

COMMUNICATION SYSTEM ENGINEERING PLACEMENT BROCHURE 2023 - 2024



INDIAN INSTITUTE OF TECHNOLOGY PATNA

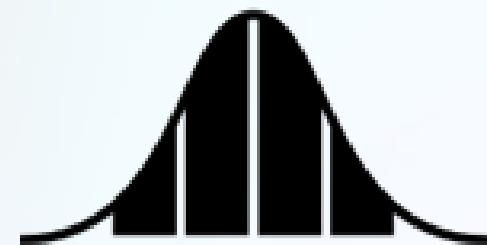
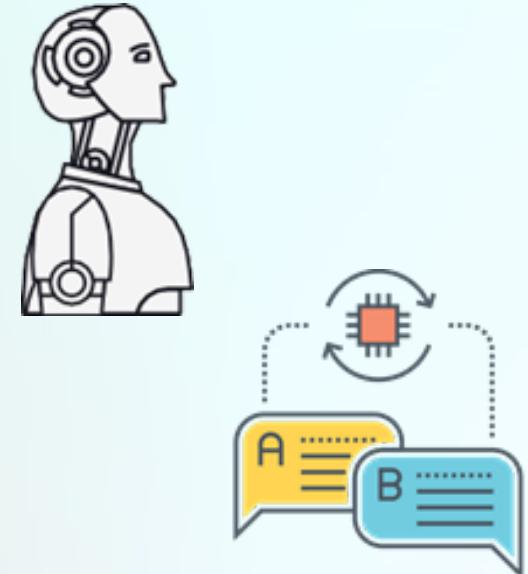
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ABOUT US

The Department of Electrical Engineering (EE) has been evolving since the inception of IIT Patna in the year 2008. Communication system engineering Group is part of the Electrical Engineering department of IIT Patna. The major objective of the department is to focus on high quality research, both fundamental as well as applied, in the areas of telecommunication, signal/media processing, communication networks, information theory, biomedical, Optoelectronics, RF and Microwave etc.

CURRICULUM

The curriculum is designed to provide students with an in-depth theoretical background and practical training in wireless communication, signal processing, photonics, video and image processing, and antenna design necessary for a professional career or higher education. The core courses of communication sysytem program coupled with the most flexible elective-driven structure in the institute gives the students ample opportunity to hone their skills in varied fields of interest ranging from telecommunication, network security, video survilliance, software defined radios and networks, Intelligent reflecting surfaces & metasurfaces, RF IC design and other applied fields. The courses offered here are taken by professors who are leading researchers in their domain..



MESSAGE FROM HOD



PROF. PREETAM KUMAR
HEAD OF DEPARTMENT
ELECTRICAL ENGINEERING

"It is with great pleasure that I introduce the students of Communication Engineering graduating next year after going through the 2-year MTech course. The communication branch in IIT Patna is one of the most advanced in the country, where the focus is given to both research and applications.

The students have completed their core courses which have built a solid platform upon which they can proceed with their projects. The projects will mold them further so they can achieve specializations within their chosen sub-field. They will be ready for the industry where they will strive undeterred towards advancement and excellence.

We would cordially welcome the industries in India and abroad to be part of placements this year and hope to create and strengthen the relationships between our institutions and train our students so that they can be the future of India and the world at large and IIT Patna can produce competent engineers and scientists with good human values."

