Indian Institute of Technology Patna
भारतीय प्रौद्योगिकी संस्थान पटना

PLACEMENT BROCHURE
2021-22

for

VLSI & Embedded System

course

in

Electrical Engineering Department

About the Department

Overview-

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 System, 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 engage 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's like MATLAB, GAMS, 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 also fully operational with advanced technologies, hardware equipment and software. Department has a number of ongoing/approved projects of total amount 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 as also to produce state-of-the-art research output.
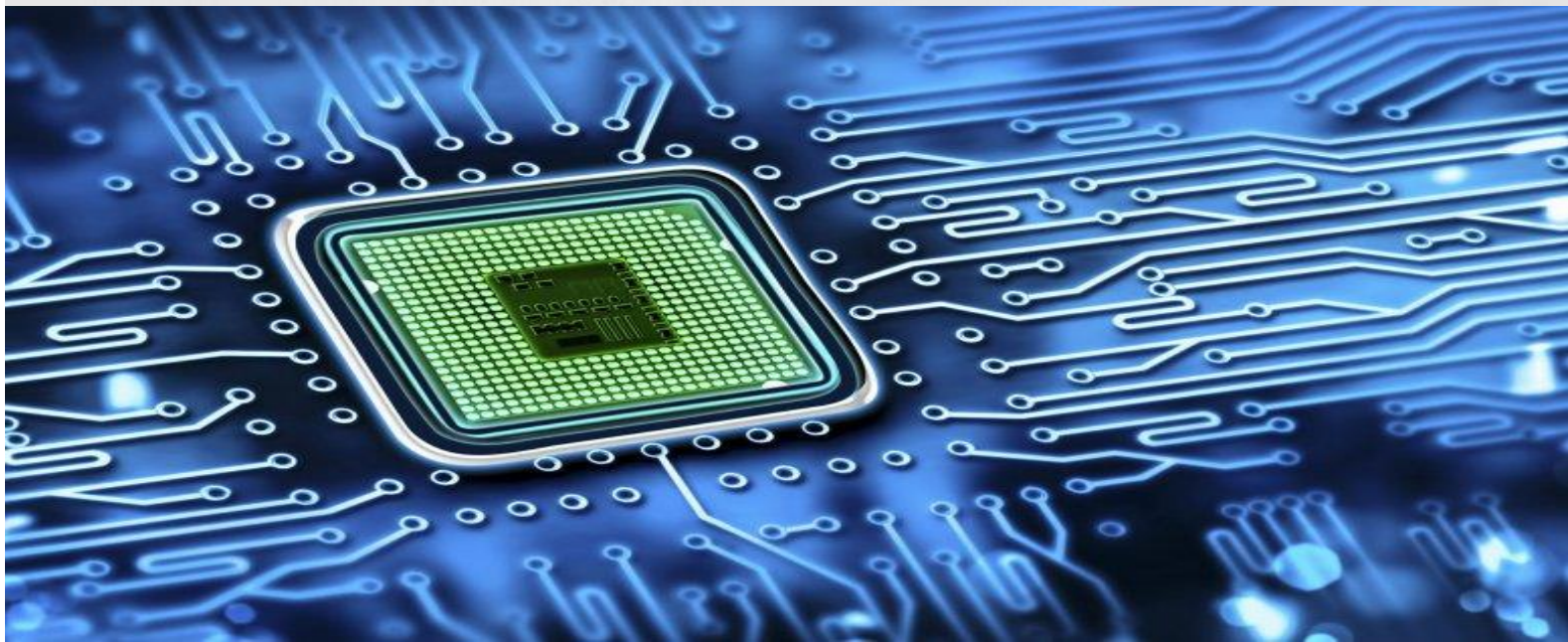
HoD's ADDRESS

Dr. Ahmad Ali, HOD

VLSI and Embedded Systems branch is one of the most sought after master's programmes in the present world. Keeping in mind the scope of VLSI industry, we started this program in 2017 which focuses on providing students the necessary skills in the respective areas blended with internships, projects and certification programs that aid to build young engineers suitable for industry, academics and research. At IIT Patna, It is an inter-disciplinary programme where students from various undergraduate backgrounds are enrolled.

We have well established VLSI labs, embedded systems labs, SoC labs and PCB design and fabrication labs for students to align their theoretical knowledge with the practical aspects and making them well prepared to solve the challenging real life engineering problems when they graduate out.

This programme has been setting exemplary standards since its inception and is well on course to continue the tradition for years to come. This is evident from the fact that the students are doing internship in reputed companies like Intel, STMicroelectronics, Thinci Semiconductors, etc. and getting multiple placements offers. With best wishes!

