

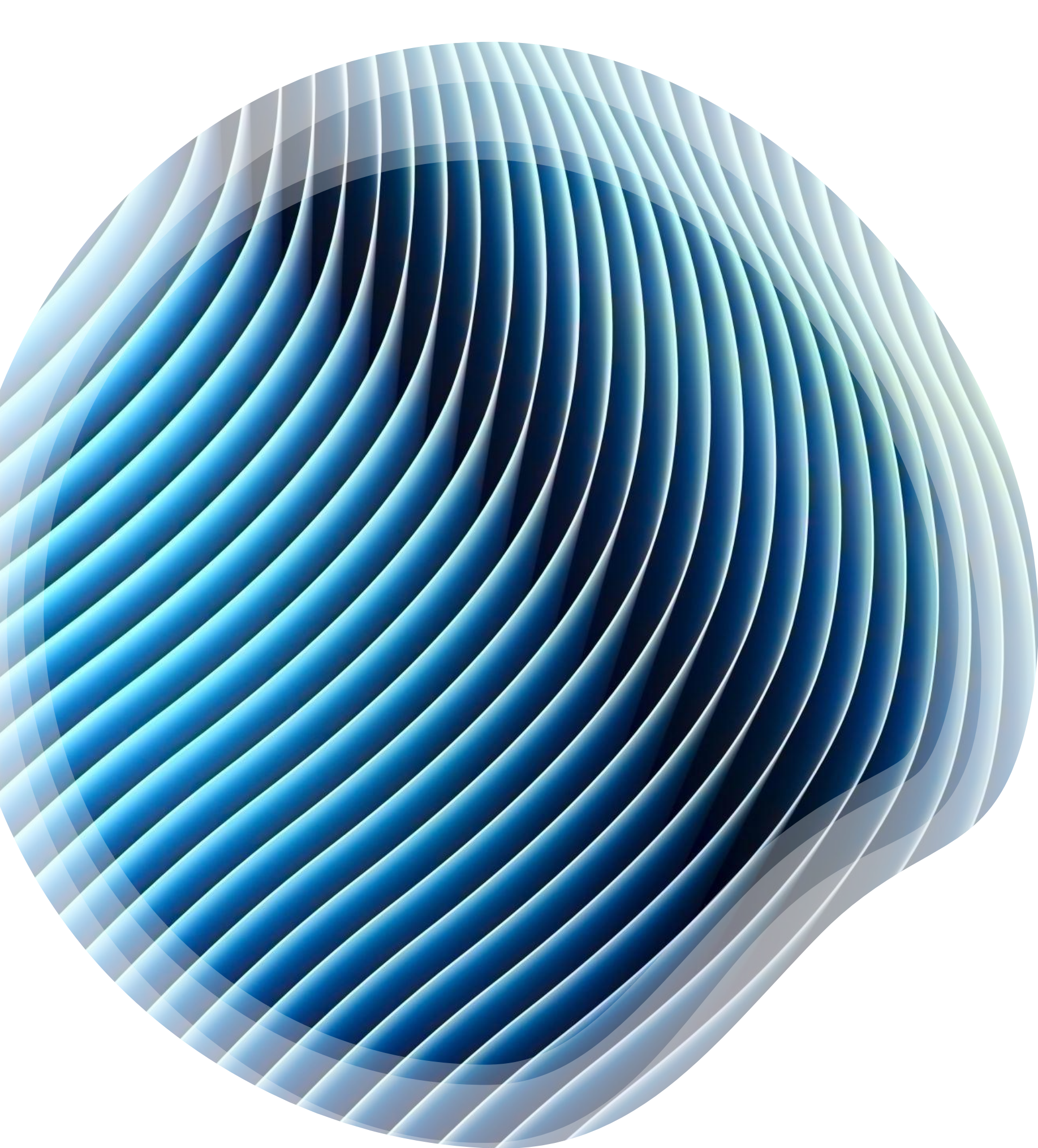
భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్  
भारतीय प्रौद्योगिकी संस्थान हैदराबाद  
Indian Institute of Technology Hyderabad



# Department of Electrical Engineering

2024-2025





# Academics



B.Tech (4 Years)



M.Tech (2 Years)



M.Tech Research Assistantship (3 Years)



Direct PHD (M.Tech + PhD - 5 Years)



Doctor of Philosophy (5 Years)



Post Doctoral Fellowship



# About Us | EE

Welcome to the Department of Electrical Engineering. This brochure provides a comprehensive picture of the Department as it is today, 15 years after its foundation.

