

## A Brief Report on Six Weeks (30 Hours) Online Value Added Course on “Electric Vehicle: Technology” Organized by Department of Electrical Engineering from 06 September 2022 To 20 October 202

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Dear All

Department of Electrical Engineering, Integral University Lucknow organized a 6 weeks online value-added course on ‘Electric Vehicle Technology’ from 06<sup>th</sup> September 2022 to 20<sup>th</sup> October 2022. The course was designed for UG and PG Students for all streams of education. A number of students from various branches registered in the course. The course was successfully convened by Dr. Monauwer Alam, Head, Department of Electrical Engineering and conducted by Prof. M. A. Mallick, Dr. A. J. Ansari, Dr. Mohd. Khursheed and Dr. M. Atif Siddiqui, all from Department of Electrical Engineering, Integral University. There was a daily one hour interactive training session through ILI, Google meet with Quiz on the weekend. The students attended the training with dedication. The distribution of e-Certificate was based on student’s attendance and performance in the quizzes and attainment of minimum qualifying marks.

### Key highlights of the training

- It was an online interactive training under the skill development programs of Department
- Total 82 students from various branches registered for the course.
- Zero fees for the entire period of the training.
- Modeling and Simulation of Electric Vehicle on MATLAB Simulink
- 67 students successfully completed the course and received an e-Certificate.

The Training Sessions were addressed by the following resource persons:

Module I,III	 <b>Prof. Mohammad Arifuddin Mallick,</b> EE, IU	Introduction: Sustainable Transportation, A brief history of HEVs, Architectures of HEVs, Challenges and Key Technology of HEVs: Hybridization of the Automobile, Vehicle Basics Basics of the EV, Basics of the HEV, Basics of Plug-In Hybrid Electric Vehicle (PHEV) Basics of Fuel Cell Vehicles (FCVs), Solar hybrid EVs Batteries, Ultra-capacitors, Fuel Cells, Controls: Introduction, Different batteries for EV Battery Characterization, Comparison of Different Energy Storage Technologies for HEVs, Battery Charging Control, Charge Management Storage Devices, System Flywheel, Hydraulic, Fuel & Hybrid Fuel Cell Energy Storage & Battery Management System
Module II, VI	 <b>Dr. Asif Jamil Ansari,</b> EE, IU	HEV Fundamentals: Introduction, Vehicle Model & Performance, EV Power train Component Sizing Vehicle-to-Grid Technology, Power Electronics in HEVs: Switching, AC-DC, DC-AC conversion Electronic devices and circuits used for control and distribution of electric power, Thermal Management of HEV Power Electronics Modeling of EV: Introduction to MATLAB Simulink, Basic Modeling and Simulation, Modeling and Simulation of EV - I Modeling and Simulation of EV - II
Module IV	 <b>Dr. Mohd Khursheed,</b> EE, IU	Electric Motors in EVs/HEVs: BLDC motors, Induction Motor Permanent Magnet Motor Drives Switched Reluctance Motors Speed Sensors and Current Sensors used in EVs
Module V	 <b>Dr. Mohammad Atif Siddiqui,</b> EE, IU	Need of controllers, Controllers used in EVs/HEVs Types of controllers Techniques used in controllers, Merits and demerits

Time-Table

Day/Period	I 9:00- 10:00	II 10:00- 11:00	III 11:00- 12:00	IV 12:00- 1:00	V 1:00- 2:00	VI 1:00- 2:00	VI 3:00-4:00
Monday	-----	-----	-----	-----	-----	-----	Lecture Through Google Meet
Tuesday	-----	-----	-----	-----	-----	-----	Lecture Through Google Meet
Wednesday	-----	-----	-----	-----	-----	-----	Lecture Through Google Meet
Thursday	-----	-----	-----	-----	-----	-----	Lecture Through Google Meet
Friday	-----	-----	-----	-----	-----	-----	Lecture Through Google Meet

Sample Certificate



Certificate Number: 637f15dd-4304-4093-bdde-056640e3bed3

This is to certify that **RITESH KUMAR** (ID number 2000101495)

has successfully  
completed the Six Weeks Online Value Added Course (VAC) on

**EVT-22-01 ELECTRIC VEHICLE TECHNOLOGY**

organized by  
Department of Electrical Engineering  
Under the aegis of Human Resources and Development (HRDC) & Department Quality Assurance Cell (DQAC)  
in the duration 06-09-2022 to 20-10-2022

Issue date: 23-11-2022

				
<b>Dr. Monauwer Alam</b> Convener, Head & Professor, EED Integral University, Lucknow	<b>Dr. Mohd. Arifuddin Mallick</b> Coordinator, Professor, EED Integral University, Lucknow	<b>Dr. Asif Jamil Ansari</b> Coordinator, Asso. Professor, EED Integral University, Lucknow	<b>Dr. Mohd. Khursheed</b> Coordinator, Asso. Professor, EED Integral University, Lucknow	<b>Dr. Mohd. Atif Siddiqui</b> Coordinator, Asstt. Professor, EED Integral University, Lucknow

With regards

Dr. Monauwer Alam  
Head, Electrical Engg. Deptt.  
Integral University, Lucknow