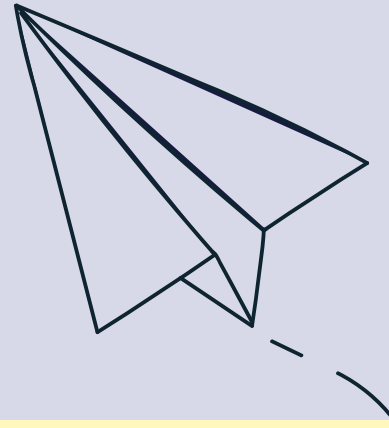


WIRED IN



AN INTRO TO THE EE DEPT

History and Evolution

The Department of Electrical Engineering (EE) has been one of its major departments since the inception of IIT Bombay in 1957. The department started off with fifty undergraduate and forty postgraduate students, with C. Balakrishnan as the first head of department (HoD). Starting off, the department offered three specializations, namely Electronics, Electro-Vacuum Technology, and Machines. Cut to the present day, there are 1500+ UGs and PGs in the department, with Professor Kishore Chatterjee serving as the current HoD. With changing times, the number of specializations has increased to six, including Communication and Signal Processing, Control and Computing, Power Electronics and Power Systems, Electronic Systems, Integrated Circuits and Systems, and Solid-State Devices.

The Infrastructure of the Department

There is one area, among many others, where the electrical engineering department surpasses all – the number of buildings that house our department. These total four in number, and include:

1. EE Building (Electrical Main Building)

This is the building located right in front of Café 92, and it houses a number of labs and offices of professors, including that of our current HoD. It houses a number of labs, from the power labs on the ground floor to the Wadhvani Electronics Lab (WEL) on the third floor.



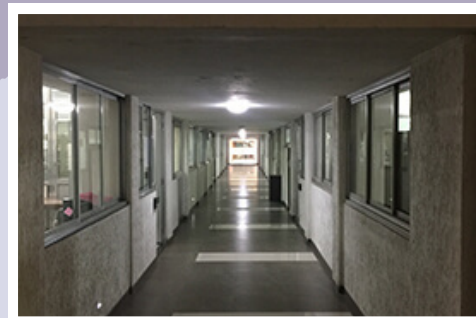
2. Girish Gaitonde Building (GG Building)

Located right beside the elec building, and connected to it physically via a second-floor walkway, this building is notable for housing the department's very own set of classrooms. The EE office is also located within the GG building. It is also a popular haunt for budget-friendly meals at the elec canteen it possesses, located, once again, on the second floor (makes one wonder if the only reason that the walkway exists is for quicker access to the canteen :))



3. Electrical Engineering Annex (Elec Annex Building)

Located across the infinity corridor, this building houses some of the more advanced labs of the department and also houses a number of professors' offices. Designed partly to be a fun, real-life maze, this is a building you wouldn't want to get lost in.



4. Nanoelectronics Building

One of the newer additions to the infrastructure of IITB, this seven-story complex houses some of the most cutting-edge research labs of the institute. Connected to the electrical annex building via a circuitous indoor route full of restricted-access areas, this building also houses the offices of some of the professors of our department.



Specialisations: The Intricacies of EE

Electrical Engineering is a very vast field, covering a lot of research areas and a multitude of domains. To focus the research and academic activities of the department, it has been broadly divided into six major specialisations (or groups). Note that despite this division a lot of activities are multi-specialty in nature, and in such cases, these groups come together for a common goal. A basic overview of the specialisations is as follows:

1. POWER ELECTRONICS AND POWER SYSTEMS

A major focus of this group is the integration of power electronics with the study of power systems. The group is actively providing research and development support for the national electric power infrastructure. The major research labs are the Field Computation Lab, the Electrical Machines Lab, the Power Electronics Lab, and the PowerAnser Lab.

2. ELECTRONIC SYSTEMS

The research areas being pursued by this group are embedded system design, signal processing, electronic instrumentation, and audio and speech processing. Major labs where research is conducted include the Wadhvani Electronics Lab, the Texas Instruments Digital Signal Processing Lab, the Printed Circuit Board Lab, and the Signal Processing and Instrumentation Lab.

