About B.N.M. Institute of Technology

B.N.M. Institute of Technology (BNMIT), established in 2001, is one of the top preferred institutions for technical education in Karnataka and has been granted Autonomous Status by UGC and VTU since June 2021. Located at Banashankari 2nd Stage, Bengaluru, BNMIT offers undergraduate programs in Electronics & Communication Engineering, Electrical & Electronics Engineering, Computer Science & Engineering, Information Science & Engineering, Mechanical Engineering, and Artificial Intelligence & Machine Learning, along with postgraduate programs in VLSI Design & Embedded Systems, Computer Science & Engineering, and MBA. The institute is accredited by NAAC with an 'A' Grade and UG programs are accredited by NBA, New Delhi (valid up to June 2028). BNMIT has received Rs. 2.87 Crores from DST, NewGen IEDC, Govt. of India and Rs. 60 Lakhs for establishing the AICTE-IDEA Lab to foster innovation and prototype development. The institution has strong rankings including 8th Rank in India by IIRF National Ranking, 15th by Times Survey, 23rd by Academic Insights, 31st by Outlook I-Care, and 35th by DataQuest, supported by advanced laboratories, Centers of Excellence, strong industry collaborations, and a vibrant innovation ecosystem.

About the EEE Department

The Electrical & Electronics Engineering (EEE) Department at B.N.M. Institute of Technology (BNMIT) has over 23 years of excellence with 1,000+ alumni excelling in leading organizations. The department has a team of dedicated faculty members committed to quality teaching and student learning. It hosts Centers of Excellence in Electric Vehicle Technology and High Voltage Testing, promoting applied research in modern electrical domains. The department has received an AICTE-MODROBS grant of ₹13 Lakhs for upgrading the Relay & High Voltage Laboratory and ₹33 Lakhs funding under DST–NewGen IEDC to support student innovation and prototype development. Strong industry collaboration is ensured through MoUs with Manubhu Technology Pvt. Ltd., M+ACER Automotive Systems Pvt. Ltd., and VECTOR Infomatiks, etc., offering internships, consultancy, and joint research activities. With advanced infrastructure and strong industry engagement, the department continues to nurture skilled and industry-ready electrical engineers.

About IEI

The Institution of Engineers (India) [IEI], established in 1920 and incorporated under Royal Charter in 1935, is the nation's largest multi-disciplinary professional body of engineers. With a legacy of over a century, IEI connects more than two lakh engineers across 15 disciplines through 124 Centres in India and 6 Overseas Chapters. Recognized as a Scientific and Industrial Research Organization (SIRO) by the Government of India, IEI promotes research, professional certification, and global collaboration. It conducts the prestigious AMIE examinations, publishes international journals in partnership with Springer Nature, and represents India in leading global engineering forums. Through conventions, workshops, and technical activities, IEI continues to empower engineers and drive innovation for national development.

Karnataka State Centre

The Karnataka State Centre of The Institution of Engineers (India), established in Bengaluru in 1934 with the blessings of Sir M. Visvesvaraya, is one of the most vibrant and active Centers in the country. The Centre plays a pivotal role in advancing engineering knowledge through seminars, symposia, workshops, and conventions at national and international levels. It also conducts AMIE examinations and guidance classes, fostering professional growth and lifelong learning. The Centre coordinates ten Local Centers across Karnataka, ensuring outreach to diverse engineering communities. Situated in a prime location in Bengaluru, it serves as a hub for technical excellence, collaboration, and innovation, continuing its rich legacy of service to the engineering fraternity.

About the Workshop

Artificial Intelligence (AI) and Machine Learning (ML) are transforming modern electrical engineering by enabling data-driven decision-making, automation, and predictive intelligence in power systems and electric mobility. With the shift toward smarter and more sustainable infrastructures, AI & ML methods are becoming crucial for applications such as predictive maintenance, fault detection, battery health estimation, energy demand forecasting, load profiling, and optimal grid monitoring. Through this workshop, participants will gain hands-on experience in applying search algorithms for grid maintenance, implementing regression and classification models for forecasting and protection systems, and exploring clustering and reinforcement learning techniques for consumer analytics and EV charging optimization. The program is designed to enhance practical skills and problem-solving capabilities, empowering learners to apply intelligent solutions for improved reliability, efficiency, and innovation in future electrical networks.

Key focus areas: Introduction to AI & ML for Intelligent electrical systems, hands-on-data analytics for smart grid & EV systems

Five Day Online National Workshop

on

Applied AI & ML in Electrical Systems: Learn, Analyze & Innovate

15th - 19th December 2025

Organized by

Centre of Excellence - EV Technology, Department of Electrical & Electronics Engineering

B. N. M. Institute of Technology

An Autonomous Institution under VTU. Approved by AICTE

In Association with

The Institution of Engineers (India)

Karnataka State Centre, Bengaluru

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- **Smt. Kurva Swetha,** Asst. Professor, Dept. of EEE

Program Schedule (6pm to 8pm)

Day 1:

Introduction to AI & ML its applications in Electrical Systems + Case Study Presentation.

Day 2:

AI Search Techniques (BFS/DFS/A*) for Grid Maintenance.

Hands-on: BFS & DFS Implementation in Power Networks, A* Search for Smart Grid Optimization.

Day 3:

Supervised Learning – Regression Models for Energy Forecasting.

Hands-on: Energy Consumption Prediction using Linear regression, Regression algorithm to predict the battery life of Li-Ion batteries.

Day 4:

Supervised Learning – Classification Techniques – Decision Tree, KNN, Naïve Bayes in Protection.

Hands-on: Transmission Line Fault Detection using Decision Tree, fault Type Visualization.

Day 5:

Unsupervised Learning – Clustering, Reinforcement Learning-Q learning.

Hands-on: Smart Meter Data Analysis using K-Means, Reinforcement Learning — EV Charging Cost Optimization using Q-learning.

Eligibility: Industry Delegates, faculty members from Electrical & Electronics Engineering, Mechanical Engineering, Artificial Intelligence and Machine learning, Automobile Engineering and the students of all departments from various institutions can participate in this national workshop.

Important Dates:

Last date for Registration: **12th December 2025**

Registration Fee:

300 INR for IEI Members (Faculty/Industry Professional/Research Scholars).
400 INR for Non-IEI Members (Faculty/Industry Professional/Research Scholars).
100 INR for UG & PG students.

Registration Fee Payment Details:

Account Name: BNMIT-ABEEE
Account Number: 1147101032160
Bank Name: Canara Bank
Branch: Banashankari 2nd Stage
IFSC Code: CNRB0001147

Scan the QR code for online payment

Click here for Registration after payment

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Certificates will be provided to all the participants after successful completion of the workshop.