

**VLSI & EMBEDDED
SYSTEMS**



Placement Brochure

2023-2024



CENTER FOR CAREER DEVELOPEMNT

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. The major objective of the department is to impart high-quality education and to encourage the students, comprising B.Tech, M.Tech and PhD, in pursuing research. The department offers B. Tech in Electrical and Electronics Engineering, two M. Tech programs (1. Communication System Engineering, 2. VLSI and Embedded Systems) and Ph.D. program in various specialized areas of Electrical Engineering. The major research areas of the department include Communications, Optoelectronics, Signal Processing, Image and Video Processing, VLSI and Embedded Systems, RF and Microwave, Electric Drives, Solid state Devices, Power Systems and Power Electronics, Control Systems and Instrumentation. EE Department is executing research projects sponsored by external funding agencies.

VISION

The department is committed to engaging in high-quality research and pursuit of excellence in teaching. The faculty members of the department are actively involved in research and development in challenging areas of both theory and experiment. The labs established here have been well equipped with the latest equipment. The Department has online access to IEEE Explore digital library, IEL, Science Direct, Springer and other online journals. High-End Computational Servers and Software like MATLAB, GAMS, and CAD Tools are available with the Department in order to accelerate the research. Instructional laboratories for Basic Electronics, Analog Electronics and Digital Electronics are fully operational. Advanced laboratories like Communication, Digital Signal Processing, Embedded Systems, VLSI, Electrical Machines, Power Electronics and Power Systems are fully operational with advanced technologies, hardware equipment and software. Department has several ongoing/approved projects for a total of 55.0 Crore. The Department undertakes a continuous process of setting up experimental and computational facilities for taking up research & development and consultancy activities in various fields to produce state-of-the-art research output.

MESSAGE FROM THE HOD

PROF. PREETAM KUMAR
HEAD, DEPT. OF ELECTRICAL ENGINEERING

Email: ee_head@iitp.ac.in



The VLSI and Embedded Systems branch is one of the most sought-after master's studies nowadays. With the scope of the VLSI sector in mind, we launched this programme in 2017 with the goal of equipping students with the requisite skills in the various areas, combined with internships, projects, and certification programmes that contribute to the development of young engineers suited for industry, academia, and research. It is an interdisciplinary curriculum at IIT Patna, with students from various undergraduate backgrounds enrolled.

We have well-established VLSI labs, embedded systems labs, SoC labs, and PCB design and fabrication labs allowing students to connect their theoretical understanding with the practical elements, preparing them to address difficult real-world engineering challenges when they graduate.

Since its beginning, this programme has set excellent standards, and it is on track to do so for many years to come. This is obvious because students are completing internships at reputable firms such as Intel, STMicroelectronics, Thinci Semiconductors, and others and receiving several placement offers. Best wishes!

COURSE AND CURRICULUM

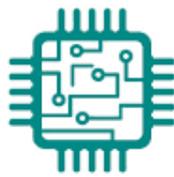
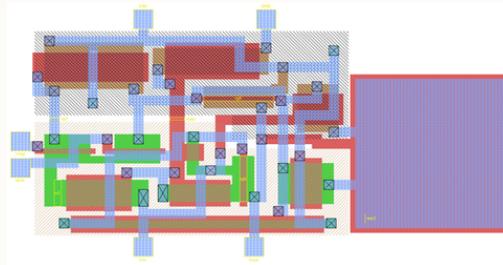
Core Courses

- DIGITAL VLSI SYSTEMS
- EMBEDDED SYSTEMS
- ANALOG & MIXED SIGNAL SYSTEMS
- HIGH PERFORMANCE COMPUTING SYSTEM

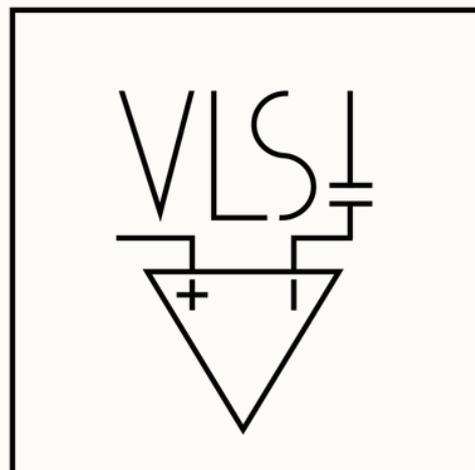
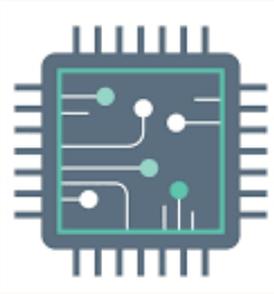
Labs



