



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 eMasters 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 industry experience
- ⚡ Should have a B.Tech / BE / MSc / MCA / MS Degree
- ⚡ Must hold a bachelor's degree or Master's Degree, with at least 50% marks or equivalent CGPA/CPI
- ⚡ In case of the candidate belonging to SC, ST, or Persons with Disability (PwD) category, this is relaxed to 45% or equivalent CGPA/CPI

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 Electrical Vehicle Systems.
- ⚡ The eMasters 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

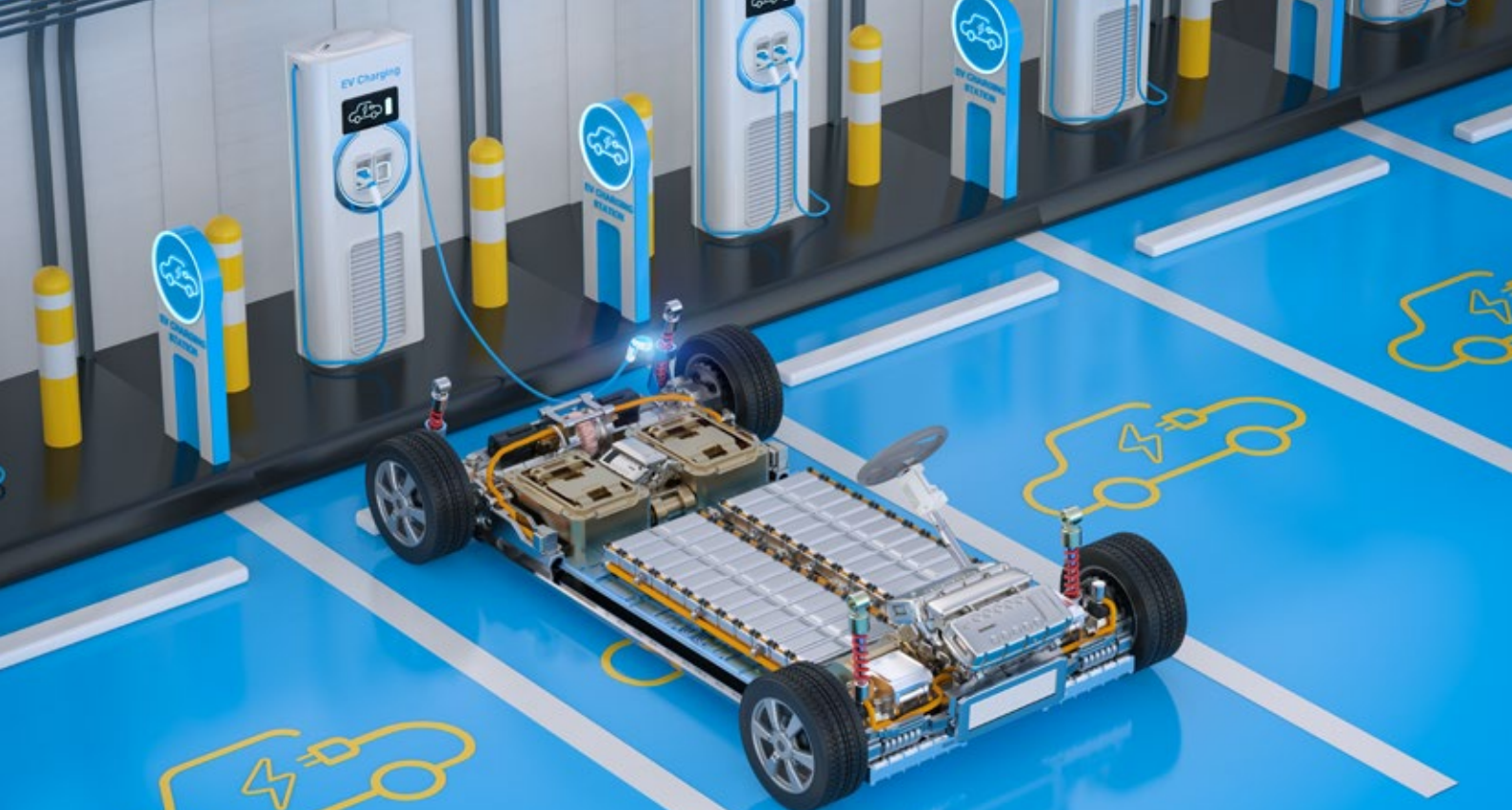


PROGRAM STRUCTURE

Semester	Course Code	Course Name	Category
I	EVT501	Fundamentals of Electric Vehicles	Program Core (PC)
I	EVL504	Renewable Energy Systems for EVs	Program Core (PC)
I	EVL601	EV Charging Technology and Infrastructure	Program Elective (PE)
I	EVL604	Energy Storage and Conversion	Program Elective (PE)
I	EVL614	Environmental Impact of EVs	Program Elective (PE)
II	EVL502	Electric Drives and Control	Program Core (PC)
II	EVL503	Battery Technology and Management Systems	Program Core (PC)
II	EVL602	Smart Grids and EV Integration	Program Elective (PE)
II	EVL500	Advanced Elective in Battery Systems	Program Elective (PE)
II	EVL615	Thermal Management Systems in EV	Program Elective (PE)
II	EVL606	Advanced Vehicle Dynamics	Program Elective (PE)
III	EVP799	Minor Project	Thesis
III	EVL600	Advanced Power Electronics for EVs	Program Elective (PE)
III	EVL617	Battery Manufacturing	Program Elective (PE)
III	EVL603	High Voltage Systems in EVs	Program Elective (PE)
III	EVL612	Project Management in EV Industry	Program Elective (PE)
III	EVL613	EV Business Models and Market Analysis	Program Elective (PE)
IV	EVP899	Major Project	Thesis
IV	EVL610	Autonomous and Connected Vehicles	Open Elective (OE)
IV	EVL611	Sustainable Mobility Solutions	Open Elective (OE)
IV	EVL603	Lightweight Materials for EVs	Program Elective (PE)

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

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/-

Cancellation & Fee Refund Policy:

➤ Application Fee: Non-refundable.

➤ Course Fee Refund:

A refund of 80% of the paid course fee will be issued if a request is raised before the Batch commencement date.

No refund will be provided on or after the batch commencement date.

डॉक नं./Serial No. 2022/0014

अनुक्रमिक सं./ID No. 12010230

भारतीय प्रौद्योगिकी संस्थान भिलाई
शिक्षा परिषद की अनुमोदना पर एवं पाठ्यक्रम की निर्धारित
अईलाजी एवं 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 डिप्लोमा 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.

Digitally Signed by
Dr. Anupam K. Singh, Registrar
Signature of Dr. Anupam K. Singh

कुलसचिव
Registrar

Digitally Signed by
Dr. Anupam K. Singh, Chairman, Senate
Signature of Dr. Anupam K. Singh

अध्यक्ष, शिक्षा परिषद
Chairman, Senate

Digitally Signed by
Dr. Anupam K. Singh, Chairman, Board of Governors
Signature of Dr. Anupam K. Singh

अध्यक्ष, संचालक 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



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