



DAV
UNIVERSITY



L&T
EduTech



Centre of Excellence for
e-Mobility & Electric Vehicles

Industry Collaborated Co-op Programme

B. Tech. in Mechatronics **(Electric Vehicle Engineering)**

Centre of Excellence **for E-Mobility & EV**

EV Training with hardware embedded
training solutions



DAV UNIVERSITY

Empowering Students with 21st century Skills

www.davuniversity.org



Executive Summary

India boasts a large domestic market, but relying on traditional fuel-intensive modes of transportation is unsustainable and detrimental to the country's climate action commitments. To address this, Indian policymakers are focused on developing an electric vehicle ecosystem that can provide clean and sustainable transportation. This effort is expected to drive significant growth in the Indian Electric Vehicle (EV) market, led by government policies, Indian automaker investments and increasing demand for EVs.

As the automotive industry shifts towards electrification, the demand for skilled professionals with specialised knowledge in EV technology is also rapidly increasing. Manpower with knowledge on various domains like batteries, charging stations, vehicle designing etc., has seen a significant growth in the recent years. Skill Training in EVs has become an essential need to meet the current and future demand for skilled professionals. This will help individuals and organizations stay ahead of the curve, adapt to new technologies and contribute to the sustainable development of the transportation sector.

In this context, L&T EduTech, the edtech arm of the India multinational conglomerate Larsen & Toubro (L&T) in collaboration with DIYguru, proposes to set up 'Center of Excellence (CoE) in 'E-Mobility' as the sustainable EV solution in various colleges/institutions to facilitate and promote skill development in the EV industry and make the youth of India ready for the future. The proposed CoE will integrate exclusive EV lab research support & deep skilling in EV through specialisations & certifications.

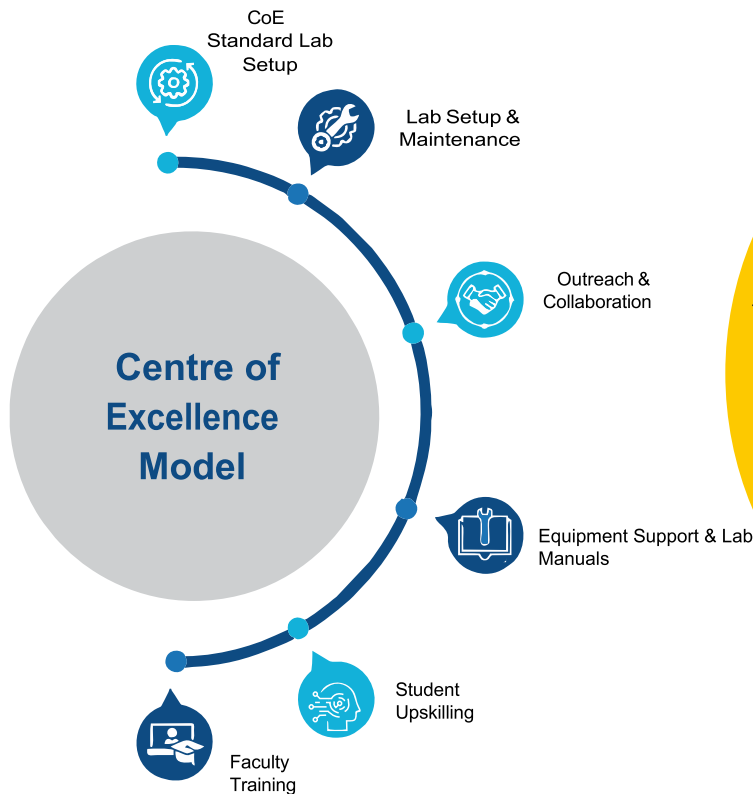
Our Programmes are designed to meet the demand by providing individuals with the necessary skills to work on electric vehicles, including battery systems, charging infrastructure, electric motors, power electronics, and other components. Additionally, our training programmes can assist individuals and organizations in developing new business models, designing, and developing EV products, providing maintenance and repair services, and creating new job opportunities. This proposal intends to offer your esteemed institution the opportunity to set up a "Center of Excellence (CoE) in E-Mobility" by L&T EduTech. The CoE will be supported by the industry and the EV ecosystem.

