

# CHRONICLE

## 11<sup>th</sup> ALL-INDIA ENGINEERING COLLEGES SURVEY 2023



- Best in Placements
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**Prof. Abhay Karandikar**  
Director, IIT Kanpur, Speaks Out on  
Building Brilliant Minds at IIT Kanpur



**Dr. H. S. Pali**  
National Institute of Technology Srinagar  
on Importance of Equipping Students  
with Advanced Skills



**Prof. (Dr.) Deepti Mehrotra**  
Talks about a Career in Integrated  
Circuit Design



**K. Umamaheshwar Rao**  
Director, NIT Rourkela, Revamping Education  
to Align it with the Needs of the Industry





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2023  
 Engg: 101-150  
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 Univ: 151-200



SDG 4: 3  
 SDG 6: 3  
 SDG 7: 6  
 SDG 17: 5  
 Overall: 10



E-LEAD



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 Ranking 2023: 651-700



Diamond



Innovation: 11-50



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# Transforming Engineering Education: Nurturing Innovators and Industry-Ready Professionals

**K. Umamaheshwar Rao**

Director  
National Institute of Technology Rourkela

**E**ngineering offers comparatively more career opportunities and financial potential, and so it is still the most popular major in India today. Others believe it offers a stimulating and challenging career.

## The Evolution of Jobs and Skills

India became one of the world's ITeS powerhouses as a result of the Year 2000 crisis, which resulted in millions of job openings in the business process outsourcing (BPO) sector both domestically and abroad. At the same time, India has made great progress in building a sizable network of engineering institutes, both public and private, all over the nation, graduating hundreds of students every year. Additionally, it is thought to be a contributing factor in India's ITeS industry's growth.

The computer industry has experienced tremendous growth in recent years, and the coming ten years may see even greater advancements. Automation in the sense of AI/ML, big data analytics, and data security are actually moving into manufacturing to produce goods of higher quality more quickly.

Next-generation robots are also being created that are more compact and adaptable so that they can collaborate with people in difficult manufacturing processes. Jobs are shifting to new roles that require new skills in this fast-paced, increasingly complex, and connected world, so today's workforce is unlikely to benefit from yesterday's skills.

## Transforming Engineering Education for Industry Readiness

Several studies of graduate outcomes across the country suggest that new graduates are not yet "industry ready." On the other hand, they need extensive training once hired. But companies are unwilling to spend time for on-



the-job training. For Indian engineers to be industry-ready, we need to transform the existing education system to teach and develop skills relevant to existing and future roles.

NEP-2020 is an attempt to address most of these challenges. It emphasizes flexible, multidisciplinary, and holistic education from the very beginning of learning. The goal of a multidisciplinary curriculum is to encourage students to design a program that best fits a specific career path.

Engineers of the twenty-first century will be expected to participate in multidisciplinary teams and they must exhibit effective management, communication, and attitude. The divisions between disciplines that have been established within engineering will lose relevance as the systems approach is emphasized more in engineering. Finding solutions to complex problems that have never been encountered before requires the use of critical thinking skills, which are becoming increasingly crucial.

In addition, the need for engineering education to become more globally relevant is critical in the context of globalization. As a result, the first step in achieving the larger objectives of Make in India is a paradigm shift from the traditional to the progressive program.



## A Transformative Curriculum and Supportive Measures

Our current roadblock is the inability of our engineering graduates to find work. To deal with this problem, NIT Rourkela has created a progressive curriculum using a multi-, inter-, and transdisciplinary approach.

It gives students complete freedom to decide what they want to learn, how they want to learn, and where they want to learn as long as they stay within the curriculum policy framework established by the institution.

The institution has also incorporated National Credit Framework (NCrF) options into the curriculum. In fact, it gives students more chances to combine their professional development and the main engineering disciplines they are studying at the institution.

Academic Bank of Credit (ABC) and the multiple entry/exit option in NEP-2020 give students more chances to accrue credits from various learning pathways in their pursuit of education and lifelong learning.

Additionally, a student may discontinue their studies at any time for personal or medical reasons and resume them at a later date in accordance with the academic standards of the institution.

In 2023 approximately 11.50 lakh students took the joint entrance exam, and the final success rate is just 20% or even lower. The travesty is that once admitted, some students steadily go downhill.

“*The days of traditional curriculum coverage are slowly fading away. It will be a transformative shift from content-based education to creative and skill-based learning to put the student at the heart of the problem to provide multiple solutions to fulfil the dreams of 'atma nirbhar bharat'.*”

Getting a firm grip on their newfound freedom in hostel life is one of the biggest difficulties that students typically encounter.

Some students struggle with internal conflict because engineering is not their career of choice, while others struggle with low self-esteem, cultural differences, poor communication skills, etc. which ultimately results in academic pressure.

In light of this, the institution is trying to implement numerous corrective measures. Multiple entry and exit option by itself a stress reliever for students. In this way, a student can arrange their studies to finish their 160-credits at their own pace. A five-year dual degree can be finished in ten years, and a four-year undergraduate program in eight years.

A four-year B-Tech bachelor's program is planned for 160 to 170 credits, according to the specifics of the new curriculum at NIT Rourkela. A certificate from the program is awarded to a freshman who has earned 40 credits and an exit at 2nd year after achieving 80 credits, he/she is entitled for a Diploma in Engineering Sciences from within the Department where he/she is enrolled.

A student to become eligible to take a UG degree at the fourth-year level is expected to have completed 160-170 credits.

NIT Rourkela offers students who are interested to pursue a double degree in transdisciplinary programs, e.g., B-Tech.+ MBA, can continue their career until 5th year. In doing so, we aim to empower a generation of skilled and adaptable learners, prepared for the challenges of a rapidly changing global economy.

These changes proposed in the curriculum of our institute require full ownership and the necessary initiatives on the part of teachers, and the success depends on how teachers approach the years to come. Teachers must be prepared to meet the next generation of students who arrive in a classroom with different abilities and levels of knowledge.

Teachers are expected to act as facilitators and create an environment conducive to learning. The days of traditional curriculum coverage are slowly fading away.

It will be a transformative shift from content-based education to creative and skill-based learning to put the student at the heart of the problem to provide multiple solutions to fulfil the dreams of 'Atma Nirbhar Bharat'. ■■



# Growing Relevance of a Career in Integrated Circuit Design

**Prof. (Dr.) Deepti Mehrotra**

Head - Accreditation, Ranking & Quality Assurance and Professor  
Amity School of Engineering and Technology (ASET), Noida

**A**n Integrated Circuit (IC), also referred as a microchip, a microelectronic circuit, or just a chip, is an assembled unit where different electronic components are fabricated as a single silicon chip. These Semiconductors devices are building blocks for all electronic products and constitute a significant share of the Bill of Material (BOM). The popularity of electronic devices like mobile phones, computers, digital cameras, medical equipment, all smart home appliances, and usage of the Internet of Things (IoT) in various sectors like automobiles, agriculture and many more have aided in an overall upsurge of the semiconductors industry. These chips are also the backbone of the IT sector. The compound annual growth rate (CAGR) projection of the IC Industry in the global market is 12.8% in the next five years. Expansion of the market is driven by rising laptop demand, expanding manufacturing, increased use of high-end personal computers and cutting-edge mobile phones, and growing acceptance of IoT devices in most manufacturing industries. The Gartner Symposium projected by 2021, there will be 25 billion gadgets connected to the web. These gadgets will require ICs with embedded technology to sense the environment and interact with other devices. Earlier, traditional computers were the most prominent integrated circuit market segment. With technological advancement, possible minimization of size and boost adaptability and dependability of these microchips had interlaced with other Technologies.

## ICs: Driving Growth and India's Semiconductor Vision

ICs are now an integral part of other sectors. Modern vehicles are fully loaded with microchips and microcontrollers, and hence a specialized chip designing industry, "Automotive Integrated Circuit (AICs)," sprouted. These chips are used in developing autonomous vehicles to enhance driver support systems, connected car systems, automated driving systems, automotive navigation, and transmission control systems. According to McKinsey & Co., it is a \$238 billion industry-accepted to be doubled in the next ten years. Another popular

sector where ICs are prominently used is, manufacturing Smart appliances, where a growth of approximately 10% is forecasted by 2030. Along with normal ICs, Radiofrequency ICs are also used, which provide wireless communication features. This industry focuses on designing ICs with Intelligent programming and operation system inbuilt with it. The Semiconductor in Healthcare is projecting a growth of 11.41% in the next five years. Keeping pace with the global scenario, the Government of India has undertaken several initiatives to promote integrated circuit (IC) design and semiconductor manufacturing. Indian Government emphasized developing the semiconductor ecosystem that, in turn, catalyzes India's rapidly expanding electronics manufacturing and innovation ecosystem. The National Policy on Electronics 2019 aims to position India as a global hub for Electronics System Design and Manufacturing (ESDM) and envisions the creation of a vibrant semiconductor chip design ecosystem.

## India's Electronics Manufacturing & Semiconductor Boom

As a result of several initiatives taken by the Government and efforts of the industry, the domestic production of electronic goods has increased substantially from Rs. 2,43,263 crore (USD 37 billion) in 2015-16 to Rs. 5,54,461 crore (USD 74.7 billion) in 2020-21 growing at a Compound Annual Growth Rate (CAGR) of 17.9%. Many policies of the Government, including the flagship Production Linked Incentive (PLI) Schemes, the Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors, fund allocation like the Electronic Development Fund (EDF), Modified Electronics Manufacturing Cluster (EMC 2.0) Scheme are major steps towards making India "AtmaNirbhar" in electronics manufacturing. The Indian Government established the EDF to support innovation, research and development, and entrepreneurship in the ESDM sector by providing financial assistance, venture capital, and funding to promote IC design. M-SIPS is a scheme implemented by the Government to provide financial incentives to encourage large-scale manufacturing and design capabilities in the ESDM sector. EMC scheme to promote the establishment of electronics manufacturing clusters across the country to facilitate infrastructure,

facilities, and shared amenities for semiconductor and IC design companies, fostering collaboration and growth in the sector. Under AtmaNirbhar Bharat (Self-Reliant India) Initiative, emphasis is laid on reducing import dependency by encouraging domestic IC design and semiconductor manufacturing capabilities. Momentum to this drive was further given by the launch of the Semicon India programme, with a total outlay of INR 76,000 crore for the development of the semiconductor and display manufacturing ecosystem. The four schemes were launched under it.