We focus on interdisciplinary research and teaching and actively participate in unique undergraduate and graduate programs such as BTech program in Electrical Engineering and MTech programs in Communication Signal Processing, Microelectronics & VLSI, Power Electronics & Power System and Systems & Control.

Faculty members of the department are also actively involved in fundamental and industry-oriented projects funded by many international companies, local industry, government and defense laboratories.





# Vision

Indian Institute of Technology Hyderabad will be the cradle for inventions and innovations. It will advance knowledge and scholarship to students in science, technology and liberal arts, and equip them to handle the challenges of the nation and the world in 21st century.



# Mission

*To be recognized as idolators and leaders in higher education and research, and to develop human power with creativity, technology and passion for the betterment of India and humankind.*





- The Department of Electrical Engineering (EE) at IIT Hyderabad offers a vibrant environment for undergraduate, postgraduate education and research in many areas of Electrical Engineering. We are a team of **39 faculty** (34 fulltime + 5 visiting), **516 students (212 B.Tech, 136 M.Tech and 168 PhD)** and 4 staff members engaged in cutting edge research and teaching in several frontier areas of Electrical Engineering.
- The department offers B.Tech in Electrical Engineering and M.Tech and Ph.D. in four specializations:
  - Microelectronics and VLSI
  - Communication and Signal Processing
  - Power Electronics and Power Systems
  - Systems and Control



# Why Recruit Us



Our industry-focused curriculum emphasizes skills and knowledge directly applicable to real-world scenarios.



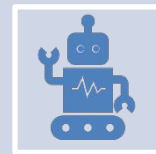
Students engage in collaborative projects with Public Sector Undertakings (PSUs) and leading industries.



IIT Hyderabad consistently ranks among the top 10 in the NIRF rankings and is currently ranked as the 8th best engineering institute in India..



Exposure to industry applications and practices is provided through expert talks, seminars, and symposiums.



Students actively participate in various clubs, such as Elektronika and Robotics, fostering practical experience and innovation.



# B.Tech. in Electrical Engineering



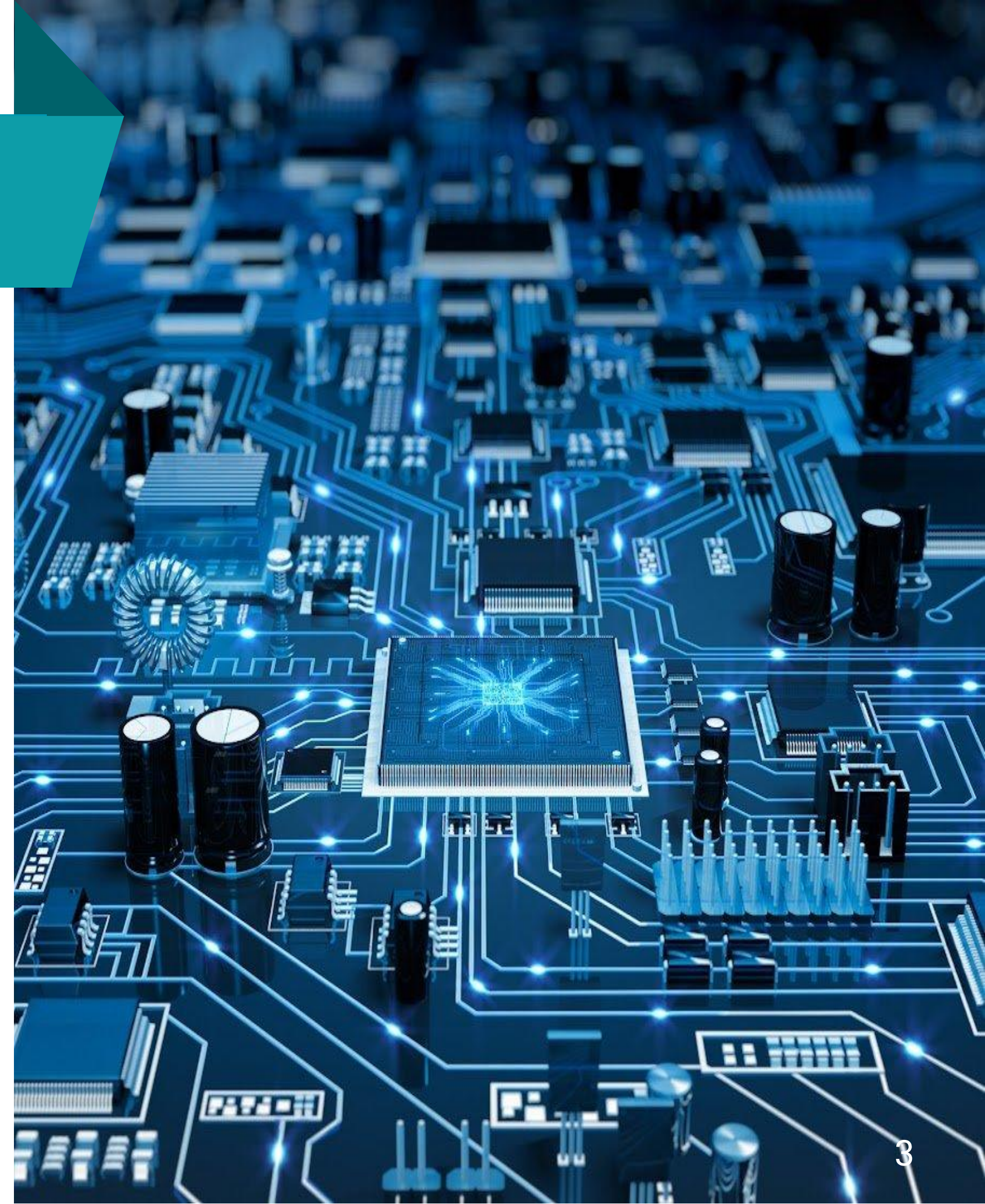
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Indian Institute of Technology Hyderabad





