MOTOR / BATTERY PACK / BMS)

EMBEDDED SOFTWARE ENGINEER

EV DESIGN ENGINEER

POWER ELECTRONICS ENGINEER

MBD ENGINEER

SIMULATION ENGINEER



LEARN FROM EXPERTS AND INDUSTRY PRACTITIONERS

You will get an opportunity to learn from a diverse set of experts and industry practitioners with a comprehensive understanding of the EV industry and a passion for nurturing young talent.



Himanshu Ranjan
Senior Engineer



Boris Fabris
Automotive Design Consultant



Pranav S Arekar
Design Engineer



Mr. Sumit Kanchan
Asst. Professor



Rahul Bollini
R&D Consultant for Li-Ion Battery



Sala Bhagesh Kumar
Powertrain Engineer

Note: This is a provisional list of mentors and instructors and is subject to updates



CURRICULAM

MODULE 1 – Fundamentals of EV & Vehicle Architecture

UNIT 1

INTRODUCTION TO ELECTRIC VEHICLES (4 HRS)

- Evolution of EV technology
- EV vs ICE vehicle comparison
- Global & Indian EV market overview (2W, 3W, 4W, Bus)
- Policy overview: FAME-II, EV incentives

UNIT 2

EV SYSTEM OVERVIEW (4 HRS)

- Major subsystems: Battery, Motor, Controller, Charger, DC-DC, Display, Wiring
- Energy flow from battery to wheel
- HV & LV systems distinction
- EV powertrain layouts (FWD, RWD)

UNIT 3

EV ARCHITECTURE & FUNCTIONAL FLOW (6 HRS)

- Electrical block diagram for a 3W EV
- Signal communication lines vs power lines
- Sensor overview (throttle, brake, temp, current)
- Role of CAN in architecture
- Practical examples: open EV schematic

UNIT 4

EV STANDARDS & CLASSIFICATION (6 HRS)

- EV categories (L1–L7, N1, M1)
- Basic homologation understanding (AIS-038 Rev2, AIS-156)
- IP ratings & insulation overview
- Vehicle efficiency and energy conversion

MODULE 2 – Powertrain, Motor & Battery System

UNIT 1

ELECTRIC MOTORS FOR EV (4 HRS)

- Motor types: BLDC, PMSM, ACIM, SRM
- Motor selection for 3W (power, torque, RPM, voltage)
- Torque–speed curve explanation
- Motor datasheet reading (example: 3.3 kW motor)

UNIT 2

MOTOR CONTROLLER & DRIVE LOGIC (4 HRS)

- Role of controller and inverter
- Throttle response and speed control
- Regenerative braking overview
- Drive/Reverse logic concept

UNIT 3

BATTERY SYSTEM DESIGN (6 HRS)

- Cell types and chemistry comparison (LFP, NMC, LMFP)
- Cell configuration (series/parallel)
- Battery pack capacity and range calculation
- BMS role and safety features (OVP, UVP, OTP, balancing)

UNIT 4

THERMAL MANAGEMENT & PACKAGING (6 HRS)

- Air vs Liquid cooling concept
- Battery enclosure and protection (IP ratings)
- Cooling plate concept for 72V 200Ah pack
- Battery safety, venting, and fusing

MODULE 3 – Battery Pack & Vehicle Integration Design (with SolidWorks/Creo)

UNIT 1

BATTERY PACK LAYOUT & STRUCTURE (5 HRS)

- Cell and module configuration for 72V 200Ah pack
- Electrical connections and insulation layout
- Battery management harness and sensor placement
- CAD visualization: module and busbar placement

UNIT 2

ENCLOSURE & MOUNTING (5 HRS)

- Tray and enclosure design principles
- Material selection (Aluminum, Steel)
- Vibration and thermal expansion considerations
- CAD visualization: 3W chassis integration and battery mount view

UNIT 3

COOLING AND SEALING (5 HRS)

- Air vs liquid cooling – realistic design constraints
- Airflow path and venting logic
- Cooling channel concept visualization
- IP rating considerations for enclosures

UNIT 4

DOCUMENTATION & BOM PREPARATION (5 HRS)

- Preparing bill of materials for battery pack
- Drafting and dimensioning standards
- Labeling and documentation for homologation
- Practical: Create a battery assembly layout sheet

MODULE 4 – Vehicle Communication & Embedded System Concepts

UNIT 1

INTRODUCTION TO CAN COMMUNICATION (4 HRS)

- What is CAN bus and why it's used
- CAN frame structure (ID, data, checksum)
- CAN nodes in EV (BMS, VCU, Motor Controller, Display)

UNIT 2

CAN MESSAGE FLOW IN EV (4 HRS)

- Typical CAN signal examples (voltage, RPM, SoC)
- CAN wiring – twisted pair & termination concept
- Practical decoding example using real log screenshot

UNIT 3

ECU, MCU & VCU CONCEPTS (6 HRS)

- What is an ECU, its role in EV
- Vehicle Control Unit logic – drive/reverse/regenerative control
- Microcontrollers and basic embedded workflow
- Firmware update and safety interlock

UNIT 4

FAULT CODE & DIAGNOSTICS (6 HRS)

- Common CAN errors and meaning
- Diagnostic Trouble Codes (DTC) examples
- CAN-based troubleshooting flowchart
- Logging and interpretation for service tools



MODULE 5 – Vehicle Integration, Testing & Safety

UNIT 1

SYSTEM INTEGRATION PROCESS (4 HRS)