3. SOLID-STATE DEVICES

This is the largest devices group in the country and the top performer in driving India's rise in nanoelectronics research to a position of global leadership. The group runs the IIT Bombay Nanofab Facility (IITBNF) and the National Center for Photovoltaics and Renewable Energy (NCPRE) – which are national centers for creating nanoscale technologies and devices in cleanrooms and design labs.

4. CONTROL AND COMPUTING

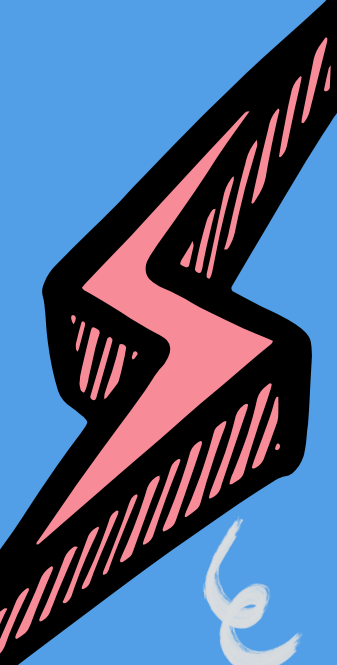
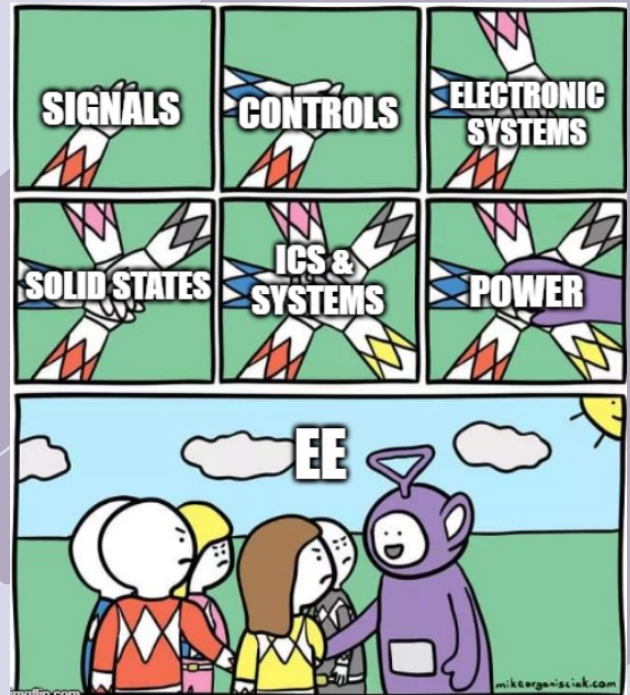
The activities of this group include automatic control, computational methods for systems theory, graph and matroid decompositions, cryptography and coding theory, dynamical systems, and Grobner basis methods. The majority of research is conducted in the Control and Computation Laboratory.

5. COMMUNICATION AND SIGNAL PROCESSING

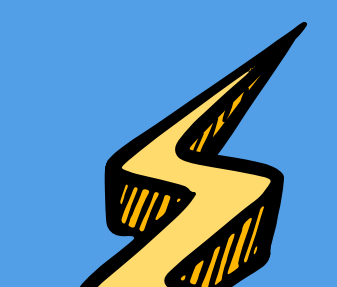
This group actively pursues various research areas including wireless communication, microwave RF, antenna, signal processing, fiber optics and photonics, communication networks, computer vision, media processing, and image processing. The major research labs are the Antennas and Microwave Lab, the Bharti Centre for Communication, the Communications Lab, the Digital Audio Processing Lab, the Information Networks Lab, and the Tata Teleservices – IIT Bombay (TTSL-IITB) Center for Excellence in Telecommunication.

6. INTEGRATED CIRCUIT AND SYSTEMS

The research, teaching, and learning activities in this specialization are focused on techniques for the design and development of integrated circuits for various applications. The major labs include the VLSI design lab, the Computer Architecture and Dependable System Lab (CADSL), and the advanced integrated Circuits And Systems lab (aiCAS lab).



ELECTRO
Cute!!



"THERE'S NO
SCOPE IN ELEC"



'Cause we are

OHM-NIPOTENT!

Flying Sparks and Wannabe Starks

Is taking electrical engineering at IIT Bombay the right option for me? Why not another branch or another IIT? I have heard from people that EE is too heavy. Will I be able to cope with the load? What about the Mumbai rains? Questions like these had racked all of our minds while filling those heart-wrenching but life-deciding preferences in the apparently designed-to-be-stress-inducing JoSAA website.

