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Professor, EED
MMMUT Gorakhpur, India

&

Dr Navdeep Singh

Assistant Professor, EED
MMMUT Gorakhpur, India



Organized by

**Department of Electrical Engineering
MMMUT, Gorakhpur, 273010, UP,
(NAAC Grade "A" University)
<http://www.mmmut.ac.in>**

About University and Electrical Department

Madan Mohan Malviya University of Technology, Gorakhpur has been established in the year 2013 by the Government of Uttar Pradesh. It is non-affiliating, Academic & Research University after reconstituting the Madan Mohan Malviya Engineering College, Gorakhpur, established in 1962.

MMMUT has been awarded the prestigious "A" grade by the National Assessment and Accreditation Council (NAAC). The "A" grade has placed MMMUT amongst the India's most elite and prestigious Higher Educational Institutions (HEI) which is maintaining top standards in delivering and disseminating of quality education to its students. MMMUT has become the only UP State Technical University to bag "A" grade in the first cycle of the accreditation process.

The University offers nine undergraduate programs in the disciplines of Civil, Chemical, Electrical, Mechanical, Electronics & Communication Engineering, Information Technology, Bachelor of Business Administration, Bachelor of Pharmacy and Computer Science & Engineering along with twelve MTech programs and Doctoral Programs in various specializations. It is also a QIP centre for the Ph.D. program in Electrical, Mechanical and Electronics & Communication Engineering departments.

The Department of Electrical was established in the year 1962. The program is accredited by NBA in the year 2016 and reaccredited in the year 2019. The PG course with specialization of PED (Power Electronics and Drives) and C&I (Control & Instrumentation) have also been started from 2001 and 2013 respectively.



About Gorakhpur

The Gorakhpur is well connected by road and rail to all major cities Lucknow (270 Km), Varanasi (216 Km) and Patna (220 Km). Direct flights are also available from New Delhi to Gorakhpur. The MMM University of Technology is situated on Deoria road about 9 Km from Gorakhpur Junction and 5 Km from the Gorakhpur airport.



AICTE TRAINING AND LEARNING ACADEMY
FACULTY DEVELOPMENT PROGRAMME

ON

Challenges of Autonomous, and Electric Vehicle

(Sponsored by AICTE)

"No Charge for Registration, Course and Certification"

Registration on ATAL portal www.aicte-india.org/atal

Online Mode

Jan 27, 2025, to Feb, 1, 2025

Coordinators

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Professor, EED
MMMUT Gorakhpur, India

&

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MMMUT Gorakhpur, India



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About Program:

The Department of Electrical Engineering is organizing an ATAL Faculty Development Program on Challenges and Advancement for Energy Engineering.

The duration of FDP will be **one-week online Mode. It will be conducted total 13 with including 06 overseas Industrial experts' sessions.** The Course is designed for Faculty Members, Engineers, PG students and Research Scholars. The course has been designed to cover both theoretical as well as the practical concepts in the respective emerging fields of Electrical Engineering along with the tools and simulators useful for the participants for their Summer Training, Projects, and Research Work.

PROGRAM OBJECTIVE:

The objective of the course is to provide the theoretical and practical knowledge of advanced approaches

1. Recent technologies in the Electric Vehicle sector
2. Understand fundamentals of Electric Vehicles and components used.
3. Defining the component sizing (Battery Pack, Electrical Machine, Traction Inverter, DC-DC Convertor and Onboard Charger).
4. Battery Thermal Management System
5. Overview of ADAS and Autonomous vehicle Technology
6. Machine Learning Applications in Automotive Sector
7. E-Mobility Roadmap, Technologies, Opportunities, and Challenges
8. Environmental benefit by using Electric Vehicles and further optimizing the EV's components to adapt to the change.
9. To develop and promote research interest in applying different techniques to solve critical problems in EV.

Outcome for Program:

After the completion of the FDP the participants would be able to provide a theoretically sound foundation in Autonomous Hybrid Electric Vehicle's, Battery Management System along with the state-of-art research challenges in the respective areas and enhance the quality of education imparted in Institutions on recent development and utilize the same in various applications.

Contents of the Course

The Course provides in-depth coverage on the following areas such as use of application of Fuel cell (Hydrogen Energy), Solar cell, Battery, Super capacitor and advanced devices with different configured advance converter as considered with controller prospects. It is generalized by different topic under these categories to fulfil the depth Knowledge about Electric Vehicle:

- Electric Drives for EV Propulsion system
- Challenges in BMS controller
- Overview of Electric Vehicle technology
- Optimizing Electric Vehicle Fast Charging Station Resources for Diverse Users
- BEV Vs FCEV: Comparative Evaluation on Carbon Footprint.
- AI application for Autonomous Vehicle
- Power electronics for precision agriculture by electrified vehicle traction and implement systems
- Scenario OF Electric vehicle for Indian Market
- Second Generation Of Battery For EV
- EV charging: A review or reliability issue in Power converters
- Integrated Electric Vehicle Charging with multi-functional features
- Advanced Power Interfaces for integration of Energy vectors
- Challenges in Electric Vehicle controller

The resource persons for the FDP shall be the faculty of the Institute itself, eminent speakers from other IIT's / IIIT's / NIT's/ Abroad Academic & Industry Delegates/ Abroad University/ Central and State University.

