



e-Masters IN Advanced Electrical Vehicle Systems



Where Knowledge Meets Innovation - Empower Dreams,
Engineer Success

2 Years | Online Immersive Sessions | Graduate from an IIT

Tech Leadership Redefined - IIT Bhilai's eMasters Journey

Indian Institute of Technology (IIT) Bhilai was established in the state of Chhattisgarh by the Ministry of Education in the year 2016.

IIT Bhilai is presently housed in its permanent campus at Kutelabhata, Bhilai, Chhattisgarh.

At IIT Bhilai, we understand the demands of the dynamic corporate landscape, and our eMasters programs are meticulously crafted to provide a seamless blend of academic excellence and real-world applicability. Whether you aspire to advance in your current role, switch career paths, or stay ahead of industry trends, our eMasters courses offer the strategic edge you need to thrive in a competitive landscape.





Program Overview

The Executive e-Masters in Advanced Electrical Vehicle Systems is a specialized program designed for professionals in the electric vehicle (EV) industry. It covers a range of topics from basic electric and hybrid vehicle technologies to cutting-edge advancements in battery systems, propulsion methods, and sustainable energy. The curriculum ensures comprehensive knowledge of electric vehicle technology, including energy storage, powertrain engineering, and smart grid integration.

Who Can Apply?

- ⚡ Should be a working professional with at least two (2) years of experience.
- ⚡ Should have B.Tech/ BE/ M.Tech/ MSc (4 Semester Program)/ MCA (4 Semester Program)/ MS Degree (min. 4 Semester Program).
- ⚡ In the qualifying degree at least 55 percent marks or equivalent 5.5 CGPA/CPI must be there. In case of the candidate belonging to SC, ST, or Persons with Disability (PwD) category, this is relaxed to 50% or equivalent 5.0 CGPA/CPI.

For MCA/MSC passed graduates, the percentage score of MCA/MSC would be considered. For BE/BTech Engineering graduates without PG specialization, the percentage score of the undergraduate degree would be considered. For a post graduation in the Engineering field of study, PG score qualification can be considered.

- ⚡ Selection process will be scheduled post counseling & application process, depending on the number of eligible applications as per seat availability for the program. This entire process will be online.

Who Is This Program For?

- ⚡ Engineers and software developers seeking a profound understanding of advanced electric vehicle systems will discover this program to be invaluable for refining their expertise.
- ⚡ This program is also well-suited for entrepreneurs, innovators, and tech enthusiasts who are eager to master the intricacies of Advanced EV Technology.
- ⚡ The e-Masters in Advanced Electrical Vehicle Systems is designed to meet the needs of individuals who are enthusiastic about advancing their careers and making a significant impact in the digital age, particularly within the rapidly evolving landscape of electric mobility.

PROGRAM OBJECTIVES



To introduce the fundamental concepts and technologies behind electric vehicles (EVs).



To analyze the challenges and future trends in the EV industry.



To gain proficiency in the use of control techniques for electric drives.



To provide an in-depth understanding of various battery technologies, including their chemistry, design, and applications.



To develop skills in analyzing, designing, and managing battery systems for various applications, including electric vehicles and renewable energy storage.



To develop skills in designing and evaluating renewable energy solutions for EV charging and power management.



To explore the design, operation, and optimization of power converters and control strategies for EV applications.



To evaluate the emerging trends and future developments in EV charging technologies and infrastructure.

PROGRAM HIGHLIGHTS



An esteemed certification, campus immersion & alumni status from IIT Bhilai



Learn through Virtual Instructor-Led Training (VILT)



Explore top-notch learning with industry experts

PROGRAM STRUCTURE

Semester	Course Code	Course Name	Category
I	EVT501	Fundamentals of Electric Vehicles	Program Core (PC)
I	EVT502	Electric Drives and Control	Program Core (PC)
I	EVT503	Battery Technology and Management Systems	Program Core (PC)
I	EVT504	Renewable Energy Systems for EVs	Program Core (PC)
II	EVTXXX	Elective in EV Power Systems	Program Elective (PE)
II	EVTXXX	Elective in Vehicle Dynamics	Program Elective (PE)
II	EVTOEX	Open Elective	Open Elective (OE)
III	EVT799	Thesis/Project in EV Technology	Thesis
III	EVTXXX	Advanced Elective in Battery Systems	Program Elective (PE)
III	EVTXXX	Advanced Elective in EV Design	Program Elective (PE)
IV	EVT799	Thesis/Project in EV Technology	Thesis

