‘येथे बहुतांचे हित ।’

Marathwada Mitra Mandal’s College of Engineering, Karvenagar, Pune

An Autonomous Institute

5 DAYS HYBRID MODE FACULTY DEVELOPMENT PROGRAM

On

“Power Converters using MATLAB-Simulink”

12th to 16th January, 2026

In Association with

MathWorks-DesignTech Systems Pvt. Ltd. and IETE

Organized by

Department of Electronics and Telecommunication Engineering

DesignTech
Technology for designing the future
ISO 9001:2015 Certified

MathWorks

IETE
THE INSTITUTION OF ELECTRONICS AND TELECOMMUNICATION ENGINEERS
सह वीर्यं करवावहै

About Marathwada Mitra Mandal

The trust "Marathwada Mitra Mandal's, Pune" was established in 1967 by Hon. Late Shri. Shankarraoji Chavan, Former Home Minister, Govt. of India as the "Founder President". The trust had started its activity with the objective of providing hostel or similar accommodation in Pune to the students. This trust is established through the inspiration of socially and educationally charged personalities, with the motto "Welfare of Masses". Mass education, co education and dedication towards overall development of the region are watchwords of the trust. At its various educational campuses, the trust has created excellent facilities of education catering to Architecture, Interior Design, Management, Law, Commerce, Pharmacy, Engineering, etc, which provide excellent education to about 15,000+ students.

About Marathwada Mitra Mandal’s College of Engineering

MMCOE has been recognized as the BEST COLLEGE by SPPU. MMCOE is one feather in the cap of Marathwada Mitra Mandal Pune, from the academic year 2006-2007. It offers six engineering programs (Computer, Electrical, E&TC, Information Technology, Mechanical and Al&DS), six PG Programs as well as PhD Research Center in Computer Engineering. It houses 3000+ students and 230 staff members. Along with the focus on core academics, college also takes care of overall personality development of the students. The college has an active robotics cell, NCC, Training and Placement cell, Entrepreneurship development cell, Foundation for MAKE IT HAPPEN Center for Invention Innovation Incubation (FMCIII) etc. The students are motivated to actively participate in co-curricular and extracurricular activities. They have brought many laurels to the Institute in the events such as Smart India Hackathon, BAJA, SUPRA, Efficycle, Gokart, ROBOCON, CODE etc.

About Department

The Electronics and Telecommunication Engineering Department at MMCOE offers an autonomous, flexible, and industry-aligned curriculum under SPPU affiliation, ensuring continuous academic relevance. Established in 2006, the department has shown strong academic growth, expanding from 60 to 180 B.Tech seats and introducing an M.Tech program in VLSI & Embedded Systems in 2024. NBA accreditation reflects its commitment to quality education and outcome-based learning. The department is supported by experienced and dedicated faculty and a robust mentorship system that provides personalized academic and career guidance. With state-of-the-art laboratories, Centres of Excellence in Embedded Systems and Signal Processing, and strong industry–institute interaction through projects, internships, expert talks, and certifications, students gain hands-on and real-world exposure.

The department emphasizes skill development in advanced domains such as Embedded Systems, VLSI Design, AI-enabled Signal Processing, and Advanced Communication Systems, while fostering an innovation and research-driven culture. Active student professional bodies and technical clubs promote leadership, teamwork, and soft skills, ensuring career readiness, holistic development, and industry preparedness for future engineers.

Instructions for Participants:

- **No Charge** for Registration and Certification
- Attendance for all sessions is mandatory .
- Test will be conducted in online mode for certification at the end of the program

Mode & Registration:

Live sessions (Hybrid mode)

Registration Link:

https://forms.gle/6XBB48aZ1oMSKFNWA

Last date for receipt of registration form:

11 January 2026

About the Program:

The Faculty Development Program on "Power Converters using MATLAB–Simulink" is designed to provide in-depth knowledge of power electronic systems with a special focus on Electric Vehicle (EV) applications. The program emphasizes simulation-based analysis of battery systems, power converters, and EV charging infrastructure using MATLAB–Simulink. Participants will gain hands-on experience in modeling, control, and performance evaluation of EV subsystems, enabling a strong understanding of system-level challenges, safety aspects, and validation techniques relevant to modern power electronics, EV technology, and industry-oriented applications.

Program Objective:

- To understand EV system challenges, battery systems, and power electronic converters using a simulation-based approach.
- To develop skills in modeling and simulation of batteries, BMS, and EV chargers using MATLAB–Simulink.
- To analyze converter operation, switching techniques, and control strategies for EV applications.
- To enhance faculty capability in simulation-driven teaching, research, and industry-oriented applications in power electronics.

Expected Outcomes:

1. On the Completion of this FDP, participants from various backgrounds should be able to achieve the following knowledge and skills as outcomes:
2. Model and simulate EV battery systems and Battery Management Systems (BMS) in MATLAB–Simulink.
3. Analyze and design DC–DC and AC–DC power converters for EV charging applications.
4. Evaluate system performance, safety, and control behavior through integrated simulations.
5. Apply simulation-based learning to improve teaching effectiveness and research competency in power electronics and EV systems.

Resources Persons:

- **Mr. Nikhil Sonavane.**
  Senior Customer Success Engineer
  MathWorks
- **Mr. Kunal Subhash Khandelwal**
  Senior Application Engineer
  MathWorks@DesignTech Systems
- **Mr Vishwas Vaidya**
  Automotive Consultant

Topics to be covered:

- Technical challenges and system-level constraints in Electric Vehicles.
- Battery modeling fundamentals and battery pack development using MATLAB–Simulink.
- Battery Management System (BMS) algorithms: State of Charge (SOC), State of Health (SOH), and protection mechanisms.
- Simulation-based analysis of battery safety and performance.
- EV charging challenges and charging infrastructure considerations.
- Modeling and control of EV chargers using MATLAB–Simulink.
- Power electronic converters for EV applications (DC–DC and AC–DC converters)
- Integrated EV system modeling, simulation, and validation.

Eligibility:

Faculty members from academic and research institutions, PG & PhD scholars Professionals in IT Consultancies, Industries

QR Code to join Whatsapp Group:

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Dr. A. S. Bhatlawande.

HOD E&TC, MMCOE, Pune.

Coordinators:

Mr. S. D. Pasalkar, Assistant Professor

Email:swanandpasalkar@mmcoe.edu.in

Contact No: 8605592551

Mr. V. K. Sambhar, Assistant Professor

Email: vedantsambhar@mmcoe.edu.in

Contact No: 8805192409

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