# About B.Tech

- The Academic programs at IIT Hyderabad adopts the Fractal Academic System, offering Majors and Minors in various disciplines. This innovative system divides courses into breadth and depth, facilitating interdisciplinary learning with a broad selection of foundational courses and advanced electives. Students have the opportunity to graduate with an additional program or branch by pursuing Majors and Minors across different streams.
- Furthermore, students are encouraged to participate in Liberal and Creative Arts through the curriculum. The Fractal Academic System supports engagement in diverse educational and extracurricular activities, promoting comprehensive development.





# Courses Offered | B.Tech

## Microelectronics & VLSI

Analog Electronics

Microprocessor &  
Computer Architecture

Intro VLSI Design

Analog Circuits

Intro to HDL

Electronic Devices &  
Circuits Lab

Analog Lab

Microprocessor Lab

Digital IC Design

## Power Electronics & Power System

Power Electronics

Power Systems

Machines Lab

Analysis & Design Of  
Power Convertors

Drives for Electric  
Vehicles

Simulation Of Power  
Electronic Convertors

## Communication & Signal Processing

Communication Systems

DSP

Machine Learning

Information Theory

Comm Lab

DSP Lab

FPGA Lab

Wireless Communication

Communication  
Networks

## Other Courses

Data Structures and  
Applications

Introduction to AI

Mobile Robotics

Applied Digital Logic  
Design

International Business

Introduction to Design  
Thinking

Macroeconomics



# Lab Facilities

Students get to experience the practical knowledge of their courses as they work in the labs as part of their curriculum such as:

- Electronic Devices & Circuits Lab
- Analog Lab
- Microprocessor Lab
- Machines Lab
- Comm Lab
- DSP Lab
- FPGA Lab



# M.Tech & PhD



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Indian Institute of Technology Hyderabad





# Communication Signal Processing and Learning

Department of Electrical Engineering is one of the most reputed department of IIT Hyderabad which offers four post-graduate programmes among which **Communication Signal Processing and Learning (CSPL)** has been one of the most demanding and advanced branch in research, teaching and innovation.