We all had different and similar reasons to choose EE here; what we had gathered from seniors, the Internet, and our all-knowing and overly inquisitive relatives- terms like 'packages,' 'internships,' 'flexibility,' and 'research' were all thrown at us. But all of this was patently overwhelming. None of us seemed to really have a coherent idea of what to expect, and before long, we were actually facing the commencement of classes.

"Welcome to the best department!" These words uttered by Prof BG Fernandes on the first day of class are pretty much the only things we remember from our DIC course, other than the realization from the various modules of how diverse the branch actually is. Starting from the JEE memories-inducing Analog Circuits, which we see all around us in every run-of-the-mill device, to digital and control systems that form the backbone of the Internet Age and the ongoing AI revolution. Not to forget Power electronics, without which the current EV surge wouldn't be a thing. EE103 doesn't really teach you much about how to be an electrical engineer, but it does show you how cool being an electrical engineer is.



Another course that we had in our first semester was MS101. We clearly remember the first lab we had, which, incidentally, was also our very first class in insti. A not-so-hard-but-definitely-stressful assignment in the very first lab welcomed us into our freshie year. But what most of us realized after a few labs is that it was going to be a pretty stimulating, if not heavy, course (of course, few of my friends wouldn't agree, because of the fact that we were literally guinea pigs here, with the course being conducted for the first time and systems were falling into place as the course progressed). We rapidly transitioned from drawing to CADing to circuiting to making our own bot!



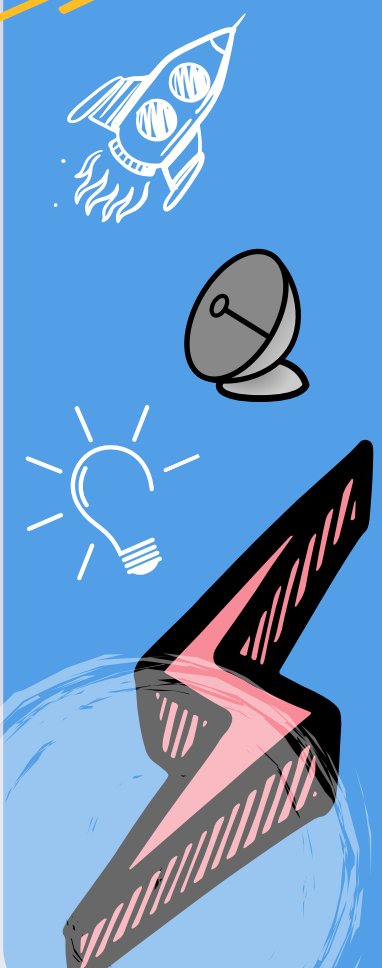
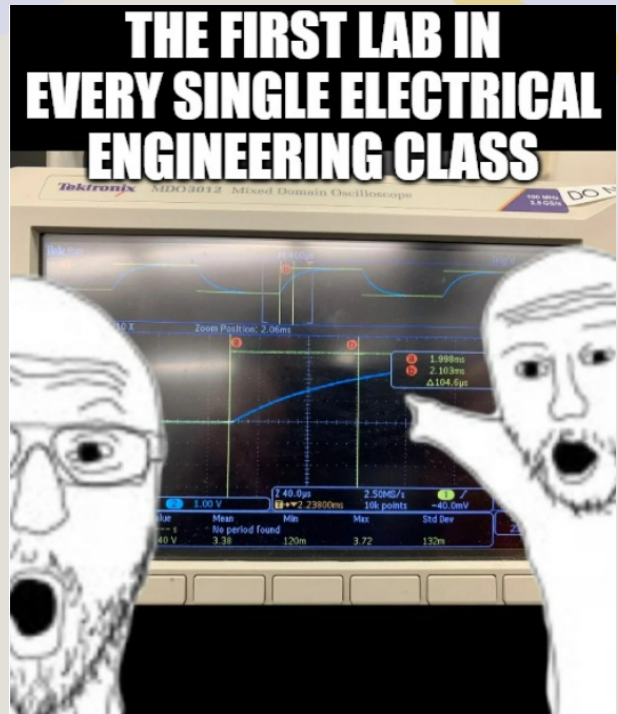
None of us can ever forget the sleepless nights spent working relentlessly on our bots, trying to make it to follow a simple black line. But the most satisfying part was when we demonstrated our project, and most of them seemed to magically work! The course taught us what being an engineer felt like, what it meant to see something you have spent a meticulous amount of hours brainstorming, designing, and working on finally coming together, and coming together well!