EV Landscape in India

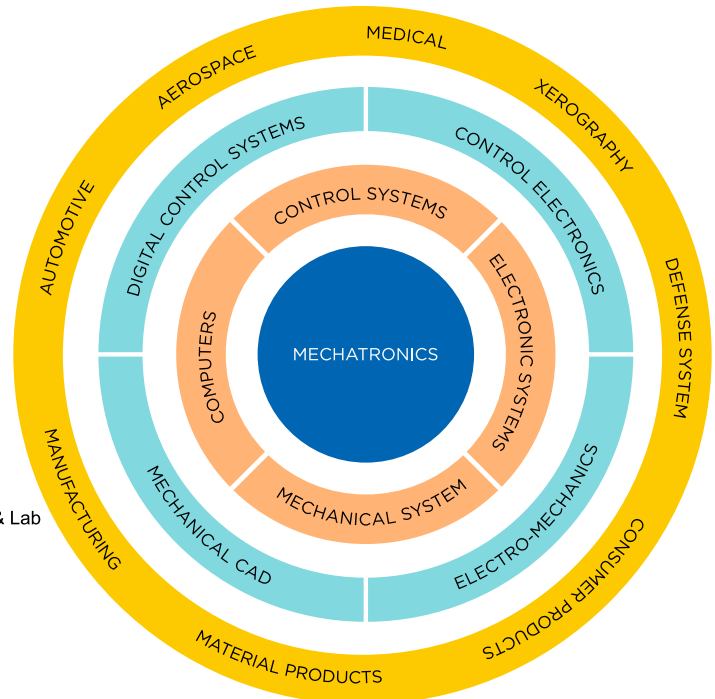
India's automotive industry is the fifth largest in the world. The EV market in India is expected to multiply from approximately 0.38 million units in 2020 to 6.34 million units by 2027, with a CAGR of 44% between 2020 and 2027. Although India's EV charging infrastructure is still in its nascency, India aims to install 4,00,000 EV charging stations across the country by 2025.

The Indian government has implemented several policies and incentives to encourage the adoption of e-mobility, including subsidies, tax exemptions and the development of charging infrastructure. These policies aim to attract investments and promote the manufacturing and use of e-mobility. Few government policies and initiatives include FAME India, PLI scheme for Automobile and components industry, National Electric Mobility Mission etc.

Centre of Excellence



Mechatronics Engineering Expertise Areas



L&T EduTech shall set up a standard lab which will act as a Centre of Excellence for EV training and hands-on learning. The e-mobility lab will consist of two equipment sets namely, Lab equipment for Two-wheeler segment and Lab equipment for Electronics & Embedded.

Benefits for Students

CoE in E-mobility & EV Technology : L&T EduTech shall develop, set up and deliver a sustainable Electric Vehicle specific 'CoE' at DAV University.

Faculty training & lab manuals: All necessary training at both student and faculty levels shall be provided and delivered by the technical team of L&T EduTech and its partners along with lab support.

Research and development: Encourage and support research and development activities in the field of e-mobility and EV technology. Provide facilitation for research and development, such as grants, projects, and access to research facilities.

Hands-on training & projects: L&T EduTech shall offer two specialization stacks and certification programmes on EV to the students of the institution. The programmes are blended with self-learning, hands-on training, and industry projects.

Industry Partnerships: Partner with major players of the EV industry for placements, internships, on-site knowledge, and exposure.

Outreach and collaboration: Engage with industry stakeholders, policymakers, and other organizations to promote collaboration and knowledge sharing. Host seminars, workshops, and conferences to disseminate knowledge and build relationships with the wide community.

