The largest multidisciplinary department

Electrical Engineering is one of the oldest department of IIT Kanpur. Over the past 53 years of its existence it has produced several distinguished alumni who have helped in shaping and creating a better tomorrow. The department has a rich tradition of teaching and research and is widely recognized to be a pioneer in Electrical Engineering education in India.

It offers B.Tech., M.Tech., dual-degree and PhD programs with a total number of 40 highly qualified faculty members and around 200 students, selected through competitive examinations like JEE and GATE, who will be passing out this year.

The research interests of the faculty members encompass a wide gamut of sub-disciplines of Electrical Engineering. Collaboration with faculty members from other disciplines, both within and outside the institute, is encouraged. The research activity of the department includes fundamental research, sponsored and consultancy projects, and is carried out with active participation of the students, faculty and research engineers. The lab facilities and the infrastructure are regularly upgraded and are well supported by the institute and the industry

Why IITK?

The students here in IITK study a well and rigorously planned curriculum that exposes them to many of the important fields encapsulated under electrical engineering preparing them for various challenges they will face in the industry. Along with the strong theoretical framework, students have exposure to practical fields through intensive lab courses, summer internships and specializations like the 2 semesters long B.Tech Project (for the B.Tech students) and the 3 semesters long thesis work (for Dual degree and M.Tech students)

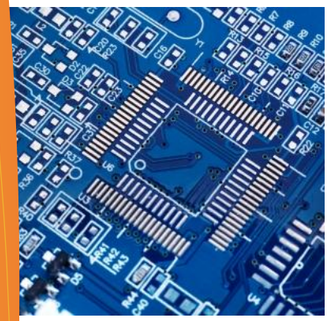
About **Us**

Department of Electrical Engineering

IIT Kanpur

SPO, IITK

Specializations Offered



Microelectronics and VLSI

- Analog VLSI Circuits
- Fiber Optic Systems
- Solid State Devices
- Semiconductor Device Modeling
- IC Fabrication Technology
- Digital VLSI Circuits
- High Frequency Semiconductor Devices and Circuits

RF and Microwave

- Monolithic Microwave IC Design
- Microwave Circuits
- RFID
- Microwave Measurement
- Fiber Optic Communication
- Advanced Electromagnetics
- Antenna Analysis and Synthesis

Power Systems

- Simulation of Modern Power Systems
- Advanced Power System Stability
- Electrical Insulation
- HVDC Transmission
- High Voltage Behavior of Dielectrics
- Economic Operation & Control of Power Systems

Electrical Engineering

Communication and Networks

- Wireless Communication
- Information and Coding Theory
- Detection and Estimation Theory
- Stochastic Processes
- Cryptography and Coding
- Photonic Networks and Switching
- Digital Communication Networks

Digital Signal Processing

- Digital Speech processing
- Digital image processing
- Digital Video processing
- Wavelet transforms
- Mathematical methods
- Statistical signal processing

Control Systems and Drives

- Basics of Modern Control Systems
- Nonlinear Systems
- Digital Control
- Fuzzy Set, Logic & Systems
- Control Techniques in Power Electronics
- Fundamentals of Electric Drives

UG Departmental Courses

Signals and Systems
Analog Electronics
Control Systems
Electrical Engineering
Digital Electronics
Principles of Communication
Power Systems
Communication Systems
Solid State Device Physics
Digital Signal Processing
Power Electronics

Interdisciplinary Electives Chosen

Data Mining
Machine Learning
Computer Vision
Computer Architecture
Randomized Algorithms
Operating Systems
Semiconductor Device Processing
Theory of Computation
Knowledge Based Systems
Semiconductor Nanostructures

Internships

After 3rd year, the students join various national and international universities and companies for a period of about 10 weeks and gain valuable exposure to the professional life and the hot research topics at present.