The second semester seemed to be coming to a pretty peaceful close until Vaibhav was murdered using the poison of the belladonna plant, or so went the backstory of the Dept. Scavenger Hunt 2.0. It was a tiring but thoroughly enjoyable night with us running from one part of Insti to another, finding clues, and trying to piece up the story and find the murderer. It followed the shenanigans of Scavenger Hunt 1.0, which was held after a pretty eventful, to say the least, Freshie's Night. The Department Cultural Night followed soon after, which showcased the mighty good musical and cultural talent in the department, besides, of course, some intentionally and hilariously badly choreographed performances (Ask your seniors about those ;)).



These were not the only or the biggest cultural events of the year, though, with the Department Fest, Impulse taking the top spot. Two days of quizzes, competitions, interviews, and talks highlighted the event, including a chat with the cast of the stellar award-winning web series - Rocket Boys. It ended with the Department Formal's Night, I must say it was quite weird seeing forever sleep-deprived, shorts-and-tees people, in coats and dresses, all dolled up.

All in all, our first year at IIT Bombay's Electrical Engineering Department was a roller-coaster of stress and fun, like juggling circuits while trying not to trip on our own feet. No matter how ironic this may sound, 'stressful' and 'fun' are probably the two words that best describe our first year here. But we wouldn't trade it for anything! Here's to surviving high-voltage assignments and dancing our way through cultural events, all while becoming future electrical wizards. Cheers to more shocking adventures ahead!





EVENT TIMELINE



TRADITIONAL DAY

We all come from different places and probably have had a lot of different teachers in our life. But if your journey was anything like a regular JEE aspirant, then chances are that HC Verma was a big part of it. Honoring the master teacher in true electrical fashion, our department hosted Prof. HC Verma on the joint Teachers' Day and Traditional Day celebration.



AUG

SEPT

INTRA DEPARTMENTAL SPORTS TOURNAMENT

Sports is one of those events where friendship and rivalry blend together in the most harmonious fashion. In this spirit, EESA conducted the Intra Department sports event, which included a multitude of disciplines, from Pool to Basketball, from Chess to Volleyball. A fun fiesta that is sure to become bigger and better with each year, this is one event that is not to be missed.

**STAY
TUNED
FOR LAB
TOURS!!!**

FRESHIE INTRO VIDEO

Picture yourself mingling with fellow freshies, laughing, sharing stories, and creating unforgettable memories. EESA's freshie intro video aims to showcase the vibrant spirit and enthusiasm that each one of you brings to insti. From answering questions like "Dassi ya bandi/banda?" to describing your weirdest nights in insti, get ready to leave your mark on EESA's youtube page!



CULTURAL NIGHT

Do you have a special talent that you wanna show your EE peers? Are you the type of person who has a fan base for dancing at parties or singing in the bathroom? The EE Cultural Night provides the arena to unleash your inner beast. From comedy, music, and dance to poetry, drama, and even magic, the night is one of the most memorable ones in the year. Don't miss the chance to dress up and take some stunning photos with your branch mates!



JAN



INDUSTRIAL VISITS IN JAN!!

MARCH

OCT



DEPARTMENT TRIP

What could be better than breathing-in the luscious surroundings of nature in a retreat away from the hustle of hectic college life? The same adventure with all your friends, of course. Last year witnessed an amazing fun fiesta in the EE Department trek, which took us right into the lap of nature, amidst the beauty of the Harishchandragadh Sanctuary.



IMPULSE, THE DEPARTMENT FEST

Have you dreamed of meeting the top Managers of companies like Jio, Samsung, and Mercedes Benz? Have you always wanted to flex your Quizzing skills? With the exciting launch of our own Department Fest, Impulse, last year, EESA did it all; Alumni mentoring sessions, art and research exhibitions, and to top it all, a grand finale with the Team of Rocket Boys and the one and only Jim Sarbh!