1. **Setting up of Semiconductor Fabs**
2. **Setting up Display Fabs, i.e., TFT LCD / AMOLED-based display fabrication facilities.**
3. **Setting up of Compound Semiconductors / Silicon Photonics / Sensors (including MEMS) Fab and Semiconductor Assembly, Testing, Marking and Packaging (ATMP) / OSAT facilities**
4. **Design Linked Incentive (DLI) Scheme** offers financial incentives, design infrastructure support across various stages of development and deployment of semiconductor design for ICs, Chipsets, Systems on Chips (SoCs), Systems & IP Cores and semiconductor linked plans. The Government has also approved the modernization of the Semiconductor Laboratory, Mohali, as a brownfield Fab.

### Thriving Demand for IC Design Professionals

IC design professionals are in high demand to design and produce new semiconductor chips and shape the technological landscape. IC design careers offer competitive salaries and attractive benefits due to the high demand for skilled professionals. A strong foundation in electrical or electronic engineering or any related field is typically required to pursue a career in IC design. People looking for a job in this industry need to understand the Dynamics and new dimensions of the industry. Getting along with Advancements in Technology, such as the Internet of Things (IoT), artificial intelligence (AI), 5G, and autonomous vehicles, are driving the demand for more powerful, energy-efficient, and specialized integrated circuits. With the evolution of technology, Integrated circuits are becoming more complex.

IC designers drive innovation and product development by creating new chip architectures, optimizing circuit performance, reducing power

consumption, and improving overall system integration. They focus on designing circuits ranging from limited memory capabilities in portable wireless devices to Solid State Drives (SSD) in big data storage workloads. Acceptance of the Internet of Things in various sectors like agriculture, defence, medicine, biotechnology etc., has raised the need to develop innovative sensors by integrating nanotechnology. There is a need for technology experts for low-power design, high-speed interfaces, RF/mixed-signal design, and emerging semiconductor processes. The major challenge chip designers face is shrinking transistor sizes, higher circuit densities, and tighter power constraints.

### Requirements and Tools for Advanced IC Design: Specialized Knowledge and SoC Integration

Specialized knowledge in digital design, Analog/mixed-signal design, verification, and system-level integration is required. The designer must be familiar with industry-standard IC design tools such as Cadence Virtuoso, Synopsys Design Compiler, and Mentor Graphics Pyxis. These tools are used for designing, simulating, and verifying integrated circuits. Electronic Design Automation (EDA) Tools like Cadence Allegro, Mentor Graphics PADS, and Synopsys IC Compiler help in various stages of the design process, including logic synthesis, placement and routing, and verification. Knowledge of hardware description languages like Verilog or VHDL is essential for IC design. HDLs are used to describe the behaviour and structure of digital circuits. Along with advanced technology upgradation, a strong theoretical foundation of Analog and digital circuit design principles is crucial, including circuit analysis, transistor-level design, logic gates, memory circuits, and other essential building blocks of integrated circuits. Understanding semiconductor physics is fundamental to IC design. This includes concepts such as transistor operation, MOSFET characteristics, device modelling, and fabrication processes. System-on-Chip (SoC) Design integrates multiple components and subsystems onto a single chip. Knowledge of SoC design methodologies, bus protocols (e.g., AMBA), interconnects, and integration techniques is important for complex IC design. Proficiency in circuit simulation and verification is necessary to ensure the correctness and performance of designs with tools like SPICE (Simulation Program with Integrated Circuit Emphasis) and System Verilog. ■■







## Engineering the Future: A Conversation with PROF. ABHAY KARANDIKAR, DIRECTOR, IIT KANPUR

**Q. What is the mission and uniqueness of IIT Kanpur?**

As a higher educational institute of national importance, IIT Kanpur aims for excellence in education through a creative and dynamic learning environment. Driven by our motto “Tamaso mā jyotirgamaya” (Lead me from darkness to light), we strive to offer a holistic enabling environment by bridging the gap between academia, industry and society, promoting sustainable research solutions across sectors, and fostering entrepreneurial spirit and skill to youths. Guided by the vision of our founding Director, we strive to ensure that our students inculcate values and leadership qualities that can contribute for the betterment of society and the nation, at large.

**Q. What are the learning outcomes that IIT Kanpur focuses on?**

Education at IIT Kanpur goes beyond the classroom; our strong system calls for the growth of a comprehensive, research and innovation-driven mindset or outcome, clubbed with the academic requirements. IIT Kanpur wants to give students a solid grounding in knowledge and proficiency in their area of study. We think we can develop future leaders who can make impact in a variety of fields

by encouraging a thorough understanding of theoretical concepts, practical skills, and the capacity to use knowledge in addressing real-world issues.

**Q. Placements play a significant role in the career development of engineering students. How does your institute ensure strong placement opportunities for students, and what efforts are made to forge relationships with reputed companies in the industry? Would you like to share some statistics or examples of successful placements from recent years?**

At IIT Kanpur, we have a dedicated Students' Placement Office (SPO) headed by a committee comprising faculty representatives to ensure the best of placement opportunities for our students. SPO staff and student volunteer team help in conducting all the necessary placement-related activities. Apart from regular placement preparations, we prioritize fostering industry collaborations, conducting pre-placement talks, encouraging internships, and leveraging our extensive alumni network, to enhance the scope of placement. To forge relationships with companies, we invite them for pre-placement talks with students. This helps in establishing cohesive understanding among students and recruiters. Students are encouraged and supported to pursue internships with renowned companies. Thanks to

the efforts of our SPO team, the placement season of 2022-2023 witnessed an impressive increase in recruiters, with 55 new companies offering internships and job opportunities. More than 60 companies extended 208 pre-placement offers (PPOs), which is a 33% increase as compared to the last year. A total of 1215 students were placed through the SPO during the academic year 2022-23.

This year, the SPO organized the first-ever industry-academia connect, 'SAMVARDHAN', featuring 15+ companies offering career guidance and hands-on experiences. The event provided students with opportunities to connect with employers, network, exchange ideas, and build professional networks. The SPO collaborated with companies and alumni to offer placement and internship opportunities to differently abled students as well, achieving a placement rate of 73%. With a plan of involving more IITs in this initiative in the future, the joint drive aims to expand the reach and impact of the program, helping to provide more opportunities for such students across the country and to promote greater inclusivity and diversity in the workforce.

**Q. How does your institute foster an environment of innovation and entrepreneurship among engineering students? Can you provide examples of successful initiatives or startups that have emerged from your institute?**

We prioritize providing entrepreneurial encouragement to our students, so that they can transition from being mere job seekers to becoming job creators. We have implemented a dynamic Student Entrepreneurship Policy aligned with the National Innovation & Startup Policy (NISP) and the National Education Policy (NEP) 2020, with a focus on fostering startup incubation among students. Students might choose between taking a semester off and engaging in entrepreneurial activity for registered credits. This initiative intends to further the vision of AtmaNirbhar Bharat (Self-reliant India) and change how people perceive entrepreneurship in society. We have a thriving research and innovation ecosystem at IIT Kanpur, which encourages students and researchers to ideate, innovate and launch their entrepreneurial ventures.

“*The placement season of 2022-2023 witnessed an impressive increase in recruiters, with 55 new companies offering internships and job opportunities. More than 60 companies extended 208 pre-placement offers (ppos), which is a 33% increase as compared to the last year.*”

The extensive portfolio under our technology business incubator, Startup Incubation & Innovation Centre (SIIC) comprises more than 150 startup ventures nurtured within our incubation system, covering a wide range of sectors such as social impact, disability assistance, medical technology, agritech, sustainability, and more.

Over 70 enterprises under the SIIC are led by women. IIT Kanpur's startup ecosystem welcomes students from IITs and other institutions, fostering an innovation-driven mindset among young entrepreneurs. Ranked **number one in the NIRF Innovation Category 2023**, demonstrates the institution's commitment to excellence in academic, research, and innovation, influencing the educational landscape. The goal of AtmaNirbhar Bharat has been supported by a number of IITK startup. **PHOOL's** ground-breaking "flower cycling technology" has sparked revolutionary transformation. It recycles temple flower waste into incense sticks, organic gulaal, vermicompost, and **FLEATHER**, a bio-alternative to animal leather that is also ethically and economically feasible. **PHOOL** has won several awards on national and international level, including the "**BIRAC Innovator Award 2021**". IIT Kanpur's incubator firm, **Noccare**, manufactured invasive high-end ICU ventilators at a low cost. **E-Spin Nanotech** invented and created the Swasa N-95 mask. **EndureAir** manufactures advanced UAV/drone solutions, utilizing IIT Kanpur's expertise in research and development. These drones have been used in disaster

response missions, surveying, and medicine delivery. **Offgrid** is involved in development of efficient & safe batteries using commonly available, eco-friendly materials for the sustainable future. **Kritsnam Technologies**, recognized by DIPP as an Official Start-up for **Make In India** initiative, is a company in the field of IoT with focus on water resource management solutions for the sustainable future.