COURSES

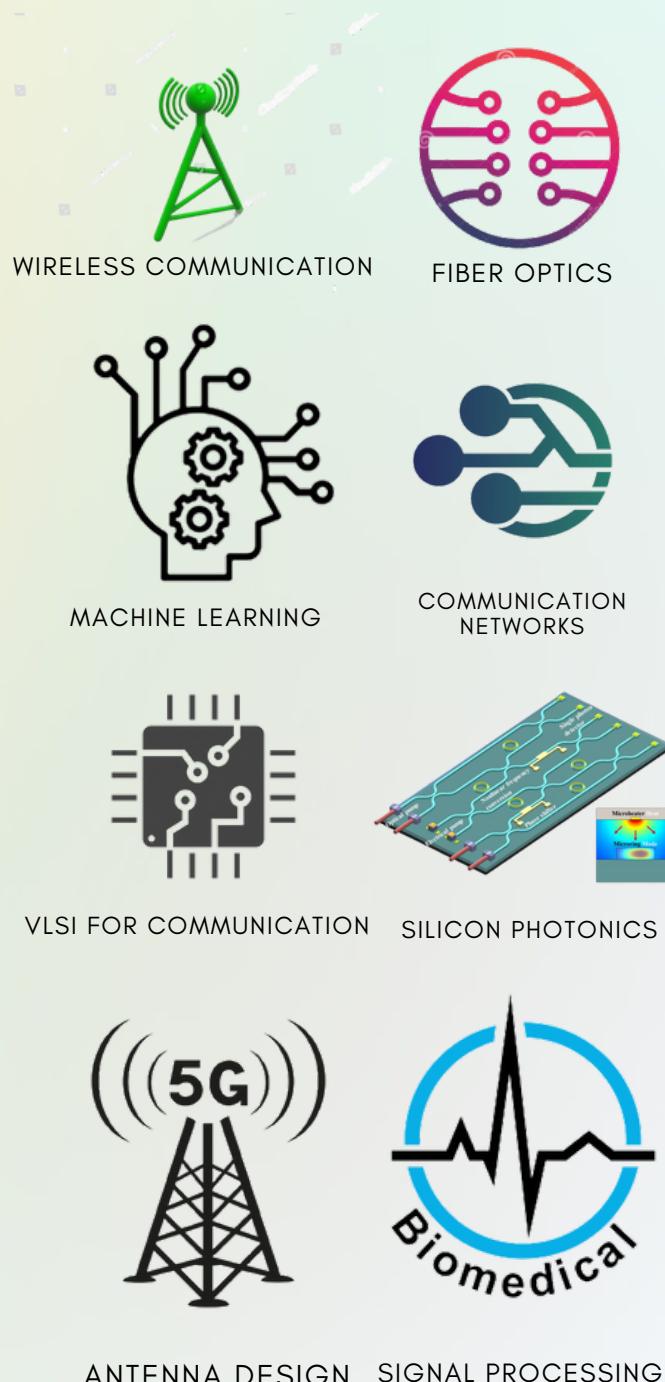
Core Courses

- WIRELESS COMMUNICATION.
- ADVANCED DIGITAL COMMUNICATION.
- INFORMATION THEORY & CODING.
- COMMUNICATION NETWORKS.
- OPTICAL COMMUNICATION.
- TECHNICAL COMMUNICATION.

Labs



- WIRELESS COMMUNICATION LAB
- OPTICAL COMMUNICATION LAB.



Elective Courses

- DIGITAL IMAGE PROCESSING.
- VLSI ARCHITECTURE DESIGN AND IMPLEMENTATION.
- BIOMEDICAL SIGNAL PROCESSING.
- ANTENNA THEORY AND DESIGN.
- PATTERN RECOGNITION USING MACHINE LEARNING.
- DEEP LEARNING FOR VIDEO SURVEILLANCE SYSTEM.
- SILICON PHOTONICS
- SOFTWARE DEFINED RADIOS.
- RANDOM SIGNAL AND FILTERING THEORY.
- RF IC DESIGN

RESEARCH LABS



1

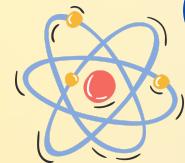
Wireless Communication Lab

Research Areas: Study of Waveform Contenders for 5G, MC Modulation Schemes for Satellite COM, Massive MIMO, Millimetre Wave Technology, Designing of Transceiver for Cognitive Radio, Channel Estimation using Machine Learning Algorithm, Wireless Sensor Network, Internet of Things, Cyber Physical Systems.

2

Optical Communication Lab

Research Areas: Free Space Optical Communication, Under Water Optical Communication, Digital Signal Processing for Optical Communication, Active/Passive Silicon Photonic Devices



RESEARCH LABS



3 Digital Signal & Image processing Lab

Research Areas: EEG & ECG Signal Analysis, Breast and Blood Cancer Detection, Medical Image Watermarking, 3D / 4D Image reconstruction, Compressive sensing, weak signal detection, Tea leaf diseases detection, Multimodal video signal processing.

4 RF & Microwave Engineering Lab

Research Areas: Meta materials, Intelligent refelecting surfaces, Software defined Radios, Antenna Design, RF IC Design, Different filters like Planar filter, Tuneable filter, RF MEMS based filter, Oscillators, Power Amplifier Design, Computational Electromagnetics, Frequency Synthesizers.