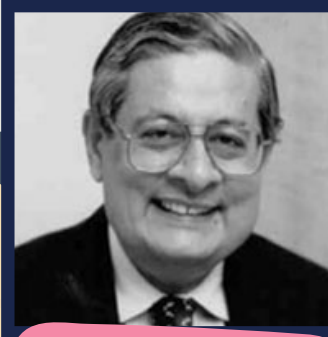
Degrees Of Success

Look no further, here are some of our alumni to flex and look up to for inspiration, for they have left no stone unturned in their professional journey after IITB!



Nandan Nilekani

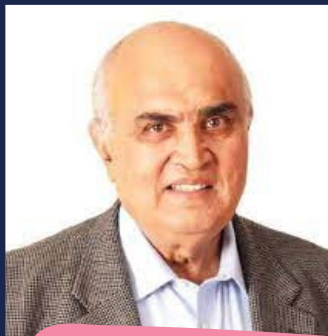
Heard of him already? No wonder! Nandan Nilekani has made headlines in recent weeks through his generous donation of INR 400 Cr to IITB. But here are some lesser-known facts about him: The Co-Founder and Chairman of Infosys Limited was the Founding Chairman of the UIDAI (think Aadhar) in the rank of a cabinet minister from 2009-2014. Mr Nilekani also runs EkStep Foundation, a not-for-profit effort to create a learner-centric, technology-based platform to improve basic literacy and numeracy for millions of children. He was appointed co-chair of the G20 Task Force on Digital Public Infrastructure. The IITB Main Building is now known as the "Nandan Nilekani Main Building" in his honour.



Victor Menezes

Been to VMCC for countless orientations? Victor Menezes, after whom the building is named, is a 1970 alumnus of our very own department, post which he studied at the MIT Sloan School of Management. Retiring as a Senior Vice Chairman of Citigroup after a 32-year global career, he served previously as Chairman and CEO of Citibank. He was head of Citi's Emerging Markets business, responsible for its corporate and consumer businesses and global product responsibility for e-Business and Global Securities Services. Mr. Menezes is a board member of the MIT Corporation, Catholic Charities, and Eisenhower Fellowships, and he serves on the Advisory Boards of IIT Bombay and INSEAD.

An interesting YouTube video titled "Indians from 1965 talk about the Future" contains a clip of Mr Menezes and many other insti alums from their IITB days talking about their dreams and aspirations. Go watch!



Kanwal Singh Rekhi

An EE alum made the CSE building possible! What is popularly known as the KReSiT building is named after Kanwal Rekhi, the first Indo-American Founder & CEO to take a venture-backed company public on the NASDAQ. He built TiE into the largest global network of Indian entrepreneurs and co-founded Inventus, a leading early-stage venture franchise. Mr Rekhi advanced through the engineering ranks in a number of technology companies and then co-founded Excelan in Silicon Valley to commercialise ethernet and TCP/IP – standards which became the basis of the Internet (You will learn about them if you take up advanced communication courses in the department). He is also active on LinkedIn and posts blogs regularly at kanwalrekhi.com, so if the world of VC and startups excites you, make sure you follow him!

Narendra Krishna Karmarkar is an Indian mathematician known for developing Karmarkar's algorithm. This algorithm is a method for solving linear programming problems and has significantly impacted optimisation techniques. He is listed as an ISI highly cited researcher, highlighting the importance and influence of his work in mathematics. He invented one of the first provably polynomial time algorithms for linear programming, generally called an interior point method. The algorithm is a cornerstone in the field of linear programming. He published his famous result in 1984 while working for Bell Laboratories in New Jersey.



Narendra Karmarkar



Vipul Goyal

Be it edge-cutting tech or performing arts, our EE alums have it all covered! Vipul Goyal, a 2008 IITB EE graduate, is counted among India's top comedy performers and plays the main protagonist in the web series *Humorously Yours*. The TVF-produced show depicts a semi-autobiographical account of his life interspersed with standup clips. Vipul is the only Indian comedian with a dedicated show, with hundreds of millions of views on his online videos across various platforms. It revolves around his struggles of becoming a comedian. He is often called the Indian Jerry Seinfeld as he does some observational comedy.





The Campus Chameleons

In the heart of the most challenging department in our institute, senior electrical engineering students are proving their mettle. Amidst the rigors of academics, sports, cultural activities, and tech teams, they showcase remarkable resilience and prowess. This article unveils their unique journey, offering insights into their exceptional ability to conquer it all.