**Q. In today's rapidly evolving technological landscape, what steps does your institute take to ensure that the curriculum remains up-to-date and aligned with industry demands?**

To keep up with the dynamic industry and technological advancements, we constantly update our curriculum to meet evolving needs. Our introduction of new interdisciplinary programs, prioritization of hands-on learning through internships, research projects, and experiential courses, and enhancement of student counseling services are some of the priority-based measures. These reforms align with the National Education Policy (NEP) 2020, which emphasizes flexible curricula and multidisciplinary education.

In 2021, we conducted a comprehensive review of undergraduate and postgraduate curriculum, incorporating recommendations from the Undergraduate and Postgraduate Academic Review Committees. Our academic programs already offer flexibility, with options for double majors, minors, dual degrees, and master's degrees in different fields.



Under the curriculum revamp, we proposed additional degree alternatives such as Honours degree and inter-departmental programs encompassing social sciences, communication, humanities, economics, management, and environment (SCHEME). The Institute has introduced the first of its kind eMasters Degree with industry-focused programs, specially designed for working professional to help them learn new skills and extend career opportunities in cutting-edge fields. The undergraduate education framework includes opportunities for student exchange during the Master's phase, admission through global Olympiads, recognition of academic credits for entrepreneurial and industry-based experiences, and an exit option degree for students who choose to discontinue the program.

To further enhance multidisciplinary education as per NEP 2020, IIT Kanpur has also established new departments focused on economic sciences, cognitive science, sustainable energy engineering, design, and space science and astronomy.

**Q. What steps does your institute take to promote industry-academia collaboration, practical experience and exposure through internships, or industry projects? Can you**

**share any notable industry partnerships that have benefited your students?**

For any IIT or higher educational institute, ensuring a robust ecosystem of industry-academia collaboration is essential for various institutional as well as student-development goals. At IIT Kanpur, we are committed to foster strong industry-academia collaboration through industry-sponsored research projects, consultancy services, specialized technical assistance, and establishment of industry-focused R&D centers. We actively engage with startup incubation, patent licensing, and technology transfer.

**Q. What initiatives or resources does your institute provide to support students in developing essential skills such as teamwork, communication, and leadership, which are crucial for a successful engineering career?**

At IIT Kanpur, we prioritize the development of essential skills such as teamwork, communication, and leadership among our students, through a diverse range of initiatives and resources.

Our workshops, training programs, and project-based learning opportunities enable students to enhance

their problem-solving and collaboration abilities. Our Students' Placement Office (SPO) plays a crucial role in their career journey by providing career counseling sessions conducted by professionals, focusing on soft skills, professional communication, and personality development.

We also offer resume writing workshops to assist students in creating impressive resumes. By collecting corporate feedback on employee expectations and sharing feedback from previous placement experiences, the SPO ensures that the graduating students are one-step ahead in their preparations. We also organize career awareness talks by esteemed alumni, further enriching students' understanding of potential career paths.

IIT Kanpur encourages student clubs and organizations to offer platforms for experiential learning and leadership development, as well. The recent development in this regard is the formation of the Toastmasters (TM) Club under the Students' Placement Office.

This Club, established with the support from our alumnus Mr. Suresh Bazaj, aims to enhance the students' communication and leadership skills, and foster self-confidence and personal growth.



**Q. In the wake of global challenges like climate change and sustainability, how does your institute incorporate these aspects into the engineering curriculum and encourage students to contribute to sustainable development?**

Climate emergency is a grave concern for all and as higher educational institutes, we have a major role to play. IIT Kanpur has established the Chandrakanta Kesavan Centre for Energy Policy and Climate Solutions. It assists policy makers with practical solutions to the problems of climate change. The Centre is the driving force behind IIT Kanpur's commitment to carbon neutrality. A master's program with a focus on Energy, Technology, and Policy as well as an online master's program in Energy, Technology, Economics, and Policy have been undertaken as a component of this centre. As far as curriculum is concerned, IIT Kanpur has a dedicated Department of Sustainable Energy Engineering, which, apart from offering degree programs at the juncture of sustainability, alternative energy, and climate change, also offers multidisciplinary research opportunities that hold the potential to contribute to the larger national goal. Our state-of-the-art research facilities give the students an opportunity to be engaged in air pollution assessment projects, river and water resource management projects, and many more. We also have a student-led 'sustainability cell' and Indian Green Building Council (IGBC) Student Chapter, through which, we are extending the scope for our students to contribute significantly to sustainable development.

**Q. One thing that really interests aspirants is the campus life of an institute, especially when it's their home away from home. How would you describe that at IIT Kanpur?**

We are fortunate to enjoy a thriving campus at IIT Kanpur with a variety of flora and animals, including the peacock—our country's pride. We strive to ensure that the students have all kinds of facilities for their personal as well as professional development within the campus. The office of the Dean of Students' Affairs takes care of all the activities pertaining to student's growth. The Student's Gymkhana, and the Sports and Physical education Committee (SPEC) are responsible for organizing various events. Students get ample scope to engage in extracurricular activities and form collectives to pursue their hobbies at IIT Kanpur.

**Q. Finally, what advice would you give to aspiring engineers who are considering pursuing their engineering education and aspirants who are yet to join engineering programs? What sets your institute apart and makes it an ideal choice for engineering aspirants?**

I believe that all the students who are aspiring to pursue a career in engineering courses, shall choose branches of study as per their strength, not as per what others think or opine.

Many a times, suggestions or pressure from peers or others may misguide students. They should map their strengths first and prioritize the next course of action based on that. In my view, the IITs shall not be compared based on mere rankings as

“*I believe that all the students who are aspiring to pursue a career in engineering courses, shall choose branches of study as per their strength, not as per what others think or opine. Many a times, suggestions or pressure from peers or others may misguide students. They should map their strengths first and prioritize the next course of action based on that.*”

all have unique offerings for students based on their courses of study.

At IIT Kanpur, we have been prioritizing study and research in various inter-disciplinary domains. We also have one of the most flexible academic programs with choices for a double major, minor, and dual degree as well as the option of a master's degree in a different area. IIT Kanpur has been paving the way and has been a top choice for aspirants, starting with the first computer-related courses in India with the arrival of the IBM 1620 to IIT Kanpur in 1963 and now incorporating the new emerging domains like artificial intelligence and machine learning. ■■

# 11th Chronicle's All-India Engineering Colleges Survey 2023

**A**s you step into the world of engineering, choosing the right college is crucial to building a solid foundation for your future career. Whether you dream of designing cutting-edge software, building sustainable infrastructure, or revolutionizing the fields of artificial intelligence and robotics, the college you select can make all the difference.

As the world around us rapidly evolves, so does the realm of engineering and technology. New advancements are being made every day, creating a vast array of opportunities for budding engineers like you. Traditional engineering fields are blending with emerging disciplines, and the landscape of engineering jobs is transforming. In this dynamic scenario, it is crucial for you, the future engineers, to equip yourselves with the right skills and knowledge to stay ahead of the game.

Civil Services Chronicle intends to make this process easier for you and hence has prepared a credible and reliable ranking of the Engineering Colleges in India based on inputs from professionals handling admission procedures, placements, HR and Corporate relations in business. If you're eager to embark on a transformative journey of technical excellence and innovation, our thorough survey which encompasses key factors such as Corporate & Industry Exposure, Curriculum, Infrastructure, Placements, and Entrepreneurship Development will ensure that you make an informed and well-rounded decision about your future alma mater.



## HOW WE CHOSE THE BEST INSTITUTES?

### 1. Desk Research and Factual Data Collection

List of engineering institutes was prepared and they were requested to participate by sending the filled-in questionnaire forms and supporting documents. As per the changing scenario of the tech education, weights of parameters had to be modified as some new sub parameters like skill up gradation, importance given to incubation centers and international collaborations were introduced.

### 2. Validation of Data through Physical Survey

The research team of Chronicle visited numerous institutes which have participated in the survey. The team interacted with the directors, faculty members, current students, academicians. The data was validated and different parameters were critically analyzed.

### 3. Analysis: Final Ranking of the Institutes

*Perceptual Score:* Ratings on various parameters for each institute calculating importance of various parameters to arrive at weights for each parameter by using a regression model.

*Factual Score:* The information collected corresponded to similar parameters as in the perceptual survey. A detailed scoring system was developed for each parameter. The final score for an institute was an average of Perception Score and Factual Score - equal weight age (50:50) was given to both.



## ALL - INDIA TOP ENGINEERING COLLEGES

Rank	Institute Name	City
1	National Institute of Technology, Rourkela	Rourkela
2	National Institute of Technology, Srinagar	Srinagar
3	Koneru Lakshmaiah Education Foundation (Deemed to be University)	Vaddeswaram
4	Indian Institute of Technology Mandi	Mandi
5	B.S. Abdur Rahman Crescent Institute of Science and Technology	Chennai
6	Amity School of Engineering and Technology, Amity University	Noida
7	Vignan's Foundation for Science, Technology & Research	Guntur
8	Vishwakarma Institute of Technology	Pune
9	Chitkara University Institute of Engineering & Technology	Punjab
10	Hindustan Institute of Technology and Science (HITS)	Chennai
11	Chaitanya Bharathi Institute of Technology (A)	Hyderabad
12	GMR Institute of Technology	Rajam
13	Pimpri Chinchwad College of Engineering	Pune
14	Chandigarh Group of Colleges, Landran	Mohali
15	Rajkiya Engineering College	Kannauj
16	CMR Institute of Technology, Medchal Road	Hyderabad
17	Sri Sai Ram Institute of Technology	Chennai
18	JSS Academy of Technical Education	Bengaluru
19	AISSMS College of Engineering	Pune
20	GITA Autonomous College	Bhubaneswar
21	Institute of Aeronautical Engineering	Hyderabad
22	Rajarshi Shahu College of Engineering (RSCOE)	Pune
23	MLR Institute of Technology	Hyderabad
24	Faculty of Engineering & Technology, Poornima University	Jaipur
25	Tagore Engineering College	Chennai
26	Matrusri Engineering College	Hyderabad
27	SJC Institute of Technology	Chickballapur
28	ITS Engineering College	Gr. Noida
29	CMR Technical Campus	Hyderabad
30	SCMS School of Engineering & Technology (SSET)	Karakutty
31	Jawaharlal Nehru New College of Engineering (JNNCE)	Shivamogga
32	Vishwakarma Institute of Information Technology	Pune
33	T. John Institute of Technology	Bengaluru
34	Trident Academy of Technology	Bhubaneswar
35	R.C. Patel Insitute of Technology	Shirpur
36	Vivekanand Education Society's Institute of Technology	Mumbai
37	Nandha Engineering College	Erode