- Leading academic institution in CSPL with expertise in core communication and signal processing.
- Well-rounded curriculum emphasizing theoretical knowledge and practical skills.
- State-of-the-art labs and research facilities for staying updated with latest technologies.
- Vibrant research culture, interdisciplinary collaborations, and focus on innovative solutions

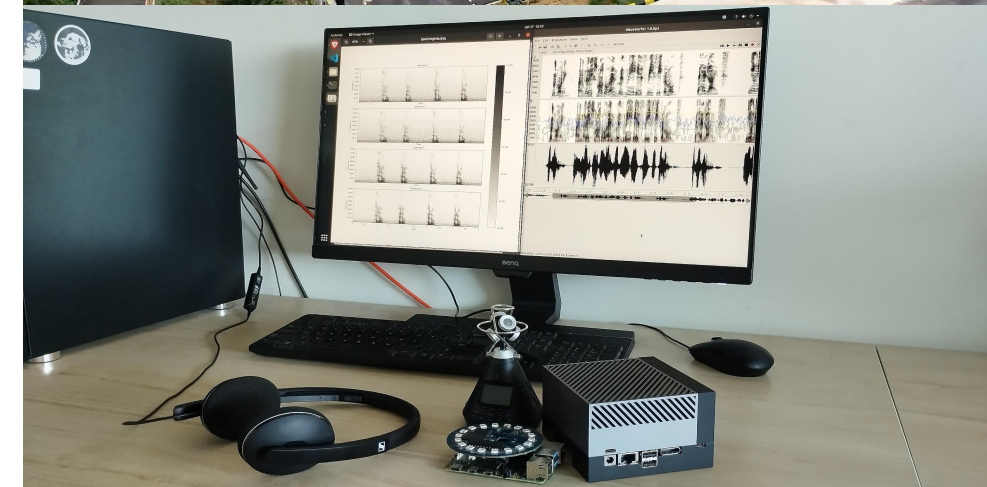


## Research Labs

- 5G Testbed Lab
- Wireless communication and Networking (WiCoN) Lab
- Speech Information Processing Lab
- Immersive Multimedia Lab
- Cognitive Radio Lab
- Wireless Networks(WiNet) Lab
- Cyber Physical Systems Lab

## Courses

- Wireless Communications
- Matrix Theory
- Digital Communications
- Random Variables and Stochastic Processes
- Information Theory, Source, and Channel Coding
- Detection theory
- Convex Optimization
- Estimation Theory
- Image and Video Processing
- Pattern recognition and ML





# Microelectronics & VLSI

Microelectronics & VLSI Branch of IIT Hyderabad caters exceptional research and innovation leading forward the Indian semiconductor industry and contributing its bit for innovation in global semiconductor Industry .

- Curriculum formulated in accordance with industrial demands as well as academic Advancement .
- Advanced Laboratories which are dedicated for upskilling students as well as leading forward technology.



## Courses

- Introduction to VLSI Design and VLSI Technology
- Digital and Analog IC Design (Theory and Lab)
- System Design Lab
- Semiconductor Device Modelling
- ICs for Wireless Communication
- Nanoelectronics: Principles and Devices
- Neuromorphic devices for AI/ML
- Embedded Programming
- Modelling of nano-scale MOSFETs
- Electronic Packaging Design
- Mixed Signal circuit design
- Fundamentals of IC Package Assembly and Manufacturing

## Research Labs

- Advanced Embedded Systems and Digital IC Design Lab
- Design of Analog RF Mixed Integrated Circuit Lab
- Electron Devices Research Lab
- Nano-X Cleanroom and Characterisation Lab
- Nanophotonics Lab
- Flexible Electronics and Nano Devices Lab
- Microfluidics lab (Laghu Lab)
- Digital Signal Processing Lab
- Device Characterization Lab
- FPGA Lab