Skills Landscape for EV

The rapid growth of EV industry in India is creating new job opportunities across various skill levels.

With around 400 million people in need of mobility solutions by the year 2030, India is currently the fifth-largest automotive industry in the world and has the potential to become one of the top three in the future.



EV sales in India are predicted to exceed 6.34 million units by 2027, with the industry providing more than 10 million direct and 50 million indirect jobs by 2030. The key skills required for different job roles in the EV industry are as follows:

Research & Development

Skills Required

- Electrical Engineering
- Mechanical Engineering
- Material Science
- Software Development

Manufacturing

Skills Required

- Production Processes
- Machine Operations
- Assembly Line Management
- Quality Control

Service & Maintenance

Skills Required

- Electrical & Electronic Systems
- Diagnostic Tools
- Troubleshooting Techniques

Data Analytics & Software

Skills Required

- Data Analytics
- Software Development
- Machine Learning

Sales & Marketing

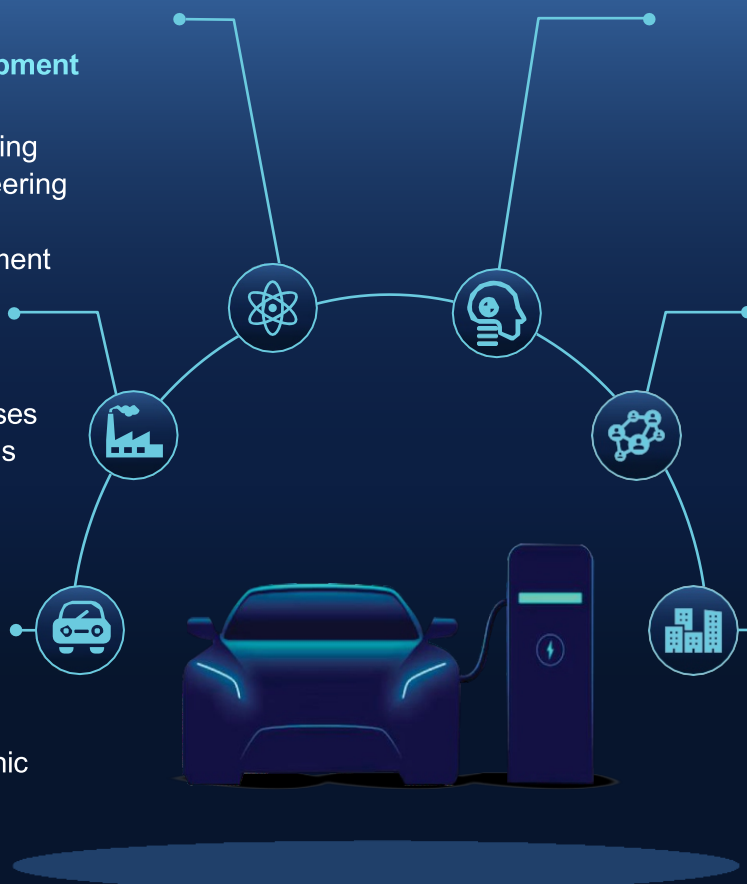
Skills Required

- Foundation of EV
- Communication Skills
- Consumer Behaviour
- Marketing Strategies

Infrastructure Development

Skills Required

- Electrical Engineering
- Project Management
- Regulatory Compliance
- Civil Infrastructure



Center of Excellence with L&T EduTech

"Leveraging L&T's expertise in innovative e-mobility training solutions, COE is empowering individuals and organizations to contribute to the growth and success of the EV industry in region. COE is providing various training programmes for students and working professionals that cover the necessary skills and knowledge to excel in the dynamic and rapidly growing EV industry."