Category	Course Code	Elective Courses	Category
EV Power Systems Electives	EVT600	Advanced Power Electronics for EVs	Program Elective (PE)
	EVT601	EV Charging Technology and Infrastructure	Program Elective (PE)
	EVT602	Smart Grids and EV Integration	Program Elective (PE)
	EVT603	High Voltage Systems in EVs	Program Elective (PE)
	EVT604	Energy Storage and Conversion	Program Elective (PE)
Vehicle Dynamics Electives	EVT605	Vehicle Aerodynamics	Program Elective (PE)
	EVT606	Advanced Vehicle Dynamics	Program Elective (PE)
	EVT607	Lightweight Materials for EVs	Program Elective (PE)
	EVT608	Noise, Vibration, and Harshness (NVH) in EVs	Program Elective (PE)
	EVT609	Suspension, Steering, and Braking Systems	Program Elective (PE)
Open Electives	EVT610	Autonomous and Connected Vehicles	Open Elective (OE)
	EVT611	Sustainable Mobility Solutions	Open Elective (OE)
	EVT612	Project Management in EV Industry	Open Elective (OE)
	EVT613	EV Business Models and Market Analysis	Open Elective (OE)
	EVT614	Environmental Impact of EVs	Open Elective (OE)



CORE LEARNING OUTCOMES

- ⚡ Students will gain a comprehensive understanding of the principles and components of electric vehicles.
- ⚡ Ability to design and evaluate key components of electric vehicles, such as battery systems and electric motors.
- ⚡ Proficiency in analyzing the performance of various electric drive systems.
- ⚡ Capability to select appropriate drive systems for industrial applications.
- ⚡ Capability to apply knowledge of battery systems in real-world scenarios, particularly in electric vehicles and renewable energy solutions.
- ⚡ Knowledge of the impact of renewable energy integration on EV performance and sustainability.
- ⚡ Insight into emerging trends and technological advancements in renewable energy for electric vehicles.
- ⚡ Capability to utilize simulation tools for designing and testing power electronic systems in EV contexts.
- ⚡ Understanding of the integration of EV charging infrastructure with renewable energy sources.
- ⚡ Skills to analyze and predict the impact of EV charging technology on the energy sector.

PROGRAM ADMISSION JOURNEY



STEP 1:

Fill up an online application form, upload the required documents and submit application



STEP 2:

Make the application payment



STEP 3:

Shortlisting based on work, and education profile



STEP 4:

If shortlisted, you will receive an offer letter from IIT Bhilai



STEP 5:

Pay admission confirmation fee within 7 days of receiving the offer letter

Selection process will be scheduled post-counseling & application process, depending on the number of eligible applications as per seat availability for the program. This entire process will be online.

Note: The application fee once paid is not refundable. IIT Bhilai reserves the right to conduct the admissions process. By submitting the application, the students agree that any decision regarding Admissions from IIT Bhilai will be final and binding.

Fee Structure

e-Masters in Advanced Electrical Vehicle Systems

Head	Sem 1	Sem 2	Sem 3	Sem 4	Total
Application Fee (Non Refundable)	₹ 5,000/-	₹ 0/-	₹ 0/-	₹ 0/-	₹ 5,000/-
Admission Fee (Including Workshop /Training)	₹ 82,500/-	₹ 82,500/-	₹ 82,500/-	₹ 82,500/-	₹ 3,30,000/-
Instalment 1	₹ 42,500/-				
Instalment 2	₹ 40,000/-				
Optional Campus Immersion Fee	₹ 0/-	₹ 10,000/-	₹ 0/-	₹ 10,000/-	₹ 20,000/-
Optional Institute Alumni Fee	₹ 0/-	₹ 0/-	₹ 0/-	₹ 6,000/-	₹ 6,000/-

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भारतीय प्रौद्योगिकी संस्थान भिलाई
शिक्षा परिषद की अनुशंसा पर एवं पाठ्यक्रम की निर्धारित
अंतिम और शोध को सफलतापूर्वक पूर्ण करने पर
XYZ शर्मा
को
उन्नत विद्युत वाहन प्रणालियों में
ई-मास्टर्स
की उपाधि प्रदान करता है।
संस्थान द्वारा मुद्रांकित यह उपाधि दिनांक अठारह जून दो हजार बाईस
को प्रदान की गई।


INDIAN INSTITUTE OF TECHNOLOGY BHILAI
upon the recommendation of the Senate hereby confers
XYZ Sharma
With the degree of
eMasters in
Advanced Electrical Vehicle Systems
for successfully completing the prescribed program study
and presenting the thesis.
Given this day the Eighteenth of June, Two Thousand Twenty Two
under the seal of the Institute.


कुलसचिव
Registrar


अध्यक्ष, शिक्षा परिषद
Chairman, Senate


अध्यक्ष, संकासक मंडल
Chairman, Board of Governors



Proficiency Gained - Tools and Technologies

Simulation Software



EV Design and Simulation

Battery Management Systems



Practical experience in EV design, battery technology, and energy management

Cloud Computing Platforms



Google Cloud



Azure

Data storage, high-performance computing, specialized software

Virtual Labs



Virtually Testing EV Systems and
Conducting practical experiments virtually

Programming Environments



Learning programming for EV systems analysis and development



Get In Touch With Us

For registration and any other information please get in touch with us at admission.iitbhilai@digiversity.com

Contact us: 033-4058-6356