38	Sri Sri University	Cuttack
39	Vidyavardhaka College of Engineering	Mysuru
40	The Oxford College of Engineering	Bengaluru
41	Sengunthar Engineering College (Autonomous)	Tiruchengode
42	Sinhgad College of Engineering	Pune
43	G. Pulla Reddy Engineering College (Autonomous)	Kurnool
44	Shri Ram Murti Smarak College of Engineering & Technology	Bareilly
45	Francis Xavier Engineering College	Tirunelveli
46	Government College of Engineering-Srirangam	Tiruchirapalli
47	Jerusalem College of Engineering	Chennai
48	Vidya Pratishthan's Kamalnayan Bajaj Institute of Engineering & Technology	Pune
49	KCG College of Technology	Chennai
50	J.B. Institute of Engineering and Technology	Hyderabad
51	KS Rangasamy College of Technology	Thiruchengode
52	Lakireddy Balireddy College of Engineering	Mylavaram

## ALL - INDIA GRADE-WISE TOP ENGINEERING COLLEGES

### A+++

National Institute of Technology, Rourkela	Rourkela
National Institute of Technology Srinagar	Srinagar
Koneru Lakshmaiah Education Foundation (Deemed to be University)	Vaddeswaram
Indian Institute of Technology Mandi	Mandi
B.S. Abdur Rahman Crescent Institute of Science and Technology	Chennai
Amity School of Engineering and Technology, Amity University	Noida

### A++

Vignan's Foundation for Science, Technology & Research	Guntur
Vishwakarma Institute of Technology	Pune
Chitkara University Institute of Engineering & Technology	Punjab
Hindustan Institute of Technology and Science (HITS)	Chennai
Chaitanya Bharathi Institute of Technology (A)	Hyderabad
GMR Institute of Technology	Rajam
Pimpri Chinchwad College of Engineering	Pune
Chandigarh Group of Colleges, Landran	Mohali
Rajkiya Engineering College	Kannauj
CMR Institute of Technology, Medchal Road	Hyderabad
Sri Sai Ram Institute of Technology	Chennai
JSS Academy of Technical Education	Bengaluru
AISSMS College of Engineering	Pune

## A+

<b>Tagore Engineering College</b>	<b>Chennai</b>
<b>Trident Academy of Technology</b>	<b>Bhubaneswar</b>
<b>GITA Autonomous College</b>	<b>Bhubaneswar</b>
<b>Institute of Aeronautical Engineering</b>	<b>Hyderabad</b>
<b>Rajarshi Shahu College of Engineering (RSCOE)</b>	<b>Pune</b>
<b>MLR Institute of Technology</b>	<b>Hyderabad</b>
<b>Faculty of Engineering &amp; Technology, Poornima University</b>	<b>Jaipur</b>
<b>Matrusri Engineering College</b>	<b>Hyderabad</b>
<b>SJC Institute of Technology</b>	<b>Chickballapur</b>
<b>ITS Engineering College</b>	<b>Gr. Noida</b>
<b>CMR Technical Campus</b>	<b>Hyderabad</b>
<b>SCMS School of Engineering &amp; Technology (SSET)</b>	<b>Karakutty</b>
<b>Jawaharlal Nehru New College of Engineering (JNNCE)</b>	<b>Shivamogga</b>
<b>Vishwakarma Institute of Information Technology</b>	<b>Pune</b>
<b>T. John Institute of Technology</b>	<b>Bengaluru</b>
<b>R.C. Patel Institute of Technology</b>	<b>Shirpur</b>
<b>Vivekanand Education Society's Institute of Technology</b>	<b>Mumbai</b>

## A

<b>Nandha Engineering College</b>	<b>Erode</b>
<b>Sri Sri University</b>	<b>Cuttack</b>
<b>Vidyavardhaka College of Engineering</b>	<b>Mysuru</b>
<b>The Oxford College of Engineering</b>	<b>Bengaluru</b>
<b>Sengunthar Engineering College (Autonomous)</b>	<b>Tiruchengode</b>
<b>Sinhgad College of Engineering</b>	<b>Pune</b>
<b>G. Pulla Reddy Engineering College (Autonomous)</b>	<b>Kurnool</b>
<b>Shri Ram Murti Smarak College of Engineering &amp; Technology</b>	<b>Bareilly</b>
<b>Francis Xavier Engineering College</b>	<b>Tirunelveli</b>

## B+++

<b>Government College of Engineering-Srirangam</b>	<b>Tiruchirapalli</b>
<b>Jerusalem College of Engineering (Autonomous)</b>	<b>Chennai</b>
<b>Vidya Pratishthan's Kamalnayan Bajaj Institute of Engineering &amp; Technology</b>	<b>Pune</b>
<b>KCG College of Technology</b>	<b>Chennai</b>
<b>J.B. Institute of Engineering and Technology</b>	<b>Hyderabad</b>
<b>KS Rangasamy College of Technology</b>	<b>Thiruchengode</b>
<b>Lakireddy Balireddy College of Engineering</b>	<b>Mylavaram</b>



## ALL - INDIA REGION-WISE TOP ENGINEERING COLLEGES

### SOUTH

Koneru Lakshmaiah Education Foundation (Deemed to be University)	Vaddeswaram
B.S. Abdur Rahman Crescent Institute of Science and Technology	Chennai
Vignan's Foundation for Science, Technology & Research	Guntur
Hindustan Institute of Technology and Science (HITS)	Chennai
Chaitanya Bharathi Institute of Technology (A)	Hyderabad
GMR Institute of Technology	Rajam
CMR Institute of Technology, Medchal Road	Hyderabad
Sri Sai Ram Institute of Technology	Chennai
JSS Academy of Technical Education	Bengaluru
Institute of Aeronautical Engineering	Hyderabad
MLR Institute of Technology	Hyderabad
Tagore Engineering College	Chennai
Matrusri Engineering College	Hyderabad
SJC Institute of Technology	Chickballapur
CMR Technical Campus	Hyderabad
SCMS School of Engineering & Technology (SSET)	Karakutty
Jawaharlal Nehru New College of Engineering (JNNCE)	Shivamogga
T. John Institute of Technology	Bengaluru
Nandha Engineering College	Erode
Vidyavardhaka College of Engineering	Mysuru
The Oxford College of Engineering	Bengaluru
Sengunthar Engineering College (Autonomous)	Tiruchengode
G. Pulla Reddy Engineering College (Autonomous)	Kurnool
Francis Xavier Engineering College	Tirunelveli
Government College of Engineering-Srirangam	Tiruchirapalli
Jerusalem College of Engineering (Autonomous)	Chennai
KCG College of Technology	Chennai
J.B. Institute of Engineering and Technology	Hyderabad
KS Rangasamy College of Technology	Thiruchengode
Lakireddy Balireddy College of Engineering	Mylavaram

## WEST

<b>Vishwakarma Institute of Technology</b>	<b>Pune</b>
<b>Pimpri Chinchwad College of Engineering</b>	<b>Pune</b>
<b>AISSMS College of Engineering</b>	<b>Pune</b>
<b>Rajarshi Shahu College of Engineering (RSCOE)</b>	<b>Pune</b>
<b>Vishwakarma Institute of Information Technology</b>	<b>Pune</b>
<b>R.C. Patel Insititute of Technology</b>	<b>Shirpur</b>
<b>Vivekanand Education Society's Institute of Technology</b>	<b>Mumbai</b>
<b>Sinhgad College of Engineering</b>	<b>Pune</b>
<b>Vidya Pratishthan's Kamalnayan Bajaj Institute of Engineering &amp; Technology</b>	<b>Pune</b>

## NORTH

<b>National Institute of Technology Srinagar</b>	<b>Srinagar</b>
<b>Indian Institute of Technology Mandi</b>	<b>Mandi</b>
<b>Amity School of Engineering and Technology, Amity University</b>	<b>Noida</b>
<b>Chitkara University Institute of Engineering &amp; Technology</b>	<b>Punjab</b>
<b>Chandigarh Group of Colleges, Landran</b>	<b>Mohali</b>
<b>Rajkiya Engineering College</b>	<b>Kannauj</b>
<b>Faculty of Engineering &amp; Technology, Poornima University</b>	<b>Jaipur</b>
<b>ITS Engineering College</b>	<b>Gr. Noida</b>
<b>Shri Ram Murti Smarak College of Engineering &amp; Technology</b>	<b>Bareilly</b>

## EAST

<b>National Institute of Technology, Rourkela</b>	<b>Rourkela</b>
<b>Trident Academy of Technology</b>	<b>Bhubaneswar</b>
<b>Sri Sri University</b>	<b>Cuttack</b>
<b>GITA Autonomous College</b>	<b>Bhubaneswar</b>

*“The ideal engineer is a composite... He is not a scientist, he is not a mathematician, he is not a sociologist or a writer, but he may use the knowledge and techniques of any or all of these disciplines in solving engineering problems.” - N.W. Dougherty*”