Objectives

- » To setup a CoE which focuss on skilling, faculty training, research & development through hands-on training & projects.
- » To provide a comprehensive training solution in the field of electric vehicles covering all major aspects of EV technology including electrical, electronics, automotive, mechanical expertise, and computer applications.
- » To deliver advanced-level training in EV technology from scratch, with a precise blend of self-paced and live instructor-led sessions, hands-on exercises and projects.
- » To incorporate the possibility of innovation, career support and industrial skill sets by working with industry partners and delivering a highly extensive, detailed and industry-oriented training solution.
- » To equip participants with the necessary skills and knowledge to widen their career opportunities and direct their expertise towards evident success.
- » To enable and support institutions & organizations on their research & development goals specific to EV.

Standard EV Lab Setup

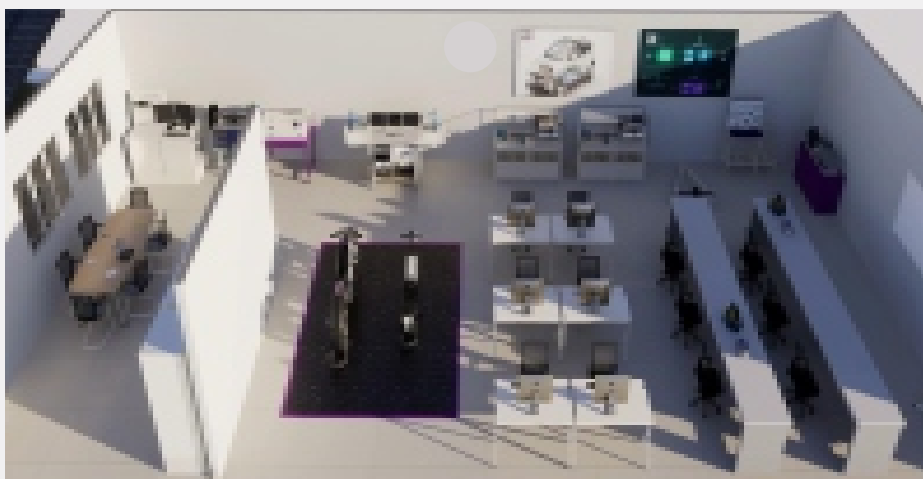
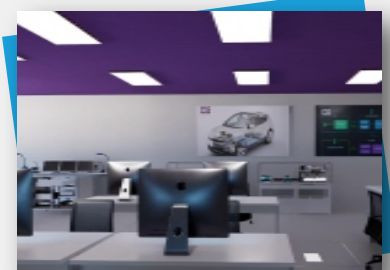
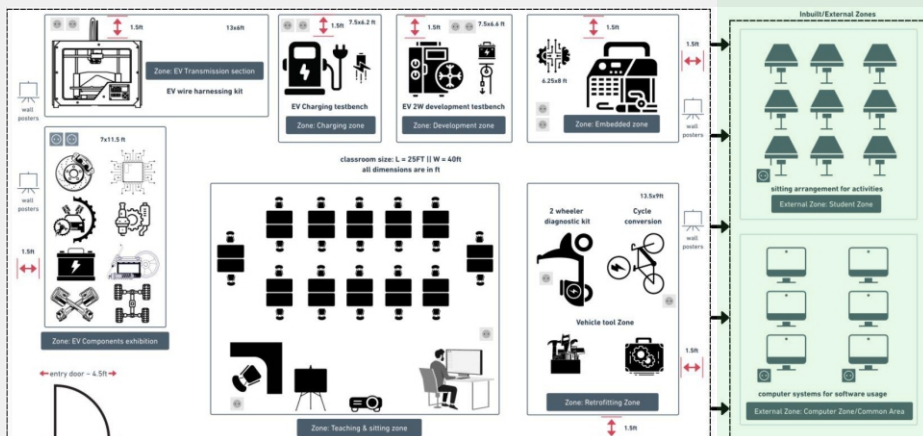
The floor includes 9 zones, of which the "Student Zone" for classroom teaching and the "Computer Lab Zone" for simulation and modeling practices