# Power Electronics And Power System

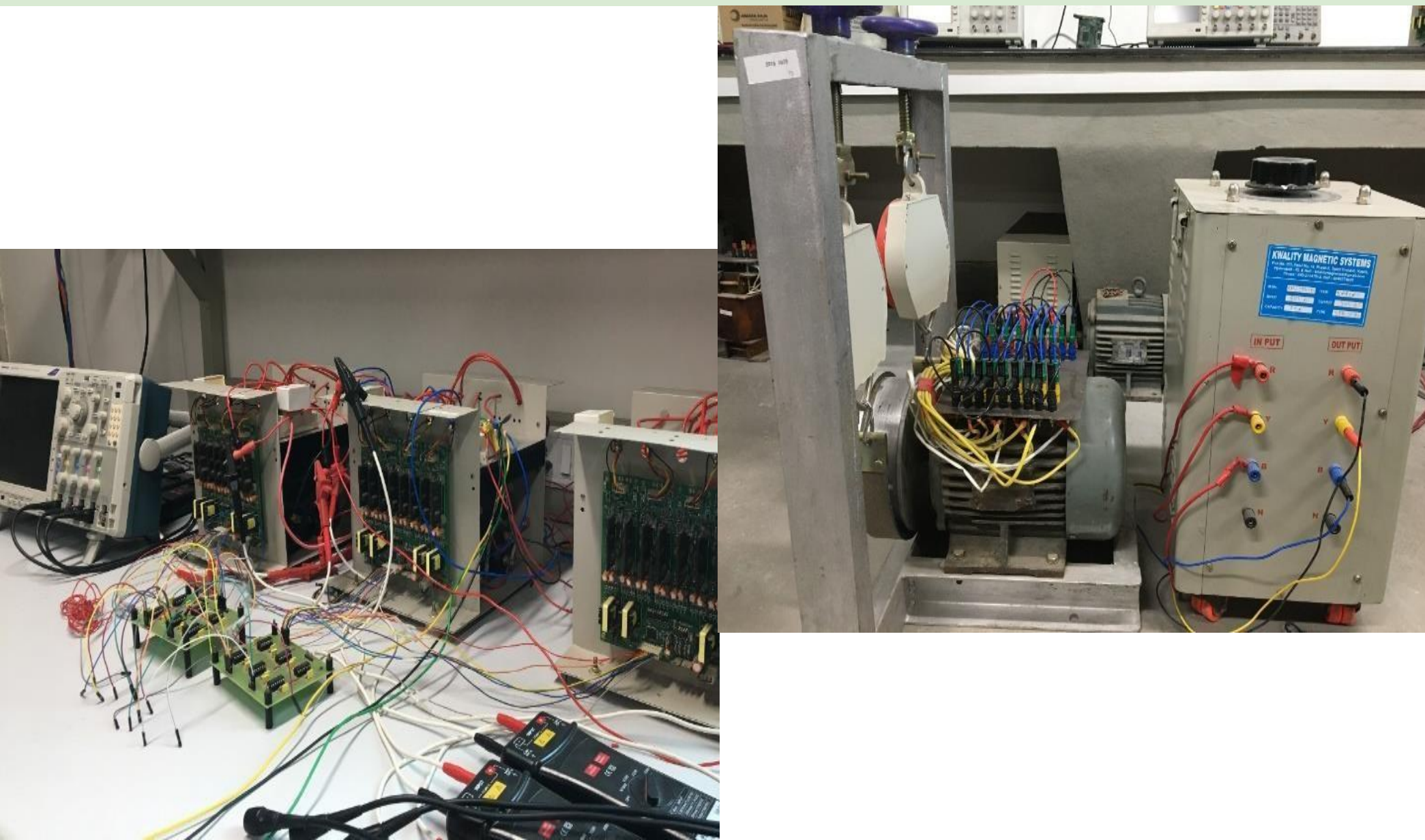
Embedded at the core of Electrical Engineering, this course offers a unique edge by integrating both power electronics and power system engineering. In today's world, where electronics control nearly every aspect and principles governing power systems, protection, and safety ratings are critical, our program stands at the forefront.

## Courses

- Power Converter Design
- Electrical Machine Analysis and control
- Power System Dynamics and Control
- Steady-state Power System Analysis
- Embedded System Design In Power Electronics
- Multilevel Converters
- Power System Protection
- Smart Grid
- HVDC and FACTS
- Power Systems Lab
- Power Electronics Lab

## Research Labs

- Advanced Power Electronics Lab(APEL)
- Smart Power Applications and Renewable Control Lab
- Dynamics and Control Lab
- Power Electronics Lab
- Renewable Energy and Power Systems Lab
- Microgrid and smart grid Lab
- Power System computation Lab





# Systems & Control

Systems and Control (SysCon) Specialization at the Department of Electrical Engineering, IIT Hyderabad is established with the vision to pioneer in the field of Systems and Control, our specialization offers cutting-edge post-graduate education and research opportunities. We are committed solving complex problems in control theory, dynamical systems, and optimization, including AI/ML applications in Process Control. Our research areas include time-optimal control, Cyber Physical Attacks and Visual Multi Object Tracking. under the mentorship of our exceptional faculty, we consistently innovate in the control domain.