(as if there was enough time for elec)



Annie D'souza is a fourth-year electrical engineering student. In her first year, she became a part of the NCC and despite it being an online semester, they tried to materialize the experience. Camaraderie and shared experiences were cultivated through weekly sessions and cultural and sports competitions. She describes it as a "good mix of everything" and decided to stand with the NCC family as the media secretary.

As the media secretary, she was involved in conducting weekly theory and fitness hours for the juniors, handling the socials, covering important events, and the annual NCC camp hosted by the institute.

Discovering her latent athletic abilities at the NCC, she attended practices and made it to the inter-iit team. The practices were rigorous and tiring and often went all day long, near the tournament. Annie revealed that she had always felt good after a practice session. It was a refreshing break after a long day at the lecture hall.

She was also an active part of the dance community, attending and even conducting their jamming sessions. And this time around, She's decided to give inter-iit dance a go. She tells us that she had to make many tough choices to accommodate all her pursuits. Giving up Avhaan for dance, and inter-iit dance to try out athletics. Making these tough choices is necessary for efficient learning, she says.



Harsh Aggarwal, currently a third-year student in the EE department, was with the AUV in his first and second years. He joined with the initial hopes of being productive with his time and soon developed a collective identity there. He says that most of his time was spent in debugging, and through the cycles of frustration, random inspiration, and validation, he gained a lot of valuable insights and felt the warmth of working as a team.

In parallel, Harsh found solace at the literati club and progressed from a regular there to a convener in his second year. Quizzing was something he loved doing and being an avid reader, he fit right in at Literati. Weekly events were a major task, right from conceiving the idea to bringing it to life from scratch. The atmosphere of the club and the company of his peers always got him back up on weary days with all the acads and AUV.

Also being a coordinator for MoodIndigo 2022, he has some valuable insights on the topic. He thinks of it as a unique experience, with twenty-year-old somethings with limited experience working together to make something much bigger than themselves happen. Working as a media and publicity coordie and eventually, a CG, he had to talk to people from all over, bring in collabs and advertise. He says the whole experience made him more confident as a whole and intimidating negotiations with people of experience and fame became commonplace.



Kaustubh Chourasia, is a fourth-year Electrical Engineering student. Kaustabh's tech journey began in his first year when he hopped on board the AUV tech team. He was looking for some early tech exposure and felt that a tech team would be the optimal choice.

The initial two years are quite hectic, with people working from 10 PM, all the way to 1:30 AM. This might even extend to 3 AM and even all-nighters in a few cases. He gained a lot of experience there, working with some cool tech and polishing his leadership and management skills. He describes the environment to be laid-back and the interactions were often informal and refers to them as 'family'.

He feels honored to have been able to represent not just the institute, but the country at an international competition in the USA.

He is also a regular at the football field. Starting off with an online NSO in his first year, he hit the gymkhana as soon as he returned. Meeting new people on the field was always a fun experience for him. Despite, his weary time commitments with AUV, he attended the inter-iit pre-camp, with an intense 4-hour workout regime.

When asked if he'd ever felt burnt out, "Anything that you enjoy doing would never burn you out." was his reply.



Meet **Ashwajit Singh**. He started debating in his freshie year and went on to become a convener there. He wanted to explore reasonably well, before settling for something. And that's how he got into debating. Despite limited initial experience, he felt connected to the debate society. It wasn't the sport he was in it for, it was the people.

For him, debating was mainly sparring and tournaments when he wanted to. The nature of parliamentary debate inevitably changes the worldview, making one more analytical and contemplative.

He says that it wasn't the nature of work, but the people that made him stay on as a convener there. The hierarchy is pretty loose and the atmosphere, is casual. Conveners are to make freshmen invest in debating, organise sessions and spars and handle the logistics of tournaments, also having to stay closely connected with the freshers and being as approachable as possible.

Having played a lot of Tennis before, Ashwajit continued the practice by hitting the courts almost every day. He says that he enjoys the time in court, getting along well with his peers and also gets some intense physical activity out of these sessions.

As someone with a stellar academic record, Ashwajit finds studying in a group with like-minded people sharing his interest in the coursework really helpful in enriching the experience.