Course Duration

Faculty Development Program on Challenges and Advancement for Energy Engineering, from Jan 27, 2025, to Feb, 1, 2025

Eligibility Criteria

The faculty members of the AICTE approved institutions, Engineers, Research scholars, PG Students, Participants from Government/ Pvt Institution, Teachers, and staff of host institution.

Registration

- [1] **ATAL FDPs are free, and no fee will be charged from any participants.**
- [2] **The certificates shall be issued to those participants who are registered on ATAL portal www.aicte-india.org/atal and attend the program with minimum 80% attendance and score minimum 70% marks in the test.**

Evaluation of participants:

- The certificates shall be issued to those participants who are registered on ATAL portal www.aicte-india.org/atal and attend the program with minimum 80% attendance and score minimum 70% marks in the test.
- A test shall be conducted (online) by coordinator at the end of the program.
- Feedback must be shared by participants through portal available on their login.

Address for Communication

The applicants are requested to send a scanned copy of the complete registered on ATAL portal www.aicte-india.org/atal by e-mail to Before Jan 20, 2025, before **the time of starting of course.**

For any further query, you may contact:

Dr. A. N. Tiwari, Professor,
Dr. Navdeep Singh, Assistant Professor,
Course Coordinator, Department of Electrical Engineering
MMMUT, Gorakhpur-273010, India
Contact email: antee@mmmut.ac.in , nsee@mmmut.ac.in

Important Dates

Last date of registration: Jan 20, 2025.

Intimation of selection: Jan 21, 2025

Program dates: Jan 27, 2025, to Feb, 1, 2025

CHALLENGES OF AUTONOMOUS, AND ELECTRIC VEHICLE

(Sponsored by AICTE)

A ONE WEEK FACULTY DEVELOPMENT PROGRAM

Dates: Jan 27, 2025, to Feb, 1, 2025, Timings: From 6:00 PM to 9:00 PM

Mode: Online

FDP Application No.: 1730886430

"No Charge for Registration, Course and Certification"

Registration on ATAL portal www.aicte-india.org/atal Registration has to done only through AICTE ATAL Registration Link www.aicte-india.org/atal

Steps to Register:

1. Sign up as a participant and fill in your details.
2. Go to FDPs → ATAL → January → ENGINEERING → Online. *(Tip: Use Ctrl+F and search for FDP Application No.: 1730886430)*
3. Select the Institute: MMMUT Gorakhpur.
4. Register for the FDP titled: " CHALLENGES OF AUTONOMOUS, AND ELECTRIC VEHICLE"
5. Upload NOC or Valid Institute ID card or Joining Letter with ID proof

Contents of the Course

The Course provides in-depth coverage on the following areas such as use of application of Fuel cell (Hydrogen Energy), Solar cell, Battery, Super capacitor and advanced devices with different configured advance converter as considered with controller prospects. It is generalized by different topic under these categories to fulfil the depth Knowledge about Electric Vehicle:

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- Challenges in Electric Vehicle controller

The resource persons for the FDP shall be the faculty of the Institute itself, eminent speakers from other IIT's / IIT's / NIT's/ Abroad Academic & Industry Delegates/ Abroad University/ Central and State University.

Day 1 Jan 27, 2025	Day 2 Jan 28, 2025	Day 3 Jan 29, 2025	Day 4 Jan 30, 2025	Day 5 Jan 31, 2025	Day 6 Feb, 1, 2025
06:00 – 6:30 PM Inauguration	6.00- 7.30 PM Session 3 Topic: Optimizing Electric Vehicle Fast Charging Station Resources for Diverse Users	6.00- 7.30 PM Session 5 EV Propulsion System Control and Design	6.00- 7.30 PM Session 7 EV charging: A review or reliability issue in Power converters	6.00- 7.30 PM Session 9 Topic: Challenges In electric vehicle controller	2.00- 3.30 PM Session 11 Topic Advanced Power Interfaces for integration of Energy vectors
6.30- 8.00 PM Session 1 Overview of Electric Vehicle technology	7.30 -9.00 PM Session 4 Topic: Integrated Electric Vehicle Charging with multi- functional features	7.30 -9.00 PM Session 6 Topic: Scenario OF Electric vehicle for Indian Market	7.30 -9.00 PM Session 8 BEV Vs FCEV: Comparative Evaluation on Carbon Footprint.	7.30 -9.00 PM Session 10 Topic. Power electronics for precision agriculture by electrified vehicle traction and implement systems	3.30- 5.00 PM Session 12 Second Generation of Battery For EV
8:00 – 09:30 PM, Session 2 Topic: Wireless Power Transfer for e-Transportation: Magnetics design and control strategies for Electric Vehicle Charging					5.00- 6.30 PM Session 13 AI application for Autonomous Vehicle
					2:00 – 4:00 Online Test & Feedback
					4:00 – 5:00 Valedictory Session

Upload NOC or Valid Institute ID card or Joining Letter with ID proof

NOC format

Subject: NOC for attending ATAL Online FDP

Ref No.: 1730886430 (Application No.)

Date:

To Whomsoever It May Concern

This letter is to express No objection on **Mr./Mrs./Ms./Dr.** -----

--**Participant name, name of the institute**, in attending ATAL Online FDP on **Challenges of Autonomous, and Electric Vehicle** conducted at **Madan Mohan Malaviya University of Technology, Gorakhpur, Uttar Pradesh** from **27th Jan to 1st Feb 2025.**

This Certificate is issued as per the requirement of AICTE for successful conduction of ATAL Online Faculty Development Program.

Yours Sincerely,

Sign & Stamp
Institute Name and Address