

The Department of Electrical Engineering at IEST Shibpur, is one of the best in the country providing a dynamic and scholarly environment wherein students learn independently and in collaboration with others to develop a disciplined as well as innovative approach to their careers as professional engineers, researchers or teachers. The department offers 10-semester dual degree (B. Tech. and M. Tech.) course and 4-semester postgraduate M.Tech. degree course in Electrical Engineering. The department also offers research programmes leading to Ph.D. degree.

The department started producing graduate electrical engineers from 1936 as part of the erstwhile B. E. College. Post-independence, when the nascent nation had just started building the power plants that have been instrumental in realizing the dreams of modern India, many of the visionaries, planners and implementers were the students of this department. The postgraduate degree was first offered in 1955 and the first Ph. D. Scholar from the department came out in 1959.

The faculty members of the department are a vibrant combination of experience and innovation. Other than excellence in teaching, they have also proven their worth by a large number of papers in peer-reviewed journals and in prestigious international conferences. State-of-the-art research is being carried out by the faculty members with their scholars in diverse areas like:

- Drives (Switched Reluctance Motor, Induction Motor, PMSM/ BLDC motors etc.)/Photo-Voltaics/FACTS applications/Electric Vehicle/Multi-level Inverters etc.)

- o Controlled Induction Motor drive
- o Linear Induction Motor Drives
- o FACTS devices
- o Matrix Converters
- o FPGA applications to IM control
- o Dual Converters
- o Permanent Magnet Motor Drives Incorporating Damper Bars for Electrified Vehicles

- Induction heating
- Attraction & Repulsion type levitation
- Welding applications

- Axial flux SR Motor fabrication and testing
- Fault Diagnosis and Condition Monitoring
 - o FPGA Friendly Algorithm for Fault Diagnosis of Induction Motor
 - o Machine Learning Based Smart Relays
 - o Dispersible Nano particle for Nano fluid Application
 - o Sensor-less On-line Condition Monitoring of Induction Motor
 - o Incipient Fault Detection and Diagnosis of Induction Motors Using Neuro-Fuzzy Techniques

- Efficient staple yarn characterization unit with multi- sensor fusion
- Discrete wavelet transform-based repetitive controller
- Analysis and Design of Robust Voltage Stabilizers for Thermal Power Station
- Global Voltage and Security Indicators in Longitudinal Power supply (LPS) System
- Design of Adaptive Controllers for Implantable Drug Delivery Systems
- Discrete event dynamical system
- Robust Stabilisation of Time Delay Systems
- Robust and Nonlinear Control
 - o Real time Observer based LSVF Control of Magnetic Levitation System
 - o Real time Sliding Mode Control of a Two Tank system
 - o Real Time Hybrid PID Control

The faculty members are also actively engaged in good number of collaborative and sponsored research projects. In the last few years, 5 research projects with a funding of 1 crore or more have been executed (funding from Central Government agencies) However, more than 10 research projects have also been funded by non-Government agencies. At present, about 15 different funded projects are being executed in the department.

However, the jewels in our crowns are still our students. They have worked with dedication and excellence in India and abroad, in industries and in academics and earned laurels for themselves and their alma mater. They have topped all-India examinations, won best thesis awards and been adjudged best employees in their companies.