### Best in Placements



National Institute of Technology Rourkela



B.S. Abdur Rahman Crescent Institute of Science and Technology, Chennai



Koneru Lakshmaiah Education Foundation (Deemed to be University), Vaddeswaram



Amity School of Engineering and Technology, Amity University, Noida



Indian Institute of Technology Mandi



Vishwakarma Institute of Technology Pune



National Institute of Technology Srinagar



Chitkara University Institute of Engineering & Technology, Punjab



Hindustan Institute of Technology and Science (HITS), Chennai



Chandigarh Group of Colleges, Landran, Mohali

### Best in Industry & Academia Tie-ups



B.S. Abdur Rahman Crescent Institute of Science and Technology, Chennai



Tagore Engineering College, Chennai



Pimpri Chinchwad College of Engineering, Pune



CMR Institute of Technology, Medchal Road, Hyderabad



National Institute of Technology Rourkela



SCMS School of Engineering & Technology (SSET), Karakutty



Vishwakarma Institute of Technology Pune



Vivekanand Education Society's Institute of Technology, Mumbai













Chitkara University Institute of Engineering & Technology, Punjab



Trident Academy of Technology, Bhubaneswar



### Best in Experiential Learning

- |  |  |   |   |   |
|--|--|---|---|---|
| <p>Amity School of Engineering and Technology, Amity University, Noida</p>  | <p>Koneru Lakshmaiah Education Foundation (Deemed to be University), Vaddeswaram</p>  | <p>G. Pulla Reddy Engineering College (Autonomous), Kurnool</p>  | <p>Chaitanya Bharathi Institute of Technology (A), Hyderabad</p>        | <p>Faculty of Engineering &amp; Technology, Poornima University, Jaipur</p>  |
| <p>SCMS School of Engineering &amp; Technology (SSET), Karakutty</p>        | <p>Chandigarh Group of Colleges, Landran, Mohali</p>                                  | <p>Vishwakarma Institute of Technology, Pune</p>                 | <p>Jawaharlal Nehru New College of Engineering (JNNCE), Shivamogga</p>  | <p>Vishwakarma Institute of Information Technology, Pune</p>                 |

### Best in Infrastructure

- |  |   |
|--|---|
| <p>National Institute of Technology, Rourkela</p>                                      | <p>Indian Institute of Technology, Mandi</p>                                  |
| <p>Amity School of Engineering and Technology, Amity University, Noida</p>            | <p>Sri Sri University, Cuttack</p>   |
| <p>Koneru Lakshmaiah Education Foundation (Deemed to be University), Vaddeswaram</p>  | <p>Faculty of Engineering &amp; Technology, Poornima University, Jaipur</p>  |
| <p>Chitkara University Institute of Engineering &amp; Technology, Punjab</p>          | <p>JSPM's Rajarshi Shahu College of Engineering (RSCOE)</p>                  |
| <p>Hindustan Institute of Technology &amp; Science (HITS), Chennai</p>                | <p>Tagore Engineering College, Chennai</p>                                   |

### Best in Nurturing Entrepreneurship

- |  |   |
|--|---|
| <p>B.S. Abdur Rahman Crescent Institute of Science and Technology, Chennai</p>         | <p>Trident Academy of Technology, Bhubaneswar</p>              |
| <p>Koneru Lakshmaiah Education Foundation (Deemed to be University), Vaddeswaram</p>  | <p>Rajkiya Engineering College, Kannauj</p>                    |
| <p>Sri Sri University, Cuttack</p>    | <p>Vishwakarma Institute of Technology Pune</p>                |
| <p>MLR Institute of Technology, Hyderabad</p>   | <p>Francis Xavier Engineering College, Tirunelveli</p>         |
| <p>SJC Institute of Technology, Chickballapur</p>                                     | <p>Jerusalem College of Engineering (Autonomous), Chennai</p>  |



# Outcomes Based Knowledge is Important for Current Job Scenario

**Dr. H. S. Pali**

Nodal Officer Institute Rankings  
National Institute of Technology Srinagar (J&K)

In today's rapidly evolving job market, the importance of education extends beyond the acquisition of knowledge. While knowledge forms the foundation, it is equally crucial to equip students with advanced skills that align with the demands of the current professional landscape. The main objective is to explore the significance of imparting advanced skills alongside knowledge to adequately prepare students for the challenges and opportunities that await them in the modern job market. There are a few reasons why advanced skills are vital:

## 1. The evolving nature of the job market:

The job market has undergone significant transformations in recent years. Technological advancements, globalization, and automation have reshaped industries, leading to the emergence of new job roles and the phasing out of traditional ones. To succeed in this dynamic landscape, students need to possess more than just theoretical knowledge. They must be equipped with practical skills that enable them to adapt, innovate, and thrive in the face of evolving demands.

## 2. The value of advanced skills:

Advanced skills, also known as soft skills or state of art, have become increasingly sought after by employers. Advanced skills focus on applying knowledge in practical scenarios. This helps students bridge the gap between theoretical understanding and practical implementation.

These skills go beyond subject-specific knowledge and encompass a range of abilities that enable individuals to navigate complex work environments successfully. Skills such as critical thinking, communication, teamwork, adaptability, and digital literacy are highly valued in the current job market. By engaging in hands-on learning experiences, students develop problem-solving, critical thinking, and decision-making skills, which are highly valued in today's job market.

Moreover, by imparting these skills, educational institutions can enhance students' employability and equip them with the tools needed to thrive in various professional domains.

## 3. The limitations of knowledge-based education:

While knowledge is undoubtedly crucial, a purely knowledge-based education may fall short in preparing students for the modern job market. Traditional education systems have often focused on theoretical concepts and rote memorization, neglecting the development of critical skills such as problem-solving, creativity, communication, collaboration, and adaptability. As a result, many graduates face challenges when entering the workforce, as their education may not have equipped them adequately for the realities of professional life.

## 4. Bridging the gap between education and industry:

To ensure a seamless transition from education to employment, educational institutions must bridge the gap between academia and industry. Collaborations with businesses, internships, and real-world projects can provide students with practical experiences and

“*In the fast-paced and competitive job market of today, equipping students with advanced skills is as important as imparting knowledge. By prioritizing the development of skills such as critical thinking, communication, adaptability, and collaboration, educational institutions can empower students to succeed in a rapidly evolving professional landscape.*”

opportunities to develop advanced skills in a professional context.

Additionally, incorporating experiential learning methodologies, such as case studies, simulations, and project-based assignments, can help students apply their knowledge and develop the skills necessary for the job market.

### 5. Entrepreneurship and Innovation:

Advanced skills empower students to think creatively, explore new ideas, and become innovative problem solvers. In an increasingly competitive job market, entrepreneurship and the ability to generate new opportunities are highly valued. Advanced skill development encourages students to take initiative, be proactive, and develop an entrepreneurial mindset.

### 6. Lifelong Learning:

The acquisition of advanced skills encourages a mindset of continuous learning. Students equipped with advanced skills understand the importance of staying updated with industry trends and emerging technologies. They are more likely to pursue professional development opportunities and adapt to changing job requirements throughout their careers.

### 7. Professional Growth:

Advanced skills foster lifelong learning and professional development. Students who have honed their skills are more likely to continue learning and acquiring new knowledge throughout their careers, enabling them to stay relevant and advance in their chosen fields.

### 8. Career Growth:

Advanced skills provide a competitive advantage in the job market and open doors to career growth opportunities. As individuals acquire and demonstrate specialized skills, they become eligible for higher-level roles, promotions, and leadership positions. Continuous development of advanced skills ensures long-term career success and professional growth.

### 9. Emphasizing a holistic approach:

Imparting advanced skills should not be seen as a replacement for knowledge-based education but rather as a complementary component.

A holistic approach that combines a strong academic foundation with the development of advanced skills can produce well-rounded graduates who possess the knowledge and skills required by employers.

By striking a balance between theory and practice, students can cultivate the ability to think critically, solve problems creatively, and adapt to changing circumstances.

In the fast-paced and competitive job market of today, equipping students with advanced skills is as important as imparting knowledge.

By prioritizing the development of skills such as critical thinking, communication, adaptability, and collaboration, educational institutions can empower students to succeed in a rapidly evolving professional landscape.

A comprehensive education that combines knowledge with advanced skills is key to preparing students for the challenges and opportunities they will encounter in the current job market.

Only by providing students with a holistic and balanced educational experience can we ensure their readiness for the careers that lie ahead.







# The Power of Engineering Management: Balancing Technical Expertise and Leadership

**Dr. Akash Agarwal**

Faculty Innovation Ambassador & In-charge College Ranking Accreditation  
Rajkiya Engineering College, Kannauj (UP)

Throughout the recorded chronicles of human history, esteemed individuals who possess exceptional foresight and expertise in the field of engineering have been revered and held in high regard for their invaluable contributions that surpass the limitations of temporal boundaries. The luminaries of ancient times, such as Archimedes, the Romans' remarkable ingenuity, Leonardo da Vinci's visionary contributions during the Renaissance, Nikola Tesla's groundbreaking innovations in electricity, and Isambard Kingdom Brunel's monumental engineering achievements, all exemplify enduring legacies with profound resonance. In the current era characterized by rapid technological advancements and the proliferation of intricate organizational structures, effective leadership necessitates a combination of technical expertise and forward-thinking strategic abilities. Engineering management is a field that combines the technical expertise of engineering with the skills of effective leadership. The article delves into the intricacies of this domain, shedding light on its importance, fundamental nature, and significant impact on the advancement of contemporary engineering.

In a contemporary era characterized by the convergence of technological advancements and human ambition, the role of the engineer has evolved into that of a highly skilled coordinator and facilitator. Contemporary virtuosos in the present era necessitate a multifaceted melodic composition, wherein technical brilliance is seamlessly integrated with astute managerial acumen. Engineering management plays a crucial role in coordinating various elements, combining meticulous attention to detail with strategic planning and coordination. Engineering management is a discipline that provides leaders with a comprehensive perspective, allowing them to move beyond minor details and make important decisions based on thorough data analysis. These decisions are carefully coordinated with the rhythm of human activities, creating a harmonious resonance that extends throughout the organization's various stages of development.