- VLSI LAB
 - TOOLS:
 - CADENCE, SYNOPSYS & MENTOR GRAPHICS
 - PCB DESIGN AND FABRICATION
 - FULL CUSTOM IC DESIGN
 - SEMI-CUSTOM ASIC DESIGN
- EMBEDDED SYSTEM LAB
 - SPARTAN-3E FPGA BOARD
 - PIC DEVELOPMENT BOARD
 - ARM CORTEX M3
 - ARDUINO UNO BOARD
 - RASPBERRY PI



VLSI Physical Design



Elective Courses

- MOS MODELLING AND SIMULATION
- RADIO FREQUENCY INTEGRATED CIRCUITS
- LOW POWER CIRCUITS AND SYSTEMS
- VLSI TECHNOLOGY
- SENSORS & ACTUATORS
- DIGITAL IMAGE PROCESSING
- ADVANCED BIO-MEDICAL SIGNAL PROCESSING
- DEEP LEARNING FOR VIDEO SURVEILLANCE SYSTEMS
- INTRODUCTION TO DEEP LEARNING
- FOUNDATIONS OF MACHINE LEARNING
- NANOSCALE DEVICES
- ADVANCED COURSE ON SEMICONDUCTOR DEVICES

FACULTY TALKS

Dr Jawar Singh (Professor, Electrical Engineering Department)

Our master's program on "VLSI and Embedded Systems" is one step towards producing excellent chip design talent, which is most demanding and expensive for starving silicon MNCs and startups.



Dr Pramod Kumar Tiwari (Associate Professor, Electrical Engineering Department)(Associate Dean, Student Affairs)

The course content of the M.Tech in VLSI & ES program is carefully prepared as per the need of the Semiconductor Industry. A perfect blend of theoretical and practical knowledge is imparted to make students a highly competent workforce.



Dr Saurabh Kumar Pandey (Associate Professor, Electrical Engineering Department)

In VLSI and embedded system programs, students are trained in several topics that cut across different domains, starting from physical devices to system development. Students get exposure to both theoretical and experimental aspects, including case studies that cover the fundamentals and engineering aspects of designing and developing Silicon Chip and IC based electronic/embedded systems.



Dr. Jimson Mathew (Professor, Department of Computer Science & Engineering)

IITP VLSI & ES program is jointly offered by the Department of Computer Science and Engineering and Electrical Engineering. It has a comprehensive coverage of theory and practical. Multiple elective courses teach commercially relevant technologies, and it is endorsed by several companies.



ALUMNI



Akash Vaibhav:
Tech. Leader
at STMicroelectronics



VED PRAKASH PANDEY
Verification Engineer
at NXP Semiconductors



Jagriti Jha:
Product Development Engineer at
Intel



Rishabh Srivastava:
Senior Engineer
at Qualcomm



Dishav Bohare:
Tech Lead at
STMicroelectronics



Gautam Kumar
IP Verification Engineer
at Intel



Neha Kashyap
Validation engineer at
NXP Semiconductors



ALUMNI



Ejaz Parvez:
Application engineer
at Synopsis



Keshav Kumar
Scientist 'SC' at
Indian Space Research Organisation



Manish Jaiswal:
Senior DFT Engineer
at Mediatek



Abhilash Srivastava:
SOC DFT Engineer
at Intel Corporation



Monika Singh:
SoC Design Engineer
at Intel



Rashmi Kumari
Silicon Design Engineer 2
at AMD



Aradhana Kumari:
Technical Leader
at STMicroelectronics



CURRENT BATCH



Nabarjun Saha
Project Title: a variable
length FFT processor
Intern: NXP Semiconductors

Pranav Mishra
SoC Verification Intern:
STMicroelectronics



Amit Singh Kushawaha
Project Title: designing current sense amplifier
Intern: STMicroelectronics

Pankaj Joshi
Intern in SPT(NVM) Team
at STMicroelectronics



Daanyal Mahmood
Project title: Analysis of various
Analog blocks required in NVM
Intern: STMicroelectronics

Jyotishmoy Biswas
Project Title: ESD Layout Designing
in Cadence Virtuoso
Intern in ESD (Electrostatic Discharge) Team
at STMicroelectronics. .



Yash Dwivedi
Intern: STMicroelectronics



PAST RECRUITERS



AHEAD OF WHAT'S POSSIBLE™



TPC OFFICIALS



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