DEPARTMENT EVENTS

IEEE INTERNATIONAL SYMPOSIUM ON "6G MOBILE WIRELESS COMMUNICATION"

The "IEEE International Symposium on 6G Mobile Wireless Communication" took place at the Indian Institute of Technology, Patna, starting on December 9th, 2022. The event aimed to explore the format, standards, and requirements of 6G, discussing scientific challenges and possible solutions. Prof. Chaturvedi discussed India's journey from 1G to 6G, emphasizing the need for innovation. Dr. P. Hanumant Rao highlighted 5G developments in India and the challenges in implementing 6G. Topics such as Intelligent Reflecting Surfaces, Radar and Antenna Technology, and Positioning/Localization were discussed. The symposium had around 150 participants from prestigious institutions, fostering collaboration.



PROF. PREETAM KUMAR
DEPT. OF ELECTRICAL ENGINEERING



DR. AMIT KUMAR SINGH
DEPT. OF ELECTRICAL ENGINEERING

DEPARTMENT EVENTS

- INDO ITALIAN WORKSHOP ON "PHOTONICS FOR COMMUNICATION, SENSING, AND PROCESSING".
- A SEVEN-DAY WORKSHOP ON "BRAIN-INSPIRED/NEUROMORPHIC COMPUTING FOR RESPONSIBLE AI".
- A COURSE ON THE "ARTIFICIAL INTELLIGENCE FOR HEALTHCARE TECHNOLOGY AND MANAGEMENT" BY IIT PATNA & AIIMS PATNA
- A SEVEN-DAY WORKSHOP OF "IOT-BASED HEALTHCARE AND ROLE OF AI" UNDER MINISTRY OF EDUCATION.



CURRENT BATCH



Abhinash Dash
Research Area: Fiber Based
Instruction Detection System



Dewa Kumar
Research Area: Communication
Networks, Sensors & IOT



Kumari Surbhi
Research Area: Ultra Massive
MIMO Antenna for Terahertz
applications



Akash H Pandey
Research Area: Intelligent
Reflecting Surface for Terahertz
Communication in 6G



Gaud Vikram Brahamanand
Research Area: Noma based
emitter identification using DL



Nilabh Ranjan Singh
Research Area: Indoor
Localization using Machine
Learning



Debdoot Mitra
Research Area: Image Processing
for Multimedia Applications,
Stochastic resonance,



Gaurav Kumar
Research Area: Multimodal Signal
Processing using Machine
Learning & Deep Learning



Sumit Saurabh Jha
Research Area: Image
processing using Machine
Learning



CURRENT BATCH



Rajani Rajput
Research Area: Advance intelligent video surveillance system



Ankit Kumar Pandit
Research Area: Orbital angular momentum multiplexing (OAM) Communication



Preeti
Research Area: FPGA Implementation in Wireless Communication System



Adarsh Goenka
Research Area: Wireless Communication Using Machine Learning



Nilkamal Kumar
Research Area: Wireless communication using SDR



Manish
Research Area: Signal Processing for Wireless Communication



Kishan
Research Area: Audio Signal Processing using Deep Learning



Kshitiz Dixit
Research Area: mm-wave, Terahertz Losses, and Metamaterial Reflect



2023 PASSOUTS



Kumar Utkarsh
Internship: Bosch
Full Time : Bharat Electronics Limited



Kunja Kishore Mohalik
Full Time : Bharat Electronics Limited



Rishi Kishore
Internship: MediaTek
Full Time : PPO from MediaTek, Cewit, IIT Madras



Vidyesh Bondre
Internship: MediaTek
Full Time : Mathworks



Rachit Kashyap
Internship: Bosch, Mavenir
Full Time : Mavenir



Nitin Bhartiya
Internship: NXP Semiconductor
Full Time : PPO from NXP



Jagdish Sahu
Internship: Intel Corporation
Full Time : HCL Technologies



Kapil Garg
Internship: NXP Semiconductor
Full Time : PPO from NXP, Airport Authority of India



Rohit Bhavesh
Full Time : Amazon India



Rajnish Kumar
Internship: STMicroelectronics



Avinash Kumar
Internship: Intel Corporation



INTERNSHIPS



SAMSUNG Research

SIEMENS

PLACEMENTS



Qualcomm



TPC OFFICIALS



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