## The Confluence of Technical Proficiency and Leadership Excellence

In a realm where the domains of engineering expertise and strategic organizational navigation converge, the discipline of engineering management assumes a revered and esteemed position. It is at this juncture that the archetypal engineer assumes a dual role, embodying both technical expertise and leadership acumen. The orchestration of engineering management begins with an introductory movement centered on technical expertise—an integrated amalgamation of theoretical knowledge and practical application that intertwines the engineer with the intangible aspects of the field. The foundation is enhanced by a cohesive arrangement of leadership, characterized by visionary boldness, risk-taking, and empowerment.

## The Concept of Managerial Aptitude

The engineer's repertoire is enriched by a diverse range of management skills, which possess a dynamic quality that transcends various domains and industries. Within the vast assortment, a triumvirate of aptitudes shines as guiding lights of strategic superiority.

### 1. Interpersonal Competencies (Human Skills)

The foundation of effective management expertise resides in the domain of interpersonal connections, encompassing the coordination of leadership, innovation, emotional intelligence, and motivation. The engineer undergoes a transformation, embodying a symbol of accountability and assuming the burden of responsibility for their actions

“*The fusion of leadership and technical expertise forms a complex interplay that facilitates a harmonious collaboration, enabling engineers to assume leadership roles, innovate ground-breaking strategies, and embody the channels through which strategic visions are realized.*”

and the resulting consequences. The concept of emotional intelligence is characterized by its ability to effectively navigate and manage the complex range of human emotions, fostering a sense of camaraderie and resilience. Innovation represents a progressive culmination, empowering engineers to develop cutting-edge solutions, imparting a distinctive rhythm to the complexities they encounter.

## 2. Hybrid Skills

Hybrid skills refer to a combination of different abilities or competencies that are integrated and utilized in a synergistic manner. Located at the intersection of engineering and management, hybrid competencies such as effective communication, problem-solving abilities, and project management skills converge as essential components of engineering leadership. Communication plays a crucial role in facilitating the exchange of information and ideas between individuals with technical expertise and the broader organizational context in which they operate. The act of problem-solving can be seen as a harmonious interplay between creative thinking and the application of analytical skills, resulting in strategic resolutions. Project management, a fundamental aspect of coordination, involves the use of a conductor's baton to coordinate complex symphonies towards successful completion.

## 3. Proficiency in Technical Skills

The realm of engineering expertise is intricately intertwined with the essential components of technical proficiency, encompassing operations, research, problem-solving, and integration. The highly skilled engineer adeptly navigates the complexities of specialized knowledge, crafting solutions that embody both efficiency and innovation.

Within the expansive realm of engineering, where the vibrant spirit of progress reverberates, the field of engineering management emerges as a pathway to advancement. The fusion of leadership and technical expertise forms a complex interplay that facilitates a harmonious collaboration, enabling engineers to assume leadership roles, innovate ground-breaking strategies, and embody the channels through which strategic visions are realized. Engineering managers possess a unique combination of technical expertise, managerial skills, and leadership qualities, enabling them to surpass the role of mere practitioners and assume the responsibilities of progress architects and custodians of lasting legacies.

## Achieving Synergy in the Integration of Skillsets

In this narrative of change, the focus is now directed towards the inherent aspects of each set of skills, resembling a symphonic composition that clarifies the subtleties of excellence. Embark on an intellectual exploration of the fundamental principles that illuminate the trajectory of excellence in engineering.

The first category of skills that are essential for individuals to possess is known as human skills. The principles of accountability within the engineer a sense of ethical conduct, promoting an atmosphere of reliance and obligation. Emotional intelligence, a concept encompassing empathetic resonance, enables engineers to effectively navigate the complexities of human interaction with composure and expertise. Innovation, often likened to a virtuoso's cadenza, serves as a catalyst for discovering new solutions, empowering engineers to act as architects of unexplored domains.

Hybrid skills referring to a combination of different abilities or competencies that are typically found in multiple domains or disciplines. Communication plays a crucial role in facilitating understanding, as it has the ability to convert complex technical terminology into accessible and coherent information that can be understood by all individuals involved in a given context. The act of problem-solving, characterized by the application of analytical skills and mental acuity, involves navigating through complex challenges with determination and resourcefulness. Project management, often likened to the symphony of orchestration, plays a crucial role in ensuring a harmonious and successful execution of projects, resulting in remarkable achievements.

The engineers demonstrate their technical expertise through the orchestration of operations, the refinement of research findings, the resolution of issues through troubleshooting, and the synthesis of integrated systems.

In the realm of modern engineering, where innovation and coordination converge, engineering management emerges as a remarkable composition. The integration of technical proficiency, effective management skills, and adept leadership abilities paves the way towards achieving exceptional outcomes—a journey in which engineers evolve into virtuosos of creativity, embarking on a synchronized voyage of strategic advancement. The field of engineering management has gained prominence as a significant endeavour that harmonizes human ingenuity and visionary leadership, resonating with the ongoing march of progress throughout history. ■■

# Increasing Relevance of Prompt Engineering Career: Nurturing AI Language Models

**A**s artificial intelligence (AI) and natural language processing (NLP) continue to evolve and shape various industries, the field of prompt engineering is gaining significant relevance. Prompt engineering involves designing and refining prompts to guide AI language models towards generating more accurate and contextually relevant output. In this article, we will explore the growing importance of prompt engineering as a career and its role in nurturing AI language models to deliver better results.

## The Power of AI Language Models

AI language models have demonstrated remarkable capabilities in processing and understanding human language. These models, such as OpenAI's GPT (Generative Pre-trained Transformer) series, have the potential to generate text, answer questions, carry out tasks, and even engage in conversations that closely resemble human-like responses. However, to harness the full potential of these models, proper prompt engineering is vital.

## The Role of Prompt Engineering

Prompt engineering enhances the functionality and performance of AI language models. It involves strategically framing prompts that provide the necessary context, guidelines, or specific instructions to

elicit the desired output. By carefully designing prompts, prompt engineers shape the behavior and outcomes of language models, making them more useful and relevant for a wide range of applications.

## Increasing Demand for Prompt Engineering

As AI language models become more prevalent across industries, the demand for effective prompt engineering is rapidly increasing. Here are several reasons why the relevance of prompt engineering as a career is on the rise:

- **Improving Accuracy and Relevance:**

Prompt engineering allows language models to generate highly accurate and contextually relevant output. For industries such as customer service, content generation, virtual assistants, and





data analysis, the ability to produce precise and meaningful responses is crucial.

Prompt engineers with expertise in constructing prompts that provide clear guidelines and context are invaluable in fine-tuning these models to deliver the desired results.

- **Customizing Models for Specific Tasks:**

General-purpose language models can be tailored to specific tasks or domains through prompt engineering.

By understanding the nuances and requirements of specific industries, prompt engineers can develop specialized prompts that enable AI models to deliver more targeted and industry-specific responses.

This customization enhances the model's capabilities and makes it more applicable across various professional fields.

- **Mitigating Bias and Ethical Concerns:**

AI language models have been criticized for perpetuating biases present in their training data. Prompt engineering offers an opportunity to address these concerns by providing explicit instructions and guidelines that promote fairness and ethical language generation.

Prompt engineers play a crucial role in mitigating biases and shaping the ethical behavior of AI language models.

- **Enhancing User Experience:**

Prompt engineering focuses on crafting prompts that yield accurate and relevant responses, thereby enhancing the user experience. Whether it's enabling chatbots to answer customer queries effectively or providing personalized recommendations, prompt engineers contribute to creating AI systems that interact seamlessly with users and meet their specific needs.

- **Driving Innovation in AI:**

Prompt engineering is still a growing field, and there is ample opportunity for innovation and advancement. Developing new techniques, algorithms, and approaches to prompt engineering can lead to better methods of guiding AI language models, improving their performance, and unlocking new possibilities for their applications.

Prompt engineering plays a pivotal role in improving the performance and relevancy of AI language models. As industries increasingly adopt AI technologies, the demand for skilled prompt engineers will continue to grow.

By honing their expertise, prompt engineers can contribute to creating more accurate, unbiased, and contextually relevant AI language models, thereby driving advancements in the field and delivering enhanced user experiences.

Embracing a career in prompt engineering offers an exciting opportunity to shape the future of AI and make a significant impact across industries. ■■

## NURTURING THE CAREER OF PROMPT ENGINEERING

To thrive in the field of prompt engineering, individuals can consider the following steps:

- **Develop Strong NLP Foundations:** Acquire a solid understanding of natural language processing techniques and algorithms. Stay updated with the latest advancements in the field and familiarize yourself with different language models and their capabilities.
- **Practice Hands-On Prompt Engineering:** Gain practical experience by working with language models and actively engaging in prompt engineering tasks. Experiment with different prompts, evaluate their impact on model performance, and identify strategies to improve context and relevance.
- **Collaborate with AI Researchers and Developers:** Foster collaborations with experts in the AI field, including researchers and developers. Engage in discussions, share insights, and leverage their expertise to further enhance your prompt engineering skills.
- **Stay Informed and Adapt to Changing Technologies:** Prompt engineering is a dynamic field, with new models and methodologies constantly emerging. Stay informed about developments in AI language models, prompt engineering techniques, and ethical considerations to stay at the forefront of the industry.
- **Contribute to the Community:** Participate in AI conferences, workshops, and forums to share your knowledge, insights, and research findings. Engage with the prompt engineering community, exchange ideas, and contribute to open-source projects to advance the field collectively.



