Indian Institute of Technology Bhilai
(IIT Bhilai)

Executive M.Tech Electrical Vehicle Systems

Type Executive Program	Mode Online
Duration 2 Years	Total fees ₹ 411,000

UNIVERSITY

Indian Institute of Technology Bhilai (IIT Bhilai)

Established in 2016 under the Ministry of Education, Indian Institute of Technology Bhilai is one of India's emerging IITs, rapidly building a reputation for academic excellence, research focus, and industry relevance. Located at its permanent campus in Kutelabhata, IIT Bhilai is designed as a modern, interdisciplinary institution where engineering, technology, and applied research converge to solve real-world challenges. At IIT Bhilai, education goes beyond concepts. It is built around application and innovation to operate in complex, evolving industries with confidence.

PROGRAM

Executive M.Tech Electrical Vehicle Systems

Highlights

- Earn an Executive M.Tech degree in Advanced Electrical Vehicle Systems from IIT Bhilai.
- Build expertise across battery technology, electric drives, power electronics, energy storage and EV charging infrastructure.
- Explore specialised areas such as smart grids, thermal management, autonomous vehicles and renewable energy integration.
- Apply learning through practical coursework, industry-relevant simulation tools and a 12-credit capstone project.
- Benefit from multiple exit options and a pathway to regular M.Tech equivalency through an on-campus thesis.

Learning outcomes

- Design and analyse electric vehicle systems, including batteries, drives, power electronics and energy-management components.
- Apply advanced control strategies to improve EV performance, efficiency and system reliability.
- Develop solutions for EV charging infrastructure, smart-grid integration and renewable energy utilisation.
- Evaluate safety, environmental, regulatory and sustainability considerations in electric mobility projects.
- Communicate technical recommendations and lead multidisciplinary projects across the EV and clean-energy ecosystem.

Eligibility Criteria

Minimum 2 years of relevant experience within the preceding 3 Years*.

Should have B.Tech. / B.E. / B.Sc. in relevant field (minimum 4-year program) / M.S. or M.Sc. in relevant field (minimum 2-year program) / M.C.A. (minimum 2-year program). For the candidates applying based on the M.Sc./M.S./M.C.A. degree, the undergraduate degree must be in a science or engineering field.

In the qualifying degree, at least 55% marks or a CGPA/CPI equivalent to 55% marks. In case the candidate belongs to the SC, ST, or Persons with Disability (PwD) category, this is relaxed to 50% marks or a CGPA/CPI equivalent to 50% marks. To be eligible to apply for equivalency after the third semester, the candidate must have scored the minimum marks in the qualifying degree as specified in the eligibility criteria of the regular M.Tech. program of IIT Bhilai. *To be computed as per the last day for application submission of this round.

Eligibility for PhD: Executive M.Tech. degree will be considered eligible for PhD admissions. Other MEQs will remain as per the institute norms.

Program-specific criteria for Ex. M.Tech. admissions: Relevant Experience- Industrial or Teaching experience only. Relevant field for the qualifying degree- A. M.Sc./M.S. (2 years): ME / EE / ECE / CS / MT / PI / AE / IN B. B.Sc. (4 years): ME / EE / ECE / CS / MT / PI / AE / IN

Curriculum Overview

Semester I (3 subjects)

- Fundamentals of Electric Vehicles
- Electric Drives and Control
- Energy Storage and Conversion

Curriculum Overview (continued)

Semester II (3 subjects)

- Battery Technology and Manufacturing
- Electives in Energy & Sustainability
- Electives in Power Systems & Electronics

Semester III (3 subjects)

- Electives in Energy & Sustainability
- Electives (Any)
- Electives (Any)

Semester IV (1 subject)

- Capstone Project OR Thesis

Semester V (1 subject)

- Thesis (*Applicable for certain program tracks.)

Power Systems & Electronics (Elective) (3 subjects)

- Power Quality Control for EVs
- Power Electronics for EVs
- Smart Grids and EV Integration

Curriculum Overview (continued)

Energy & Sustainability (Elective) (5 subjects)

- EV Charging Technology and Infrastructure
- Renewable Energy Systems for EVs
- Thermal Management Systems in EV
- Vehicle Dynamics and Modeling
- Environmental Impact of EVs

Innovation, Business & Testing (Elective) (4 subjects)

- Project Management in EV Industry
- EV Business Models and Market Analysis
- Autonomous and Connected Vehicles
- Testing and Certification of EV Batteries

Fee Structure

Fee heads	Sem 1	Sem 2	Sem 3	Sem 4	Total
Application Fee	₹ 5,000	—	—	—	**₹ 5,000**
Admission Fee	₹ 101,500	₹ 101,500	₹ 101,500	₹ 101,500	**₹ 406,000**
Total	**₹ 106,500**	**₹ 101,500**	**₹ 101,500**	**₹ 101,500**	**₹ 411,000**