## Courses Offered

- Advance Control Theory
- Optimal Control Theory
- Deep Learning
- Wireless Sensor Networks
- Digital IC Design
- Convex Optimization
- Pattern Recognition & ML
- Random Variables & Stochastic Processes
- Automotive Communication & Sensing

## Research Labs

- Advance Control & Dynamics Lab
- Wireless Network Lab(WiNeT)
- DSP Lab
- Digital IC Design Lab
- Micro Grid & Smart Grid Lab





# Faculty



Dr. Amit Acharyya  
Professor



Dr. Oves Badami  
Assistant Professor



Dr. Sushmee Badhulika  
Professor



Dr. Ravikumar  
Bhimasingu  
Associate Professor



Dr. Sumohana S.  
Channappayya  
Professor



Dr. Gajendranath  
Chowdary  
Assistant Professor



Dr. Ketan Detroja  
Associate  
Professor



Dr. Ashudeb Dutta  
Professor



Dr. Naresh Emani  
Associate Professor



Dr. Soumya Jana  
Professor



Dr. Kuchi Kiran  
Kumar  
Professor



Dr. Mohammed  
Zafar Ali Khan  
Professor



Dr. Sri Rama Murty  
Kodukula  
Associate Professor



Dr. Abhinav Kumar  
Associate  
Professor



Dr. K. Siva Kumar  
Professor



# Faculty



Dr. Shishir Kumar  
Assistant Professor



Dr. Abhishek Kumar  
Assistant Professor



Dr. Kaushik Nayak  
Associate Professor



Dr. Lakshmi Prasad  
Natarajan  
Assistant Professor



Dr. P. Rajalakshmi  
Professor



Dr. Vaskar Sarkar  
Associate  
Professor



Dr. G. V. V. Sharma  
Associate  
Professor



Dr. Shiv Govind Singh  
Professor



Dr. Aditya  
Siripuram  
Assistant Professor



Dr. Seshadri Sravan  
Kumar V  
Assistant Professor



Dr. Siva Rama Krishna Vanjari  
Professor



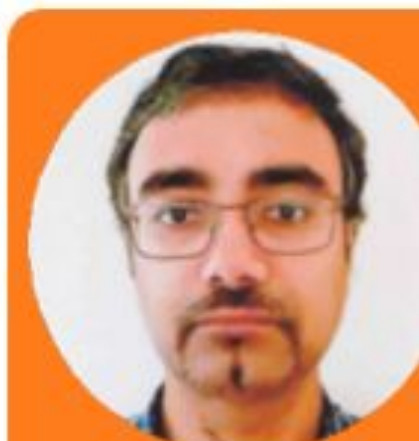
Dr. Shashank Vatedka  
Assistant Professor



Dr. Rupesh  
Wandhare  
Assistant Professor



Dr. Pradeep Kumar  
Yemula  
Associate Professor



Dr. Sundaram Vanka  
Associate Professor



# Faculty



Dr. Shubhdeep Bhattacharjee  
Assistant Professor



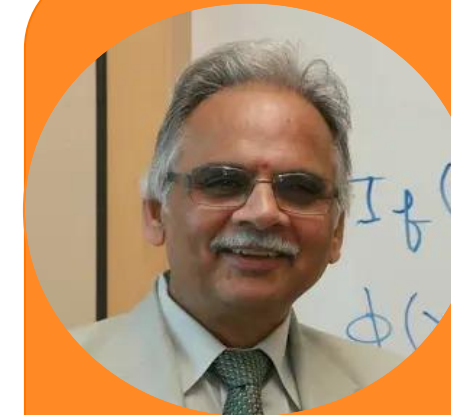
Dr. Jose Titus  
Assistant Professor



Dr. Uday B. Desai  
Professor Emeritus



Prof. B. Yegnanarayan  
(Distinguished)



Prof. Mathukumalli  
Vidyasagar National Science  
Chair Professor  
(Distinguished)



Dr. Saidhiraj Amuru  
Adjunct Assistant Professor



Dr. Krishna Kanth Avalur



Dr. Myna Vajha,  
Assistant Professor



Mr. Nixon Patel  
Adjunct Professor

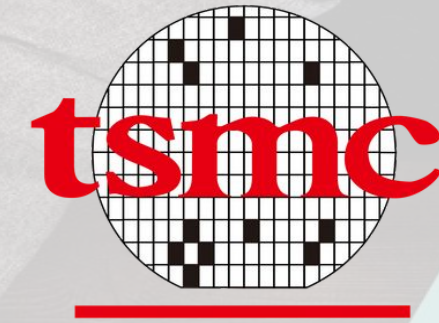


# Collaborations

The faculties have active collaborations with various academic and industry partners such as

- Intel,
- Xilinx,
- TSMC,
- Suzuki,
- Hyundai,
- Silicon Labs,
- DRDO,
- MEITY, DST, Govt. of India.