## B.S. Abdur Rahman Crescent Institute of Science and Technology: Empowering Minds and Shaping a Sustainable Future

**Prof. Dr. T. Murugesan**

Vice-Chancellor

B.S. Abdur Rahman Crescent Institute of Science and Technology

**B**.S. Abdur Rahman Crescent Institute of Science and Technology (Deemed to be University) stands as a testament to the visionary dream of Dr. B.S. Abdur Rahman, a great philanthropist, a reformer and a first-generation self-made entrepreneur. He established this institution in 1984 which spreads across 50-19 acres in Vandalur, Chennai, as a not-for-profit entity with the aim of uplifting the socially disadvantaged sections, particularly the Muslim community. The institute continues to embody the founder's spirit and works towards fostering inclusivity and equal opportunities for all. Today, it stands as a leading institution that offers outstanding education at an affordable cost, making it a top choice among students and parents alike.

Since its inception, this Deemed-to-be University has been led by eminent academicians, administrators and former Vice-Chancellors of Central, State and Foreign Universities. The Vice-Chancellor is ably assisted by well-qualified and experienced Registrar, Deans, Directors and Heads of the Departments. The University follows the guidelines, decisions and directions of the Board of Management. In addition, other statutory bodies like the Finance Committee, Planning & Monitoring Board, Academic Council, Board of Studies, Research Advisory Committee, Research Board and Internal Quality Assurance Cell are established as per UGC guidelines.

Teaching, Research and Consultancy & Extension are the three dimensions of higher education that the institute aspires to lead in. With a long-term objective of becoming a research-intensive university, B.S. Abdur Rahman Crescent Institute is committed to fostering an environment that encourages innovation, creativity and critical thinking.

B.S. Abdur Rahman Crescent Institute offers a wide range of programmes, approved by All India Council for Technical Education (AICTE), Pharmacy Council of India (PCI), Bar Council of India (BCI), Council of Architecture (CoA) and University Grants Commission (UGC), across 23 departments grouped under 12 different schools. With 32 undergraduate, 25 postgraduate, and PhD programmes, about 9000 students have the opportunity to specialize in disciplines such as engineering and technology, computer science and applications. architecture. pharmacy, life sciences, law, physical and chemical sciences, management, commerce, social sciences, and arts and humanities.

Adequate research infrastructure facilities are created in the Institute to conduct research in thrust areas of societal needs. Aside from the self-financing by Crescent management, the state-of-the-art facilities are developed through a variety of funded initiatives from significant Government funding organisations like AICTE, DST, DBT, CSIR, DRDO, MoIT, MoEF and DAE-BRNS. Other amenities include a computerized library with e-resources and e-journals are made available for the Research scholars.

### Research Outcomes: (to be updated)

(i) h-Index	-	72
(ii) i10 – index	-	851
(iii) Highest Impact Factor	-	18-96
(iv) Average Impact Factor	-	2-821
(v) Publications	-	6660+
(vi) Citations	-	30000+

### Accolades and Recognitions:

The exceptional quality of education and infrastructure provided by B.S. Abdur Rahman Crescent Institute has earned numerous accolades and recognition in recent years.

The National Assessment and Accreditation Council (NAAC) accredited the institute with an A+ grade for five years from 2021 to 2026. More than 60% of eligible Undergraduate and Postgraduate Engineering and



Technology and Management programmes have received accreditation under the Tier-I category (Washington Accord) from the National Board of Accreditation (NBA), New Delhi. The institute has consistently been ranked by the National Institutional Ranking Framework (NIRF) India Rankings under various categories since 2016. It also participates in global rankings like THE WUR/Asia/Impact Ranking and QS WUR/Asia, to further establish its commitment to benchmarking quality on an international level.

### NIRF Rankings 2023

Engineering	:	Rank-band 101-150
Management	:	Rank-band 101-125
Innovation	:	Rank-band 11-50

### DataQuest Top T-School Ranking 2023

India Private	:	1
South India Overall	:	2
India Overall	:	4

### THE Impact Rankings 2023

Recognizing our responsibility to address global challenges, the Institute actively participate in the Times Higher Education (THE) Impact Rankings & the only global performance tables that assess universities against the United Nations' Sustainable Development Goals

(SDGs). These rankings provide comprehensive and balanced comparisons across four key areas: research, stewardship, outreach and teaching.

In the recently announced THE Impact Rankings 2023, B.S. Abdur Rahman Crescent Institute achieved remarkable rankings in several SDGs, further highlighting our commitment to sustainable development:

### THE Impact Ranking 2023 Results

- 3<sup>rd</sup> Rank in India (75<sup>th</sup> in the World) - SDG 4
- 3<sup>rd</sup> Rank in India (77<sup>th</sup> in the World) - SDG 6
- 6<sup>th</sup> Rank in India (101-200 in the World) - SDG 7
- 5<sup>th</sup> Rank in India (301-400 in the World) - SDG 17
- 10<sup>th</sup> Rank in India (401-600 in the World) - Overall

With these outstanding rankings in specific SDGs, B.S. Abdur Rahman Crescent Institute proves its unwavering dedication to creating a sustainable future and contributing to global development goals. We are proud to announce that our institution secured the **10<sup>th</sup> position in India (401-600 in the World) in the Overall category** of THE Impact Rankings 2023.

At B.S. Abdur Rahman Crescent Institute of Science and Technology, we empower minds, embrace inclusivity, and shape a sustainable future for all- Together, we can make a real difference and create a world that thrives on knowledge, compassion, and progress. ■■



# Budding Role of Environmental Engineering for a Sustainable World

In an era where environmental concerns and sustainability have become paramount, there is an urgent need for professionals who can address the challenges posed by climate change, pollution, and resource depletion. Environmental engineering offers a dynamic and rewarding career path that allows individuals to make a significant impact on creating a more sustainable world. This article aims to highlight the increasing relevance of a career in environmental engineering and why it is an excellent option for students considering engineering as their career choice.

## Understanding Environmental Engineering

Environmental engineering is a branch of engineering that applies scientific and engineering principles to protect the environment, public health, and promote sustainability. It involves the development and implementation of innovative solutions to address environmental issues such as air and water pollution, waste management, renewable energy, and climate change mitigation.

A career as an environmental engineer can be an exciting and rewarding path for individuals passionate about making a positive impact on the environment. Environmental engineers use their engineering expertise to develop solutions that address environmental challenges and promote sustainability.

## Tackling Global Environmental Challenges

The world is facing unprecedented challenges, including climate change, dwindling natural resources, and escalating pollution levels. Environmental engineers play a critical role in developing technologies and strategies to combat these issues. From designing sustainable infrastructure to developing eco-friendly waste management systems, environmental engineers contribute directly to the global effort to build a greener and more sustainable future.

## High Demand for Environmental Engineers

As awareness of environmental issues grows, so does the demand for qualified environmental engineers. Governments, industries, and non-governmental organizations are actively seeking professionals who can devise sustainable solutions. The demand for environmental engineers spans various sectors,

including energy, construction, transportation, and water management, making it a versatile and recession-resistant career option.

## A Multidisciplinary Field

Environmental engineering is a multidisciplinary field that draws knowledge from various disciplines like chemistry, biology, geology, and engineering. As a result, aspiring environmental engineers gain a well-rounded education that equips them with a broad skill set. This diversity allows them to approach problems from multiple angles and find innovative solutions that benefit both the environment and society.

## Emphasis on Sustainable Development

Environmental engineers are at the forefront of promoting sustainable development, which balances economic growth with social equity and environmental protection. Sustainable development practices aim to meet the needs of the present without compromising the ability of future generations to meet their own needs. By incorporating sustainability principles into their projects, environmental engineers contribute to a more balanced and responsible approach to progress.

## Global Impact and Travel Opportunities

Environmental issues are not limited by geographical boundaries. As an environmental engineer, one can work on projects worldwide, collaborating with diverse cultures and communities to address pressing environmental concerns. This provides unique opportunities for travel and international experience, allowing individuals to broaden their horizons while making a positive impact on a global scale.

## Innovation and Technology Advancements

The field of environmental engineering is constantly evolving with advancements in technology. From renewable energy solutions and smart waste management systems to cleaner industrial processes, innovation plays a pivotal role in solving environmental challenges.

As an environmental engineer, one can be at the cutting edge of these technological advancements, making a tangible difference in creating a sustainable world.

## Collaborative and Diverse Work Environment

Environmental engineering offers a collaborative and diverse work environment. As environmental issues require a multidisciplinary approach, environmental engineers often work alongside professionals from various fields such as scientists, urban planners, policymakers, and social scientists. This collaborative nature fosters teamwork and creativity, allowing individuals to learn from each other's expertise and broaden their perspectives.

Moreover, the diverse range of projects and challenges that environmental engineers encounter ensures that no two days are alike, making it an exciting and intellectually stimulating career choice.

## Influencing Corporate Sustainability Initiatives

In today's world, corporate sustainability has become a crucial aspect of responsible business practices. Environmental engineers play a pivotal role in assisting companies in implementing sustainable strategies, reducing their environmental footprint, and meeting their sustainability goals. By working with corporations, environmental engineers can drive positive change on a large scale and encourage businesses to embrace environmentally friendly practices. This involvement in corporate sustainability initiatives empowers environmental engineers to be change agents not only in the engineering field but also in the business world, contributing to a greener and more socially responsible private sector.

## Job Responsibilities

Environmental engineers work on a variety of projects that aim to protect the environment and human health. Some of their key responsibilities include:

- **Water and Wastewater Management:** Designing systems for the treatment and distribution of clean water and the collection and treatment of wastewater.
- **Air Quality Management:** Developing strategies to control air pollution and reduce emissions from industrial processes, transportation, and other sources.
- **Waste Management:** Creating plans to handle and dispose of solid and hazardous waste in an environmentally responsible manner.
- **Environmental Impact Assessment:** Evaluating the potential environmental impacts of projects, such as construction or industrial operations, and proposing mitigation measures.
- **Sustainable Development:** Implementing eco-friendly practices and technologies to promote sustainable development and reduce the environmental footprint.