PEOPLE HANDLING ELEC

PEOPLE HANDLING ELEC + TECH TEAMS

PEOPLE HANDLING ELEC + TECH TEAMS + SPORTS

PEOPLE HANDLING ELEC + TECH TEAMS + SPORTS + PORS



The People Who
Make It Happen -

MEET THE COUNCIL

Head of The Department



**Prof.
Kishore Chatterjee**

Faculty Advisors



Prof. A.M.Kulkarni



Prof. M.B.Patil



Prof. V.M.Gadre

B.Tech.



**Prof. Sharayu
Moharir**



**Prof. Debanjan
Bhowmik**



**Prof. Narendra
Shiradkar**

DD

Dept. General Secretary

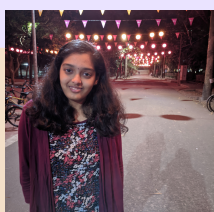


Harshvardhan

EESA

EE Students' Association

The Electrical Engineering Student Association is here to represent you all amazing peeps in the EE department. They organize dope stuff like treks, sport events, cultural, orientations and what not. You name it and they do it. Their mission? It's to create an unforgettable experience for all you guys.



Preethi Malyala

EESA GSec



Nimay Shah

J.Sec



**Saarthak
Laturiya**

J.Sec



**Saatwik
Patnaik**

Sports Sec



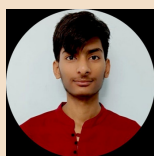
Amol Pagare

Media Sec



**Pravesh
Khaparde**

Media Sec



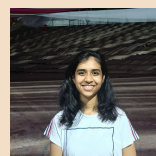
Dishant Yadav

Web Sec



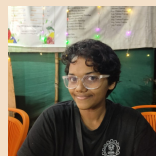
Anisha Saini

Design Sec



**Garima
Gopalani**

Design Sec



**Saima
Patharwat**

Design Sec

DEB

Department Editorial Board

The official student Editorial board of the electrical engineering department. Get ready to dive into our awesome articles, interviews, reviews and other amazing stuff! And guess what? We have our department's very own newsletter, BackgroundHum! So Sit back, relax and let DEB escort you into this wild ride of our electrifying world.



Sanjhi Priya

Chief Editor



**Priyanshi
Gupta**

Chief Editor

Editors:



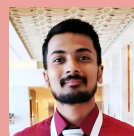
**Maalavika
Chitoor**



**Aryan
Bhaskar**



**Sreekar
Reddy**



P Arvind



**Abhineet
Agarwal**



**Sathvik
Reddy**



**Indrayani
Tayde**

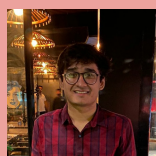
Our Coordinators

There will be often times when something is troubling you, and you need to reach out to somebody and facads might not seem the cleverest idea and you wanted someone to talk more personally. The Damp team has got you covered. You can talk to them about anything, from courses to internships to random insti stuff. Shortly put, ANYTHING!

DAMP Coordinators



**Keshav
Singhal**



Mohit Kedia



Vaibhav Garg



**Shiv
Bharuka**

Internship Coordinators



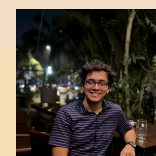
Arya Vishe

Sen.
Coordinator



**Siddharth
Solanki**

Sen.
Coordinator



**Shlesh
Gholap**

Sen.
Coordinator



**Harshil
Singla**

Jr.
Coordinator



Sthiti Padhi

Jr.
Co-ordinator



**Aditiya
Singh**

SARC rep

ACE

Alumni & Corporate Engagement

The ACE aims to set up a hierarchical communication system among the institute offices and inter-departmental cell to connect the alumni with the department. Its aim is to showcase the latest research and invite industrial collaborative opportunities.



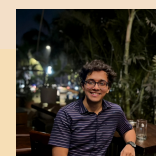
Arya Vishe

Sen.
Coordinator



**Siddharth
Solanki**

Sen.
Coordinator



**Shlesh
Gholap**

Sen.
Coordinator



**Harshil
Singla**

Jr.
Coordinator



Sthiti Padhi

Jr.
Co-ordinator



**Aditiya
Singh**

SARC rep



Worried about which website
to go to for resources?
We got you covered.

Scan to discover all the
important ee resources!