COURSES OFFERED

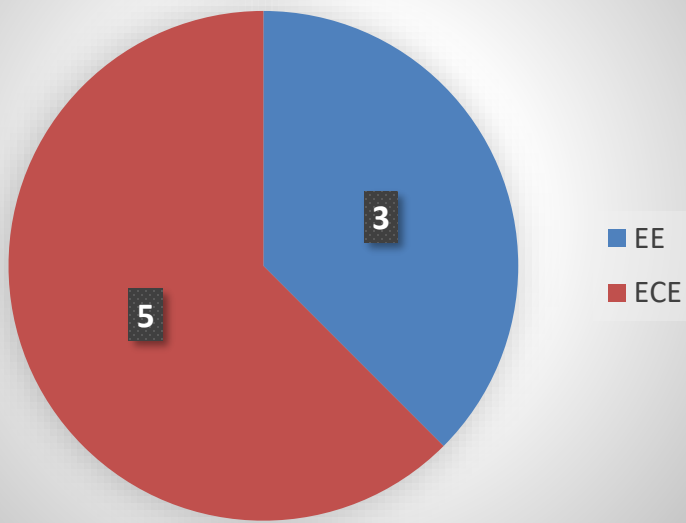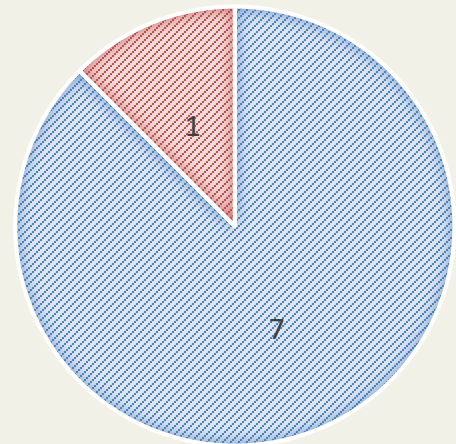|	
CORE	➢ Digital VLSI Systems ➢ Embedded Systems ➢ Analog & Mixed Signal Systems ➢ High Performance Computing System
Electives	➢ MOS Modelling and Simulation ➢ Radio Frequency Integrated Circuits ➢ Low Power Circuits and Systems ➢ VLSI Technology ➢ Sensors & Actuators ➢ Digital Image Processing ➢ Advanced Bio-Medical Signal Processing ➢ Deep Learning for Video Surveillance Systems ➢ Introduction to Deep Learning ➢ Foundations of Machine Learning
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

PROGRAMS AND DEMOGRAPHICS

B.tech Background

3 — EE
5 — ECE

GENDER

Male   Female

1

7

➢ Total number of Students – 8
*ECE - Electronics & Communication Engineering
*EE - Electrical Engineering

Faculty Speaks

Dr. Jawar Singh
(Associate Professor, Electrical Engineering Department)
➢ Our master program on "VLSI and Embedded System" is a 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)
➢ The course content of M.Tech in VLSI & ES program is carefully prepared as per the need of Semiconductor Industry. A perfect blend of theoretical and practical knowledge is imparted to turn the students into a highly competent work force.

Dr. Saurabh Kumar Pandey
(Asst. Professor, Electrical Engineering Department)
➢ In VLSI and embedded system program, students are trained in several topics that cut across different domain, starting from physical devices to the system development. Students get exposure in both theoretical and experimental aspects including case studies that cover the fundamentals and engineering aspect of designing and development of Silicon Chip and IC based electronic/embedded systems.

Dr. Jimson Mathew
(Head, Department of Computer Science & Engineering)
➢ IITP VLSI & ES program is jointly offered by 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.

OTHER PROGRAMS

Global Initiative for Academic Networks (**GIAN**), a program approved by the MHRD, Government of India, is aimed at tapping the talent pool of scientists and entrepreneurs, encourages their engagement with the institutes of Higher Education of India. Time to time GIAN courses and workshops are conducted with a great involvement of students.

Institute of Electrical and Electronics Engineers (**IEEE**), Student's Branch, of IIT Patna opened with a group of students enrolled in various M.Tech and PhD courses with a view to promote technical activities in the campus, city and the state of Bihar. Now with the involvement of B.Tech students too, the branch organizes yearly lectures, IEEE programs and conferences.

The Continuing Education Programme (**CEP**) activity has been set up to meet the manpower training and knowledge upgradation needs of the industry, academia, and research organizations. The main aim of CEP of Indian Institute of Technology Patna is to impart knowledge related to the frontiers in science, technology, and management to the people, who want to upgrade their knowledge relevant to their field of interest.