AMD  
XILINX

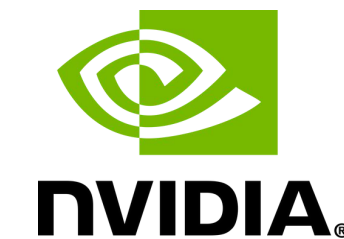


Department of Science & Technology  
Govt. of India





# Past Recruiter





# CONTACT US

## PLACEMENT COORDINATORS

NAME	CONTACT NUMBER	EMAIL ID
Kartik Laad	+91-7024560203	ee22mtech12003@iith.ac.in
Sameeruddin Sk	+91-9110519304	ee23mtech11033@iith.ac.in
Venkatesh G	+91-9963278362	ee23mtech14005@iith.ac.in
Tanooj C. S.	+91-9441683829	ee23mtech14015@iith.ac.in
Rahul Charan	+91-9515948934	ee23mtech14018@iith.ac.in
Chaitali Ghosh	+91-8777895199	ee23mtech14003@iith.ac.in
Pradipta Ghosh	+91-9674785655	ee23mtech12005@iith.ac.in
Shriya Shukla	+91-8369900794	ee23mtech12006@iith.ac.in
Shubham Dayal	+91-7766957265	ee23mtech11034@iith.ac.in
Samant Sharma	+91-8516890464	ee23mtech14014@iith.ac.in
Parv Chandola	+91-8755070190	ee22mtech12005@iith.ac.in
Jyothsna G	+91-9381255884	ee23mtech11024@iith.ac.in

NAME	CONTACT NUMBER	EMAIL ID
Vikram Semil	+91-9926832479	ee21btech11060@iith.ac.in
Abhishek Thakur	+91-7004148826	ee20resch11014@iith.ac.in
Ritesh Kumar	+91-8409626036	ee20resch11005@iith.ac.in
Annu	+91-9516362264	ee21resch01010@iith.ac.in
A C Vamshi Karthik	+91-7095156945	ee23mtech14019@iith.ac.in
Soham Chatterjee	+91-9007763944	ee23mtech14016@iith.ac.in
Tarun Gaur	+91-9997253050	ee23mtech11036@iith.ac.in
Marisetti Akhil	+91-7989156788	ee22mtech12004@iith.ac.in
Rohit Shaha	+91-8319707706	ee21btech11046@iith.ac.in
Ramashis Swain	+91-8763089195	ee23mtech14012@iith.ac.in
Sourish Chatterjee	+91-8667502460	ee22mtech02002@iith.ac.in



# CONTACT US

OFFICE OF CAREER SERVICES (OCS)  
[OFFICE.PLACEMENT@IITH.AC.IN](mailto:OFFICE.PLACEMENT@IITH.AC.IN)

PLACEMENT MANAGER  
MR. AASHISH MANDAVI  
MR. MEHUL MISHRA  
[STUDENT.PLACEMENTMANAGER@IITH.AC.IN](mailto:STUDENT.PLACEMENTMANAGER@IITH.AC.IN)

DEPT. OF ELECTRICAL ENGINEERING  
[HTTPS://EE.IITH.AC.IN](https://ee.iith.ac.in)

FACULTY IN CHARGE  
MR. MAYUR VAIDYA  
[[VAIDYAM@MSME.IITH.AC.IN](mailto:VAIDYAM@MSME.IITH.AC.IN)]

DEPARTMENT FACULTY PLACEMENT COORDINATOR  
DR. AMIT ACHARYYA  
[[AMIT\\_ACHARYYA@EE.IITH.AC.IN](mailto:AMIT_ACHARYYA@EE.IITH.AC.IN)]

Link to Recruiter's Portal - <https://ocs.iith.ac.in/login/company>  
Link to Recruiter's Portal Guide - <https://ocs.iith.ac.in/whyrecruit/howto/walkthrough>



# Thank You



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