- **Renewable Energy:** Contributing to the development of renewable energy sources like solar, wind, and biomass to reduce reliance on fossil fuels.
- **Remediation Projects:** Assisting with the cleanup and remediation of contaminated sites to restore environmental health.

## Education and Skills

### Key skills for environmental engineers include:

- **Technical Knowledge:** Proficiency in scientific principles, engineering concepts, and environmental regulations is crucial for effective problem-solving.
- **Analytical Thinking:** The ability to analyze complex environmental data, interpret findings, and propose appropriate solutions is vital.
- **Project Management:** Environmental engineers often lead projects, necessitating strong organizational and time management skills.
- **Communication:** Excellent communication skills are necessary to convey technical information to diverse audiences, including clients, policymakers, and the public.
- **Teamwork:** Collaborating with scientists, engineers, and stakeholders is common, making teamwork essential for success.

A career as an environmental engineer is more than a job; it's a calling to protect and restore our planet's delicate ecosystems. With increasing environmental concerns, the demand for skilled professionals in this field is on the rise. Environmental engineers have the unique privilege of being at the forefront of finding solutions to pressing global challenges. As we strive for a more sustainable future, their work becomes ever more critical, shaping a world where humans and nature can thrive harmoniously. ■■



## Tagore Engineering Education for attaining 21<sup>st</sup> Century Skills

**Dr. M. Mala**

Chairperson and Managing Trustee Tagore Group of Institutions

**Dr. R. Ramesh**

Principal  
Tagore Engineering College

**T**agore Engineering College was established by Dr. M. Mala, an educationist and a philanthropist who pledged to the noble task of offering state-of-the-art higher education. So far, the institution has helped 40,000+ students graduate across various institutions under the Tagore Group of Institutions. With its well-defined vision, highly committed mission, and dedicated leadership, Tagore Engineering College strives to be one of the best educational institutions in the country.

*“Ensuring the holistic development of all students and transforming them into vibrant professionals with human values, Tagore Engineering College stands as one of the best engineering colleges in Chennai. The institute not only focuses on providing quality technical education with the right industrial connections but also caters to the needs of the youth through innovative teaching methods.”*

The college's mission is to build resources and sustain a high-quality teaching-learning environment, provide all the required facilities to the faculty and students, and integrate character, ethical, and moral values into human resources. The management's policies offer ample opportunities to the students and staff to achieve excellence in academics and related areas. To support this, all the departments have adequate infrastructural facilities and dedicated staff.

### Rewarding Educational Experiences

Since its inception in 2001, the institution has grown into a vast conglomerate of magnificent buildings, state-of-the-art laboratories, sophisticated internet centers, a modern digital library, and a superlative sports area, each a landmark in itself spread across 100 acres. The institution is situated in a sprawling campus with architecturally and aesthetically designed buildings, blocks, stadiums, auditoriums, hostels, gymnasium, and sports grounds. It is affiliated with Anna University and approved by the All India Council for Technical Education (AICTE), New Delhi.

The most widely used teaching pedagogy at Tagore is the lecture-based method or chalk and talk method. The educators at the Tech Institute use a combination of teaching methodologies to maximize learning effectiveness. The general approach includes organizing lessons, providing feedback, questioning, starting lessons with a review, and ending with closure. This enables students to acquire a deep understanding of subject content and develop their critical-thinking abilities. The college also utilizes delivery methods enabled with Bloom's Taxonomy, project-based learning using ICT tools, and virtual lab exercises to provide the best learning experiences to the students.

“Currently, our college offers UG courses across all major and in-demand streams, along with PG and Ph.D. courses,” shared Dr. R. Ramesh, the Principal of the College. Continuing on his point and elaborating on how Tagore is an engineering college for today's aspirants, he added, **“Never missing any opportunity to provide Industry 4.0 Education to our students, we have partnered with IIT through IIT pals. This enables faculty and students to participate in industry-oriented hands-on programs and enhances students' creativity.”**

The principal also stated that, especially for the year 2022, more than 200 students benefited from the program, and 90 percent of the faculty participated in the FDP oriented by IIT pals. Notably, Tagore Engineering College received the award titled “Award of Excellence in Performance” and “Proud Partner Institute.”





Furthermore, TEC has joined hands with the program organized by the Tamil Nadu government, "Naan Mudhalvan" (I am the first). Under this program, the Tamil Nadu government has now launched "Nalaya Thiran" (Tomorrow's Ability), where 1,000 students have been trained in computer science, electronics, and IT domains, enhancing their problem-solving abilities using technologies. This program aims to help the industry get skilled students, and TEC is committed to giving its 100% towards this noble cause.

### **Beyond Regular Engineering**

Tagore Engineering College has created a holistic environment for the students, away from the bustling polluted city, providing them an eco-friendly space to enhance their learning process. "We have been recognized by AICTE for a Green campus environment and received the Swachh Bharath award given by the Government of India for a clean & green campus," shared Dr. R. Ramesh.

The campus is also completely plastic-free, and students are actively involved through NSS in campus cleaning and helping the neighboring society to be pollution-free. Regular plantation of trees is ensured, with a minimum of 20 trees planted during college events. Moreover, in the year 2022 alone, more than 300 trees were planted by the students and faculty in and around Tagore campus. Additionally, a medicinal garden has been set

up on campus to provide enlightening ideas on natural medicines and their health benefits. The college conducts green environment and energy audits to monitor the serenity of the campus.

TEC is known for impressive industry-academia connections and collaborations. The College has connections with International Universities for conducting FDPs and Conferences. An MOU has been signed with Beta College of Canada for the year 2022 to initiate student exchange and faculty exchange programs.

All in all, research plays an important role at TEC, resulting in several projects sanctioned by different government agencies and worth of 10 crore have been successfully carried out by the Institutions under the umbrella of Tagore Group of Institutions.

More than 250 articles have been published by faculty and students, and in 2022, TEC conducted 3 National level conferences and workshops and 2 International events, along with signing an MOU with leading Educational Institutions and Industries.

Lastly, through AICTE, Kapila, the "IPR literacy program" was oriented and encouraged publication of research patents, and more than 20 patents have been published. The faculty members and students have completed more than 50 NPTEL courses conducted by IIT Madras on skill enhancement in Engineering, Science, and Management. ■■



## TAGORE ENGINEERING COLLEGE

RATHINAMANGALAM, NEAR VANDALUR, CHENNAI-600 127.

[www.tagore-engg.ac.in](http://www.tagore-engg.ac.in)

### UG COURSES

B.E. : Aero, CSE, ECE, MECH  
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### PG COURSES

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## JERUSALEM COLLEGE OF ENGINEERING

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CS & Business Systems, IT

### PG COURSES

M.E.: AE, PED, SE, CEM, CSE & MBA



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**B.TECH(ETC)**  
**B.TECH(EEE)**  
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**B.TECH(MECH)**

**B.TECH(BIOTECH)**  
\* **B.TECH. (CS-Data Science)**  
\* **B.TECH. (Electronics-VLSI Design)**  
\*Applied

## WHY TRIDENT ?

- The ONLY TECHNICAL INSTITUTION in Odisha where **100% of the faculty members (Including Lab Staff) have been trained by Reputed Professors of India (Mostly from IITs)** on several crucial subjects through the NPTEL platforms of the Govt of India.
- With faculty mentors, Trident Students have gained subject expertise from IIT Professors by joining the NPTEL courses of their choice.
- With the expertise perfected through the International Competitive Programming Platforms, special knowledge college clubs, special Industry focussed value added courses and special UPSKILLING programs, students have been winning in the National Level Innovation and Ideathon Competitions regularly.
- Not only TRIDENT has been the undisputed consistent TOPPER under BPUT in terms of the number of corporate campus recruiters in IT sector, our students have reached the **Peak domestic campus placement package of Rs 36 Lakh** and about 70% of our CORE ENGINEERING students of 2023 have secured placements in REPUTED CORE COMPANIES including **Gannon Dunkerley, RDC Concrete, Tata Power, Hitachi, Dalmia Cements, JSW, British Telecom, SmartSoc, ASICZEN, Astra Microwave, Iconic Power Soln, Logic Apt, BEAM edge, SM Consultancy, Penna Cements, IOTL, Shyam Metallics, Muvro, Textron etc.**
- Students benefit through strategic partnerships with ACM, IEEE, IETE and ISTE etc. (Student Chapters), with academic alliance of **Microsoft, Microchip, UI Path, SPARC, PRDC, SAP, CISCO (thingQbator), CADENCE, C-DAC and NBCC etc.** (Industry Academic Alliance), MOUs with Govt of India's Skill sector Councils like ESSCI, PSSC, TSSC, SCGJ etc and Funded Projects like the BRNS-MEMS (With IISc.) and DST's DDP and FIST (Including C-DAC's Supercomputing Facility).
- Some of our interested students are exposed to the concepts of **"QUANTUM COMPUTING LEARNING"** with an **International collaboration.**
- Our **"FINANCE LAB"** with a **global finance platform and "Center for Business Analytics and Digitalisation" (CeBAD) under the Academic Alliance with SAP SE, Germany** are for the futuristic **Digitally Enabled Business Learnings.**
- International Partnerships of our **Sustainability And Climate Research Economics Department (SACRED)** with **United Nations (17 SDGs)** for Decarbonisation coupled with the Executive Development Trainings of our Academic Leadership in the related areas under Harvard, Stanford and Cambridge Universities are steering us towards being a **NETZERO** emission technical campus.

**CAMPUS & Admission Information Block : F-2, Chandaka Industrial Estate,  
Infocity Area, Chandrasekharpur, Bhubaneswar-751024, Contact: 9861191195**