OUR ESTEEMED ALUMNI

2017-19 Batch:

➤ **_Akash Vaibhav_** : Sr. Design Engineer at STMicroelectronics

➤ **Rishabh Srivastava** : IP Logic Design Engineer at Intel

➤ **Dishav Bohare** : Senior Design Engineer at STMicroelectronics

➤ **Abhilash Srivastava** : Senior Design Engineer at STMicroelectronics

2018-20 Batch:

➤ **_Aradhana Pandey_** : Sr. Design Engineer at STMicroelectronics

➤ **Jagriti Jha** : Product Development Engineer at Intel

➤ **Monika Singh**: SoC Design Engineer at Intel
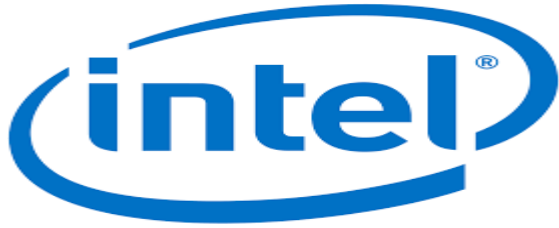
➤ **UDAY MAURYA**: PhD Research Scholar at IIT, Guwahati

RESEARCH PROJECTS

- ✓ Design and FPGA prototyping of multicarrier multiple access schemes for variable rate multimedia satellite communication.
- ✓ Design and implementation of novel VLSI architecture of PRNG for cryptography applications.
- ✓ SMDP-C2SD
- ✓ Modeling simulation and performance optimization of Re-S/D SOIMOSFET.
- ✓ Analytical investigation of sub-threshold behaviour of SiNT FETs.
- ✓ Exploration of 8/9 nano meter process variation immune doping and junction free devices and their circuits
- ✓ Design and development of RF energy harvesting circuits for low power electronics devices.
- ✓ Design and analysis of high performance RF MEMS-based electronically reconfigurable filters for wireless communication application.

PAST RECRUITERS & INDUSTRY INTERNSHIPS
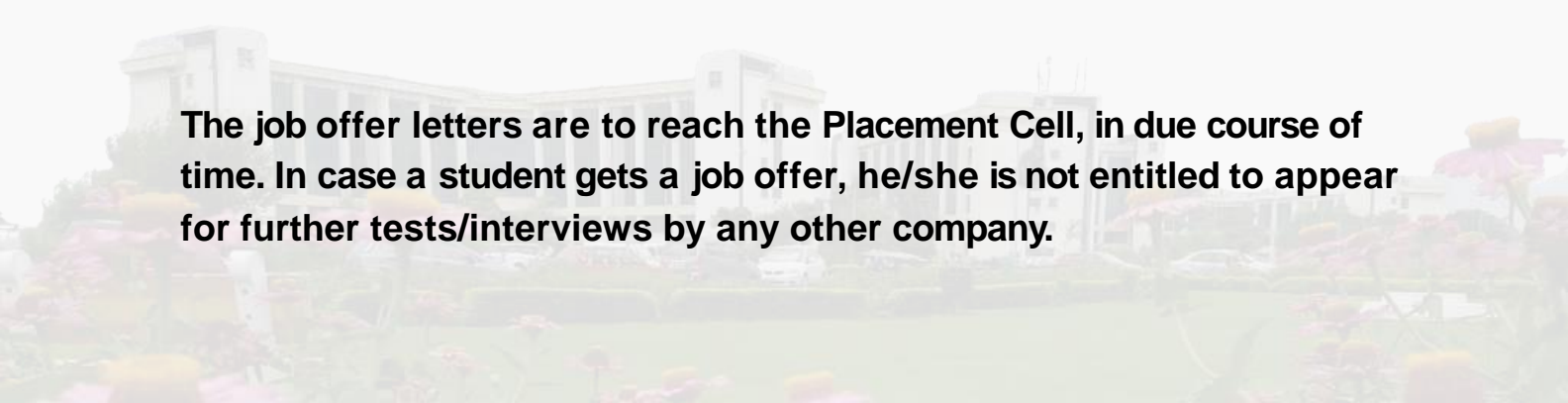
PLACEMENT PROCEDURE

1 Companies are contacted by the Placement office or Placement cell (authorized student representatives) and invitations are extended, providing relevant information.

2 Companies are given an exclusive login id in the website after they submit the filled-in **Job Announcement Forms (JAF)** via email or fax. The JAFs are made available online, which helps the willing students to register for the company.

3 The Placement Cell and the Company confer and finalize the date for **pre-placement talks** if necessary.

4 Each student who has registered for a particular company submits **resume** so that the company can shortlist the students accordingly.

5 A detailed schedule is prepared by the Placement Cell evaluating the job offer, prospects, student intake and the like. The schedule is confirmed with all the companies.

6 The companies/organizations visit the campus, meet the registered (or shortlisted) students, and conduct the **interviews**, tests or group discussion sessions in accordance with their respective recruitment process. The date of the interview and other sessions should be in compliance with the mutually confirmed schedule discussed earlier.

7 The companies are required to prepare and submit, with a **written confirmation letter** the list of students who are selected after the interview process, on the day of the interview itself.

The job offer letters are to reach the Placement Cell, in due course of time. In case a student gets a job offer, he/she is not entitled to appear for further tests/interviews by any other company.

Contact Us

Training and Placement Cell

Website: www.iitp.ac.in/placement/

Address: Training and Placement Cell, IIT Patna, Bihta, Bihar, Pin - 801106 India

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Professor In-charge

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Training and placement Officer (TPO)

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Asst. Head Coordinator

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