- Electrical integration flow (Battery, Controller, Motor)
- Signal vs power line separation
- Interlock circuits and relays

UNIT 2

WIRING HARNESS & CONNECTORS (4 HRS)

- Connector types (Anderson, Amphenol, Deutsch)
- Cable sizing and color coding
- Harness routing & documentation basics

UNIT 3

TESTING & VALIDATION PROCEDURES (6 HRS)

- Functional tests (start-up, throttle, brake cut-off)
- Performance tests (speed, torque)
- Endurance and thermal testing concepts
- Report preparation

UNIT 4

SAFETY & COMPLIANCE (6 HRS)

- Electrical safety (insulation, IP ratings, isolation test)
- HV & LV identification
- Fusing, grounding, and contactor logic
- AIS standards overview for 3W testing

MODULE 6 – Advanced EV Systems, ADAS & IoT Applications

UNIT 1

ADAS IN EVS (4 HRS)

- What is ADAS and its role
- Levels of autonomy (L1–L5)
- Sensors used (ultrasonic, radar, camera)
- Example: Reverse assist in e-3W

UNIT 2

IOT IN ELECTRIC VEHICLES (4 HRS)

- EV data parameters for telematics (speed, SoC, GPS)
- IoT device structure – sensors, microcontroller, connectivity
- Data logging and analytics overview

UNIT 3

DIGITAL TWIN & SMART BMS CONCEPTS (6 HRS)

- Concept of digital representation of physical systems
- Predictive maintenance using real-time data
- Smart BMS architecture and alerts

UNIT 4

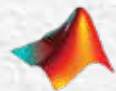
FUTURE OF ELECTRIC MOBILITY (6 HRS)

- AI and machine learning use in EVs
- Smart charging, V2G overview
- EV trends 2030: connected, autonomous, shared mobility



MASTER CUTTING-EDGE TOOLS

During this program, you will be exposed to a multitude of industry relevant tools such as:



Note: Tools used are under the purview of the faculty committee and a thorough review would be undertaken from time to time to ensure that the tools taught are in line with industry requirements.

BUILD A COMPREHENSIVE PROJECT PORTFOLIO

- **PROJECT 1** – Battery design assignment: “Design a 72V, 200Ah pack
- **PROJECT 2**– Study real cell datasheets and identify key parameter
- **PROJECT 3**– Discuss case study: Modular pack design for 3W cargo EV
- **PROJECT 4**– Prepare simple battery integration sketch manually or in CAD viewer
- **PROJECT 5**– Create a communication table (Sender, Receiver, Signal)
- **PROJECT 6**– Draw a VCU logic block for drive & brake interlock
- **PROJECT 7**– Draw a wiring diagram with key connectors labeled
- **PROJECT 8**– Prepare a testing checklist for prototype vehicle
- **PROJECT 9**– Watch case study: Connected 3W EV telematics overview
- **PROJECT 10**– Design a basic ADAS layout diagram
- **PROJECT 11**– Prepare a data parameter map for EV IoT dashboard
- **PROJECT 12**– Chassis Designing Using Solidworks And Ansys



CERTIFICATE OF COMPLETION

Certificate of **ACHIEVEMENT**

This is to certify that
VXXXY DXXNXXXTH

has succesfully completed specialization in

**MASTER CERTIFICATION IN ELECTRIC
VEHICLE TECHNOLOGY** in

a course offered by ISIEINDIA in as a part of its industry oriented
skill based education program.




Prof. (Dr.) John Doe
Program Mentor

Certificate ID: ISIEXXNXXXXXXX Issue Date: XX/XX/20XX





DEDICATED CAREER SUPPORT WITH ISIEINDIA CHARGING CAREER

If eligible, you will receive career assistance starting 4 months before and upto 6 months after successfully completing the program. This will include:

Access to job opportunities from leading EV companies.

Exclusive recruitment drives for our learners.

Mock interview with industry experts.

Workshops on interview preparation.

Practice selection tests and tool tests.

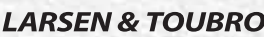
Career guidance and mentorship from industry leaders.

Resume building and LinkedIn profile review sessions.

Note: Learners will have to clear Placement Readiness Evaluation during or at the end of the program to be eligible for job opportunities and career support.

OUR ALUMNI WORK WITH TOP EMPLOYERS AND LEADING STARTUPS

We have a strong track record of placing learners in top companies and leading startups





ELIGIBILITY AND ADMISSION

ELIGIBILITY CRITERIA

- Applicants should have scored 60% or above in Xth, XIIth and hold a bachelor's degree.
- The program is open for candidates in their final semester, fresh graduates and early to mid career working professionals. It does not require any prior work experience.
- The program is ideal for candidates with a graduation in engineering disciplines like electrical, electronics, mechanical, automobile, industrial and production engineering.

**Admission to the program is subject to documents verification*

ADMISSION PROCESS

- **Step 1: Application Form**
Register by filling up the online application form and providing some basic details.
- **Step 2: Screening**
Go through a screening call with the Admissions Director's office.
- **Step 3: Join the Program**
If selected, you will receive a letter for the upcoming cohort. Secure your seat by paying the admission fee.

PROGRAM FEES

INR 1,39,999

You can pay the program fee through Net Banking, Credit Cards, Debit Cards.



READY TO ADVANCE YOUR CAREER?



CONTACT US

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