Labs and Facilities

- Antennas Laboratory
- Anechoic Chamber
- Bioinformatics Laboratory
- Computer Vision Laboratory
- Semiconductor Device Fabrication Laboratory
- Data Mining Laboratory
- Electromechanical Energy Conversion Laboratory
- Intelligent Systems Laboratory
- High Voltage Laboratory
- Power Electronics Laboratory
- Microwave Circuits Laboratory
- Microwave Laboratory
- Mobile Communications
- NAMPET Laboratory
- Fibre and Quantum Optics Laboratory
- Multimedia Wireless Networks Laboratory
- Wireless Communications Coding and Cognitive Radio Laboratory (WC3 laboratory)

- Networks Laboratory
- Networked Control Systems Laboratory
- Organic Electronics Laboratory
- PCB Fabrication Laboratory
- Power Management Laboratory
- RFID Laboratory
- Static Controller Laboratory
- Virtual Instrumentation Laboratory
- VLSI Laboratory
- Microwave Imaging and Material Testing (MIMT) Laboratory
- Multimodal Information Processing Systems Laboratory
- Power System Simulation and Research Laboratory
- Optoelectronics and Nanofabrication Laboratory
- Intelligent Health Monitoring Systems Laboratory
- Control System Laboratory
- Microprocessor and Microcontroller Laboratory

Infrastructural Giant

The Department is constantly modernizing the infrastructure and laboratory facilities. It is endowed with well-equipped laboratories in several of the areas listed in department details. Several major sponsored R&D projects provide excellent teamwork among the faculty, research engineers, staff and students. Some of these are the Technology Development Mission in Distribution Automation, ERNET, and Telematics. Some R&D Cells of leading industries are already functioning or likely to start in new areas associated with the Department.

Industrial Projects

- Protection Devices for Urban and Rural Exchanges, BSNL
- Variable Phase Input Power Plant Design for Telecom Application, BSNL
- Developing control strategies for coordination of the 10 motors that drive and steer ISRO's Lunar Rover
- DRDO Sponsored Project on Visual Motor Control of a Seven Degrees of Freedom Robot Manipulator
- Cognitive Radio, Indo-UK Advanced Technologies Centre of Excellence in Next Generation Networks

- Health Monitoring and Fault Diagnosis of Air Compressors and Motors component under the head Passive and Active RFID and Location Technology Research funded by The BOEING Company, USA
- Modular Power Converters for Wind-Solar Plant, GE Bangalore
- Electromagnetic Simulation and Optimization of Outer-Rotor Surface Permanent Magnet Motor, IHI Japan
- Transceiver Chip for the next generation of network in Telecommunication sponsored by British Council, UK
- Stability and Performance of Photovoltaics under Indo-UK Solar Energy Initiative

Changing The World

The EE department undertakes a wide range of sponsored research projects. These projects have mainly been funded by Government agencies such as DST, DOE, CSIR, MHRD, Ministry of Defense and industries etc. An illustrative list of major research projects, currently being undertaken, is as shown. Apart from these projects, several departmental faculty members are actively involved in setting up a recently approved interdisciplinary research centre in the area of 'Display Technology' funded by Samtel R&D Electron Devices Limited and also working on a 'Center of Excellence in Networking'.

Contact Us

Dr. S. Qureshi
Professor and Head
EE Department

Office location: WL 211
Tel: +91-512-2597133
Fax: +91-512-2590063
Email: qureshi@iitk.ac.in

Dr. Ghosh Bahniman
Assistant Professor and Member,
Students' Placement Committee
EE Department

Office location: WL 121B
Phone: +91-512-2596550
Fax: +91-512-2590063
Email: bahniman@iitk.ac.in

Students' Placement Office Website: www.iitk.ac.in/spo

Electrical Engineering Departmental Website: www.iitk.ac.in/ee

Katta Phani Kumar
PG Placement Coordinator
EE Department

Mob: +91-8004444382
email: phani@iitk.ac.in

P Suryachandra Prakash
PG Placement Coordinator
EE Department

Mob: +91- 8601609282
email: suryc@iitk.ac.in

Anurag Dash
UG Placement Coordinator
EE Department

Mob: +91-9559754564
email: anuragd@iitk.ac.in

Nitesh Kumar
UG Placement Coordinator
EE Department

Mob: +91-9559753649
email: niteshkr@iitk.ac.in