Skilling on E-Mobility and Electric Vehicle Engineering



Zone	Name of Equipment Zone	Purpose
Z-1	EV Components Exhibition	Display of components of an EV system
Z-2	EV Transmission Section	EV Wire Harnessing Kit
Z-3	Charging Zone	EV Charging Testbench
Z-4	Development Zone	2W Development Testbench
Z-5	Embedded zone	Electronics and Embedded Kits
Z-6	Retrofitting Zone	Two-Wheeler Retrofit Solution Testbench
Z-7	Teaching & Sitting Zone	For trainers and learners during long practical sessions. Relevant furniture & faculty computer to be provided by college.
Z-8	External Student Zone	External Classroom - for theory classes
Z-9	External Computer Zone	External Computer lab - for Software-based EV modeling & designing

EV Lab Layout



Courses delivery by L&T Edu Tech

Centre of excellence (COE) L&T Edu Tech shall directly impart training on the next generation e-mobility technology to the students of DAV University as per the following

Sr no.	Course Name	Credits	Nature of Course	Semester
1	IT Primer#	3	PC*	I
2	Critical Thinking, Design Thinking, Leadership & Teamwork#	3	PC	II
3	Foundation of EV and Hybrid Vehicles##	3	PC	III
4	Automotive Mechanics for EV##	3	PC	IV
5	EV Battery Technology & Power train Development##	3	PC	IV
6	Applied Industrial IoT\$	3	PC	V
7	EV Power Electronics & Embedded Systems##	3	PC	V
8	Industrial Applications of Microcontrollers–A Practice-based Approach\$	3	PC	V
9	EV Mechanical Design Development & Analysis##	3	PC	V
10	EV Product Development, Homologation & Hydrogen FCEV##	3	PC	V
11	Digital Technologies in CPS, IoT and Cloud in Manufacturing\$	3	PC	VI
12	EV Charging Infrastructure, Vehicle Testing and Homologation##	3	PC	VI
13	PE– I Choice from L&T EduTech: • Cyber Physical System for Industrial Applications\$	3	PE**	VI
14	PE–II Choice from L&T EduTech (Choose any 1): • EV Vehicle Design and Analysis## • Artificial Intelligence and Edge Computing\$	3	PE	VI
15	PE–III Choice from L&T EduTech: • Project Management for Professionals\$	3	PE	VI
16	Cognitive Manufacturing–Machine Vision & AI\$	3	PC	VII
17	EV FEA Analysis##	3	PC	VII
18	Collaborative Robotics in Manufacturing with AI, ML and IIoT\$	3	PC	VII
19	PE – IV Choice from L&T EduTech (Choose any 1): • EV PCB Design and Data Analytics## • Chip based VLSI Design for Industrial Applications\$	3	PC	VII
20	PE – V Choice from L&T EduTech (Choose any 1): • EV Data Analytics and Cyber Security## • Finance for Professionals\$	3	PC	VII
21	5 days Immersion followed by EV specific project work of 15 -20 hrs duration	4 Credit Equivalent	-	VIII

* PC – Program Core Courses (mandatory)

** PE – Program Elective Courses (optional)



Competitive and
affordable fee structure



Scholarship for
meritorious students



Programmes blend traditional
and modern learning
experience with technology in
relevance to the industry



A fast track outcome
based teaching
strategy to keep you
ahead of the time.



Students' exposure
to relevant industry
experts



Pathway to multiple
career options in the
professional world

www.davuniversity.org

admission@davuniversity.org

CONTACT: 70870-17551 | 70870-17552 | 1800-1800-190

Jalandhar - Pathankot, National Highway (NH 44), JALANDHAR - 144 012, Punjab



[davuniv](#)



[davuniv](#)



[davuniv](#)



[davunivtv](#)



[davu insta](#)